

CONTRACT DOCUMENTS AND SPECIFICATIONS

FOR

Meadows-Northland-Arlington Neighborhood Improvement Project Phase 6A-1

**Site Public Improvements
Division of Engineering
Lexington Fayette Urban County Government**

**LFUCG Bid No. 156-2018
Project No. 160017**

Bid Opening: January 11, 2019

PREPARED BY:



**Integrated Engineering, PLLC
166 Prosperous Place; Suite 220
Lexington, KY 40509
Engineer's Project No. 160017**

Edition: Bid Set

TABLE OF CONTENTS

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

PART 1

ADVERTISEMENT FOR BIDS

INDEX

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

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, **January 11, 2019**, 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 Integrated Engineering PLLC 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.

2. DESCRIPTION OF WORK

Consisting of the construction and/or furnishing of items as listed in the Bid Schedule beginning on page P-6, Part III, Form of Proposal, of this document, for the Meadows Northland Arlington Neighborhood Improvement Phase 6A-1, Lexington-Fayette County, Kentucky.

3. OBTAINING PLANS, SPECIFICATIONS, AND BID DOCUMENTS

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

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

LFUCG
Division of Central Purchasing
200 East Main Street, Third Floor, Rm 338
Lexington, Kentucky 40507
(859) 258-3320

Builder's Exchange
1035 Strader Drive, Ste 100
Lexington, Kentucky 40505

LFUCG
Division of Engineering
101 E Vine Street
Lexington, Kentucky 40507

McGraw-Hill/F W Dodge
2321 Fortune Drive, Ste 112-A
Lexington, Kentucky 40509

4. METHOD OF RECEIVING BIDS

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

Sealed bids shall be clearly marked on the outside of the container as follows: Company Name and Address, Bid Invitation Number, and the Project Name. Bids are to remain sealed until official Bid closure time.

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

5. METHOD OF AWARD

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

6. BID WITHDRAWAL

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

7. BID SECURITY

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

8. 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, January 11, 2019. Sealed proposals shall be clearly marked on the outside of the container as follows: Company Name and Address, Bid Invitation Number, and Project Name to be opened at 2:00 p.m. local time January 11, 2019. Bids are to remain sealed until official Bid closure time. Bids received after the scheduled closing time for receipt of bids will not be considered and will be returned unopened.

9. RIGHT TO REJECT

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

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

The successful bidder must submit with their bid the following items to the Lexington-Fayette Urban County Government:

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

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

All submissions should be directed to:

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

11. NOTICE CONCERNING MWDBE GOAL

Notice of requirement for Affirmative Action to ensure Equal Employment Opportunities and Disadvantaged Business Enterprises (DBE) Contract participation. Disadvantaged Business Enterprises (DBE) consists of Minority-Owned Business Enterprises (MBE) and Woman-Owned Business Enterprises (WBE).

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, which is made up of MBEs and WBEs. The goal for the utilization of Disadvantaged Business Enterprises as subcontractors is a recommended goal. Contractor(s) who fail to meet such goal will be expected to provide written explanations to the Director of the Division of Purchasing of efforts they have made to accomplish the recommended goal, and the extent to which they are successful in accomplishing the

recommended goal will be a consideration in the procurement process. Depending on the funding source, other DBE goals may apply.

For assistance in locating Disadvantaged Business Enterprises Subcontractors contact:

Sherita Miller, Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, 3rd Floor, Room 338
Lexington, Kentucky 40507
859-258-3323
smiller@lexingtonky.gov

12. PRE-BID MEETING

There will be no Pre-Bid meeting for the project.

END OF SECTION

PART II
INFORMATION FOR BIDDERS

INDEX

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

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, for both unit prices and extensions. Totals for each bid item must be added to show the total amount of the bid. Each bid must be submitted in a sealed envelope bearing on the outside the name of the bidder, their address, the name of the project, the invitation number and time and date for which the bid is submitted. Bids must be addressed to the Director of Purchasing, Lexington-Fayette Urban County Government, Third Floor, 200 East Main Street, Lexington, Kentucky 40507. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed as specified above.

3. SUBCONTRACTS

The bidder is specifically advised that any person, firm, or other party to whom it is proposed to award a subcontract under this Contract must be acceptable to the OWNER. All proposed subcontractors must be identified on the Form of Proposal. Prior to the award of Contract, the OWNER or the OWNER'S representative will advise the CONTRACTOR of the acceptance and approval thereof or of any action necessary to be taken. Should any Subcontractor be rejected by the OWNER, the CONTRACTOR shall present a new name and/or firm to the OWNER at no change in the Contract Price.

4. QUALIFICATION OF BIDDER

The OWNER may make such investigations as the OWNER deems necessary to determine the ability of the bidder to perform the Work, and the bidder shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the OWNER that such bidder is properly qualified to carry out the obligations of the Contract and to complete the Work contemplated therein. Conditional bids will not be accepted.

In evaluating Bids, OWNER shall consider the qualifications of the BIDDERS, whether or not the Bids comply with the prescribed requirements, and alternatives and unit prices, as requested. OWNER may consider maintenance requirements, performance data, and disruption or damage to private property. It is OWNER'S intent to accept alternatives, 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. 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 Consultant, and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any bid.

5. BID SECURITY

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

6. LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT

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

7. TIME OF COMPLETION AND LIQUIDATED DAMAGES

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 **\$1000.00** per day as liquidated damages, or the sum as specified in the Contract for each consecutive calendar day thereafter as hereinafter provided in the General Conditions.

8. EXAMINATION OF CONTRACT DOCUMENTS AND SITE

- A. It is the responsibility of each Bidder before submitting a Bid, to (a) examine the Contract Documents thoroughly, (b) visit the site(s) to become familiar with local conditions that may affect cost, progress, performance or furnishing of the work, (c) consider Federal, State and Local laws and regulations that may affect cost, progress, performance or furnishing of the work, (d) study and carefully correlate Bidder's observations with the Contract Documents, and (e) notify Consultant of all conflicts, errors or discrepancies in the Contract Documents.
- B. Bidders should examine the requirements of section 4 of the General Conditions for information pertaining to subsurface conditions, underground structures, underground facilities, and availability of lands, easements, and rights-of-way. The completeness of data, presented in the Contract Documents, pertaining to subsurface conditions, underground structures, and underground facilities for the purposes of bidding or construction is not assured. The Bidder will, at Bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests and studies and obtain any additional information and data which pertain to the physical conditions (surface and subsurface) which may affect cost, progress, performance or furnishing of the Work and which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of the Contract Documents. On request in advance, OWNER will provide access to the site to conduct such explorations and tests as each Bidder deems necessary for submission of a bid. Bidder shall fill all holes, clean up and restore the site to its former condition upon completion of such explorations.
- C. The submission of a Bid will constitute an incontrovertible representation by the Bidder that Bidder has complied with every requirement of this paragraph 8; that without exception the Bid is premised upon furnishing and performing the Work required by the Contract Documents and such means, methods, techniques, sequences or procedures of construction as may be indicated in or required by the Contract Documents; and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

9. ADDENDA AND INTERPRETATIONS

No interpretation of the meaning of the Contract Documents will be made to any bidder orally. Every request for such interpretation should be in writing addressed to the Director of Central Purchasing, who in turn will have an Addendum issued for the Lexington-Fayette Urban County Government, and to be given consideration must be received prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications. Acknowledgement of the receipt of addenda must be included with all submitted bids. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents.

10. SECURITY FOR FAITHFUL PERFORMANCE

- A. Simultaneously with his delivery of the executed Contracts, the CONTRACTOR shall furnish a surety bond or bonds as security for the faithful performance of this Contract and for payment of all persons performing labor on the Project under this Contract and furnishing materials in connection with this Contract, as specified in the General Conditions. The surety on such bond or bonds shall be a duly authorized surety company satisfactory to the OWNER and authorized to do business in the Commonwealth of Kentucky.
- B. All bonds required by this Contract and laws of this State shall be placed with agents licensed in the State of Kentucky. When the premium is paid for such coverage's, 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). Each document will be for 100% of the Contract Bid Amount.**

11. POWER OF ATTORNEY

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

12. TAXES AND WORKMEN'S COMPENSATION

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

13. LAWS AND REGULATIONS

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

14. EROSION AND SEDIMENT CONTROL AND PERMITS

The CONTRACTOR and Subcontractors performing work on projects on behalf of the OWNER shall also comply with all applicable federal, state, and local environmental

regulations and all requirements and conditions set forth in "special" permits including but not limited to Corp of Engineers 404 permits, 401 Water Quality Certifications, Stream Crossing and Floodplain Encroachment Permits as described in Part 4 General Conditions Paragraph 5.17.

15. PREVAILING WAGE LAW AND MINIMUM HOURLY RATES

Federal or state wage rates and regulations, if required for this Project, will be as described in the Special Conditions.

16. AFFIRMATIVE ACTION PLAN

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

1. Affirmative Action Plan of the firm
2. Current Work Force Analysis Form
3. Good Faith Effort Documentation
4. List of Disadvantaged Business Enterprise Subcontractors and the Dollar Value of each Subcontract

A Work Force Analysis Form shall be submitted for each Contract. 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

17. CONTRACT TIME

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

18. SUBSTITUTE OR "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 CONSULTANT and

OWNER, application for such acceptance will not be considered by the CONSULTANT 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 CONSULTANT and OWNER is set forth in the General Conditions.

19. ALTERNATE BIDS

Bidders shall submit alternate bids/proposals only if and when such alternate bids/proposals have been specifically requested in an Invitation for Bids. If alternate bids/proposals are requested in an Invitation for Bids, the form of submission of such alternate bid and the conditions under which such alternate bids will be considered for award of a contract will be established in the Invitation.

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

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

20. SIGNING OF AGREEMENT

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

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

A. Outreach for MWDBE(s)

The Lexington-Fayette Urban County Government (LFUCG) maintains a database of MWDBE contractors and organizations. When a LFUCG construction project is advertised for bidding, notices are sent to companies registered at <https://lfucg.economicengine.com>. The notices describe the project and indicate the deadline for submitting bids.

If you wish to be added to the LFUCG MWDBE contractor database, please contact:

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

B. Bid Bond Assistance for MWDBE(s)

For those MWDBE contractors who wish to bid on LFUCG project, bid bond assistance is available. This bid bond assistance is in the form of a "Letter of Certification" which is accepted by the LFUCG's Division of Purchasing, in lieu of a bid bond. The "Letter of Certification" must be included in the bid package when it is submitted to the Division of Purchasing. The "Letter of Certification" will reference the specific project for which the bid is being submitted, and the time and date on which the bid is due. Bid bond assistance must be requested from the Lexington-Fayette Urban County Government's Division of Central Purchasing.

C. Eligibility for Bid Bond Assistance for MWDBE(s)

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

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

D. MWDBE Subcontractors

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

For a list of eligible subcontractors, please contact:

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

22. LFUCG NON-APPROPRIATION CLAUSE

Contractor acknowledges that the LFUCG is a governmental entity, and the contract validity is based upon the availability of public funding under the authority of its statutory mandate.

In the event that public funds are unavailable and not appropriated for the performance of the LFUCG's obligations under this contract, then this contract shall automatically expire without penalty to the LFUCG thirty (30) days after written notice to Contractor of the unavailability and non-appropriation of public funds. It is expressly agreed that the LFUCG shall not activate this non-appropriation provision for its convenience or to circumvent the requirements of this contract, but only as an emergency fiscal measure during a substantial fiscal crisis, which affects generally its governmental operations.

In the event of a change in the LFUCG's statutory authority, mandate and mandated functions, by state and federal legislative or regulatory action, which adversely affects the LFUCG's authority to continue its obligations under this contract, then this contract shall automatically terminate without penalty to the LFUCG upon written notice to Contractor of such limitation or change in the LFUCG's legal authority.

PART III
FORM OF PROPOSAL

INDEX

1. PROPOSAL
2. LEGAL STATUS OF BIDDER
3. BIDDER'S AFFIDAVIT
4. BID SCHEDULE
5. STATEMENT OF BIDDER'S QUALIFICATIONS
6. LIST OF PROPOSED SUBCONTRACTORS
7. AUTHENTICATION OF BID AND STATEMENT OF NON-COLLUSION AND NON-CONFLICT OF INTEREST
8. STATEMENT OF EXPERIENCE
9. EQUAL OPPORTUNITY AGREEMENT
10. EQUAL EMPLOYMENT OPPORTUNITY AFFIRMATIVE ACTION POLICY
11. EVIDENCE OF INSURABILITY
12. MWDBE AND VETERAN-OWNED BUSINESS PARTICIPATION GOALS

NOTE:

CONTRACT MAY NOT BE AWARDED IF A COMPLETED AND SIGNED COPY OF THE "EVIDENCE OF INSURABILITY" FORM (LOCATED AT THE END OF PART III) IS NOT PROVIDED.

PART III

MEADOWS-NORTHLAND-ARLINGTON NEIGHBORHOOD IMPROVEMENT PROJECT

PHASE 6A-1

Bid # 156-2018

FORM OF PROPOSAL

Place: Lexington, Kentucky

Date: _____

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

This Proposal Submitted by _____

(Name and Address of Bidding Contractor)

(Hereinafter called "Bidder"), organized and existing under the laws of the State of _____, doing

business as _____

"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 **MEADOWS-NORTHLAND-ARLINGTON NEIGHBORHOOD IMPROVEMENT PROJECT, PHASE 6A-1,** Lexington, Kentucky, having examined all the bid documents, having examined the site for proposed Work, and being familiar with all of the conditions surrounding the construction of the proposed Project, including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies, and to construct the Project in accordance with the Contract Documents, within the time set forth therein, and at the lump sum and/or unit prices stated hereinafter. These prices are to cover all expenses incurred in performing the Work required under the Contract Documents, of which this proposal is a part.

The Bidder hereby acknowledges receipt of the following addenda:

Addendum No. _____ Date _____; 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.

FORM OF PROPOSAL

LEGAL STATUS OF BIDDER

Bidder _____

Date _____

* 1. A corporation duly organized and doing business under the laws of the State of _____, for whom _____, bearing the official title of _____, whose signature is affixed to this 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 Proposal.

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

BIDDERS AFFIDAVIT

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

1. His/her name is _____ and he/she is the individual submitting the bid or is the authorized representative of _____, 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. _____

COMMONWEALTH OF KENTUCKY

COUNTY OF FAYETTE

The foregoing instrument was subscribed, sworn to and acknowledged before me by

_____ on this the _____ day of _____, 201__.

My Commission expires: _____

NOTARY PUBLIC, STATE AT LARGE, KY

Please refer to Part I, Notice of Requirements for Compliance with LFUCG Taxes and Fees, Item "15" prior to completing this form.

FORM OF PROPOSAL

BID SCHEDULE
MNA PHASE 6A-1

The Bidder agrees to perform all the Work described in the Specifications and shown on the Plans for the following lump sum and/or unit prices which shall include the furnishing of all labor, materials, supplies, services, all items of cost, overhead, taxes (federal, state, local), and profit for the Contractor and any Subcontractor involved. The Bidder must make the extensions and additions showing the total amount of bid. The information shown below is the Engineers Schedule of Values. It is the Contractor's responsibility to include any additional quantities, descriptions, unit prices and total amounts for items shown in the contract documents for completion of the work. Items not listed are considered incidental to the work. Lexington-Fayette Urban County Government reserves the right to contract for work associated with the most qualified, responsive and lowest bidder for MNA Phase 6A-1.

CDBG ITEMS

| PHASE 6A-1 | | | | | |
|-----------------------------|---|-------------|-----------------------------|-----------------------|---------------------------------|
| BID ITEM NO. | UNIT DESCRIPTION | UNIT | APPROX. QUANTITY | UNIT PRICE | TOTAL AMOUNT BID |
| A-1 | Mobilization | LS | 1 | \$ | \$ |
| A-2 | Performance & Payment Bonds | LS | 1 | \$ | \$ |
| A-3 | Demobilization | LS | 1 | \$ | \$ |
| A-4 | Erosion and Sediment Control and Conformance with SWPPP | LS | 1 | \$ | \$ |
| A-5 | Project Signs | EA | 1 | \$ | \$ |

| | | | | | |
|------|---|-----|-----|----|----|
| A-6 | Clearing & Grubbing | LS | 1 | \$ | \$ |
| A-7 | Excavation & Grading | LS | 1 | \$ | \$ |
| A-8 | Maintenance of Traffic | LS | 1 | \$ | \$ |
| A-9 | Construction Staking | LS | 1 | \$ | \$ |
| A-10 | Remove & Replace 4' Chain Link Fence and Footings | LF | 750 | \$ | \$ |
| A-11 | Remove & Replace Wood Privacy Fence and Footings | LF | 150 | \$ | \$ |
| A-12 | Asphalt Pavement Surface & Binder – Residential Driveway Construction | TON | 80 | \$ | \$ |
| A-13 | Asphalt Pavement Surface - Roadway Reconstruction | TON | 344 | \$ | \$ |
| A-14 | Asphalt Pavement Binder – Roadway Reconstruction | TON | 483 | \$ | \$ |
| A-15 | 6" Depth Concrete Residential Driveway Reconstruction | SY | 150 | \$ | \$ |

| | | | | | |
|------|---|-----|------|----|----|
| A-16 | DGA - Residential Driveway Reconstruction | TON | 279 | \$ | \$ |
| A-17 | DGA - Sidewalk Reconstruction | TON | 300 | \$ | \$ |
| A-18 | DGA - Roadway Reconstruction | TON | 1786 | \$ | \$ |
| A-19 | No. 2 Stone Bridging – Roadway Reconstruction (as directed by engineer) | TON | 728 | \$ | \$ |
| A-20 | LFUCG Curb & Gutter Type 1 – Roadway Construction | LF | 1715 | \$ | \$ |
| A-21 | Biaxial Geogrid Type 2 (as directed by engineer) | SY | 746 | \$ | \$ |
| A-22 | ADA Tactile Warning Tile – Installation ONLY – Pavers provided by Owner | SF | 48 | \$ | \$ |
| A-23 | Geotextile Fabric (as directed by engineer) | SY | 746 | \$ | \$ |
| A-24 | 4-1/2-inch Depth Concrete Walkway with Reinforcement - Residential | SY | 79 | \$ | \$ |
| A-25 | 4-1/2-inch Depth Concrete Walkway with Reinforcement - Public Street | SY | 756 | \$ | \$ |

| | | | | | |
|------|--|----|-----|----|----|
| A-26 | 6-inch Depth Concrete Driveway Entrance Apron with reinforcement | SY | 287 | \$ | \$ |
| A-27 | LFUCG Curb Inlet Type "A" | EA | 6 | \$ | \$ |
| A-28 | LFUCG Curb Inlet Type "D" | EA | 3 | \$ | \$ |
| A-29 | LFUCG Surface Inlet Type "B" (36"x36") | EA | 1 | \$ | \$ |
| A-30 | Storm Pipe (15" Dia.) | LF | 34 | \$ | \$ |
| A-31 | Storm Pipe (18" Dia.) | LF | 241 | \$ | \$ |
| A-32 | Storm Pipe (24" Dia.) | LF | 735 | \$ | \$ |
| A-33 | 4" Dia. Perforated Drain Pipe (at Curb Inlets and Behind Wall) | LF | 450 | \$ | \$ |
| A-34 | Tie-In to Existing Storm | EA | 1 | \$ | \$ |
| A-35 | Seeding and Protection | SY | 960 | \$ | \$ |
| A-36 | Sod | SY | 862 | \$ | \$ |

| | | | | | |
|----------------------------------|--|----|------|----|----|
| A-37 | Final Cleanup | LS | 1 | \$ | \$ |
| A-38 | Video Inspection of All New Storm Sewer Piping | LF | 1010 | \$ | \$ |
| A-39 | Utility Coordination | LS | 1 | \$ | \$ |
| Phase 6A-1 (Items A-1 Thru A-39) | | | | | \$ |

| PHASE 6A-1 SANITARY SEWER | | | | | |
|--------------------------------------|--|------|---------------------|---------------|------------------------|
| BID ITEM NO. | UNIT DESCRIPTION | UNIT | APPROX. QUANTITY | UNIT PRICE | TOTAL AMOUNT BID |
| A-40 | LFUCG Sanitary Manhole Type "A" 4' Dia. | EA | 10 | \$ | \$ |
| A-41 | 8" PVC Sanitary Sewer | LF | 1304 | \$ | \$ |
| A-42 | 12" PVC Sanitary Sewer Pipe | LF | 42 | \$ | \$ |
| A-43 | 6" Dia. PVC Lateral Sanitary Sewer Pipe | LF | 1200 | \$ | \$ |
| A-44 | Exterior LFUCG Cleanout | EA | 38 | \$ | \$ |

| | | | | | |
|--|---|----|------|----|----|
| A-45 | 6" x 8" PVC Tees | EA | 38 | \$ | \$ |
| A-46 | Cleaning and Video of New Sanitary Sewer Pipe | LF | 1346 | \$ | \$ |
| Phase 6A-1 SANITARY SEWER (Items A-40 thru A-46) | | | | | \$ |

Phase 6A-1 Sub Total Amount of Bid (Items A-1 through A-39) = \$ _____

Sanitary Sewer Sub Total Amount of Bid (Items A-40 through A-46) = \$ _____

Total Amount of Bid (Items A-1 through A-46) = \$ _____

Respectfully Submitted,

BY: _____
(NAME OF FIRM)

DATE: _____

BY: _____

TITLE: _____

OFFICIAL ADDRESS:

_____ (Seal if Bid is by Corporation)

By signing this form, you agree to all of the terms and associated forms.

FORM OF PROPOSAL

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: _____
2. Permanent Place of Business: _____
3. When Organized: _____
4. Where Incorporated: _____
5. Construction Plant and Equipment Available for this Project:

(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:

(Surety)

Signed: _____ (Representative of Surety)

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

| <u>NAME</u> | <u>LOCATION</u> | <u>CONTRACT SUM</u> |
|-------------|-----------------|---------------------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

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

| <u>NAME</u> | <u>LOCATION</u> | <u>CONTRACT SUM</u> |
|-------------|-----------------|---------------------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

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

| <u>NAME</u> | <u>POSITION DESCRIPTION</u> | <u>NO. OF YEARS WITH BIDDER</u> |
|-------------|-----------------------------|---------------------------------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

11. DBE Participation on current bonded projects under contract:

| <u>SUBCONTRACTORS</u> <u>(LIST)</u> | <u>PROJECT</u> <u>(SPECIFIC TYPE)</u> | <u>DBE</u> | <u>MAJORITY</u> |
|--|--|------------|-----------------|
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |

(USE ADDITIONAL SHEETS IF NECESSARY)

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

Respectfully submitted:

(Name of Contracting Firm)

BY: _____

TITLE: _____

DATE _____, 2016

FORM OF PROPOSAL

LIST OF PROPOSED SUBCONTRACTORS

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

BRANCH OF WORK - LIST EACH MAJOR ITEM

SUBCONTRACTOR

| | |
|----------|----------------|
| 1. _____ | Name: _____ |
| | Address: _____ |
| 2. _____ | Name: _____ |
| | Address: _____ |
| 3. _____ | Name: _____ |
| | Address: _____ |
| 4. _____ | Name: _____ |
| | Address: _____ |
| 5. _____ | Name: _____ |
| | Address: _____ |
| 6. _____ | Name: _____ |
| | Address: _____ |
| 7. _____ | Name: _____ |
| | Address: _____ |

FORM OF PROPOSAL

**AUTHENTICATION OF BID AND STATEMENT OF
NON-COLLUSION AND 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. This offer is for 60 calendar days from the date this bid is opened. 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.

READ CAREFULLY - SIGN IN SPACE BELOW - FAILURE TO SIGN INVALIDATES BID.

Signed by _____

Firm _____

Address _____

Telephone _____

Date _____

FORM OF PROPOSAL

STATEMENT OF EXPERIENCE

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

BY: _____
Name of Firm

DATE: _____

BY: _____

TITLE: _____

* Include all officers, office management's, Affirmative Action officials, and field management personnel.

Attach separate sheets if necessary.

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 cancelled and the contractor may be declared ineligible for future consideration.

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

Bidders

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

Signature

Name of Business

EQUAL EMPLOYMENT OPPORTUNITY AFFIRMATIVE ACTION POLICY

It is the policy of _____
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.

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

Signature: _____
(Bidding Contractor)

Title: _____

Date: _____

WORKFORCE ANALYSIS FORM

Name of Organization: _____

Date: ____ / ____ / ____

| Categories | Total | White (Not Hispanic or Latino) | | Hispanic or Latino | | Black or African-American (Not Hispanic or Latino) | | Native, Hawaiian and Other Pacific Islander (Not Hispanic) | | Asian (Not Hispanic or Latino) | | American Indian or Alaskan Native (Not Hispanic or Latino) | | Two or More Races (Not Hispanic or Latino) | | Total | |
|---------------------|-------|--------------------------------|---|--------------------|---|--|---|--|---|--------------------------------|---|--|---|--|---|-------|--|
| | | M | F | M | F | M | F | M | F | M | F | M | F | M | F | | |
| Administrators | | | | | | | | | | | | | | | | | |
| Professionals | | | | | | | | | | | | | | | | | |
| Superintendents | | | | | | | | | | | | | | | | | |
| Supervisors | | | | | | | | | | | | | | | | | |
| Foremen | | | | | | | | | | | | | | | | | |
| Technicians | | | | | | | | | | | | | | | | | |
| Protective Service | | | | | | | | | | | | | | | | | |
| Para-Professionals | | | | | | | | | | | | | | | | | |
| Office/Clerical | | | | | | | | | | | | | | | | | |
| Skilled Craft | | | | | | | | | | | | | | | | | |
| Service/Maintenance | | | | | | | | | | | | | | | | | |
| Total: | | | | | | | | | | | | | | | | | |

Prepared By: _____

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

Names Insured: _____

Employee ID: _____

Address: _____

Phone: _____

Project to be insured: _____

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

| Section Items | Coverage | Minimum Limits and Policy Requirements | Limits Provided To Insured | Name of Insurer | A.M. Best's | |
|----------------|----------|---|----------------------------|-----------------|-------------|--------|
| | | | | | Code | Rating |
| (X)SC 1.4.1.1 | CGL | \$1,000,000/per occ; \$2,000,000 aggregate; or \$2,000,000 combined single limit. | \$ | | | |
| (X) SC 1.4.1.2 | AUTO | Combined single; \$1,000,000 per occurrence | \$ | | | |
| (X)SC 1.4.1.3 | WC | \$ STATUTORY w/endorsement for Employer's Liability of \$500,000/ per occ. | \$ STATUTORY | | | |

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.

 Agency or Brokerage

 Name of Authorized Representative

 Street Address

 Title

 City State Zip

 Authorized Signature

 Telephone Number

 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.

IMPORTANT: CONTRACT MAY NOT BE AWARDED IF A COMPLETED AND SIGNED COPY OF THIS FORM FOR ALL COVERAGE'S LISTED ABOVE IS NOT PROVIDED.

**Lexington-Fayette Urban County Government
MWDBE and Veteran-Owned Business Participation Goals**

A. GENERAL

1. The LFUCG request all potential contractors to make a concerted effort to include Minority-Owned (MBE), Woman-Owned (WBE) Business Enterprises and Veteran-Owned Businesses 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%) for MWDBE participation and other requirements as outlined in this section.
4. The LFUCG has also established 3% of total procurement costs as a Goal for participation of Veteran-Owned Businesses.
5. It is therefore a request of each Bidder to include in its bid the same goal (3%) for Veteran-Owned 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, Woman-Owned or Veteran-Owned subcontractors and suppliers for work done or materials purchased for this contract. (See Subcontractor Monthly Payment Report)
2. Replacement of a Minority-Owned, Woman-Owned or Veteran-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 MWDBE Firm; this is subject to approval by the LFUCG. (See LFUCG MWDBE 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 MWDBE subcontractors and Veteran-Owned 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.
3. A Disadvantaged Business (DBE) is defined as a business which is certified as being at least 51% owned and operated by a person or persons that are economically and socially disadvantaged.
4. A Veteran-Owned Small Business (VOSB) is defined as a business which is certified as being at least 51% owned and operated by a veteran and/or a service disabled veteran.
5. Good Faith Efforts are efforts that, given all relevant circumstances, a bidder or proposer actively and aggressively seeking to meet the goals, can reasonably be expected to make. In evaluating good faith efforts made toward achieving the goals, whether the bidder or proposer has performed the efforts outlined in the Obligations of Bidder for Good Faith Efforts outline in this document will be considered, along with any other relevant factors.

D. OBLIGATION OF BIDDER FOR GOOD FAITH EFFORTS

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 "MWDBE Participation Form". The applicable information must be completed and submitted as outlined below.
4. **Failure to submit this information as requested may be cause for rejection of bid.**

E. DOCUMENTATION REQUIRED FOR GOOD FAITH EFFORTS

1. Bidders reaching the Goal are required to submit only the “MWDBE Participation Form.” The form must be fully completed including names and telephone number of participating MWDBE 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 “MWDBE Participation Form”, the “Quote Summary Form” and a written statement documenting their Good Faith Effort to do so. (If bid includes no MWDBE 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. Advertised opportunities to participate in the contract by the in at least two (2) publications of general circulation media; trade and professional publications; small and minority business or trade publications; and publications or trades targeting minority, women and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow MWDBE firms to participate.
 - b. Included documentation of advertising in the above publications with the bidder’s good faith efforts package
 - c. Attended LFUCG Central Purchasing Economic Inclusion Outreach event
 - d. Attended pre-bid meetings that were scheduled by LFUCG to inform MWDBEs if subcontracting opportunities
 - e. Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and MWDBE firms
 - f. Requested a list of MWDBE subcontractors or suppliers from LFUCG Economic Engine and showed evidence of contacting the companies on the list(s)
 - g. Contacted organizations that work with MWDBE companies for assistance in finding certified MWDBE firms to work on this project. Those contacted, and their responses should be a part of the bidder’s good faith efforts documentation.
 - h. Sent written notices, by certified mail, email or facsimile, to qualified, certified MWDBEs soliciting their participation in the contract not less than seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.
 - i. Followed up initial solicitations by contacting MWDBEs to determine their level of interest.

- j. Provided the interested MWDBE firm with adequate and timely information about the plans, specifications, and requirements of the contract.
- k. Selected portions of the work to be performed by MWDBE firms in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MWDBE participation, even when the prime contractor may otherwise perform these work items with its own workforce
- l. Negotiated in good faith with interested MWDBE firms not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.
- m. Included documentation of quotations received from interested MWDBE firms which were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.
- n. Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a MWDBE quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy MWDBE goals.
- o. Made an effort to offer assistance to or refer interested MWDBE firms to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal
- p. Made efforts to expand the search for MWBE firms beyond the usual geographic boundaries.
- q. Other--any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include MWDBE participation.

Failure to submit any of the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement. Documentation of Good Faith Efforts are to be submitted with the Bid, if the participation Goal is not met.



MINORITY BUSINESS ENTERPRISE PROGRAM

Shèrita Miller
Minority Business Enterprise Liaison
Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street
Lexington, KY 40507
smiller@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
- Economically and Socially Disadvantaged

In addition, to that end the city council also adopted and implemented resolution 167-91 – Veteran-Owned Businesses 3% Goal Plan in July of 2015. The resolution states in part (a full copy is available in Central Purchasing):

“A Resolution adopting a three percent (3%) minimum goal for certified veteran-owned small businesses and service-disabled veteran-owned businesses for certain of these Lexington-Fayette Urban County contracts related to construction for professional services and authorizing the Division of Purchasing to adopt and implement guidelines and/or policies consistent with the provisions and intent of this resolution by no later than July 1, 2015.”

We have compiled the list below to help you locate certified MBE, WBE and DBE certified businesses. Below is a listing of contacts for LFUCG Certified MWDBEs in Economic Engine (<https://lfucg.economicengine.com>)

| Business | Contact | Email Address | Phone |
|---|---|--|--------------|
| LFUCG | <i>Sherita Miller</i> | smiller@lexingtonky.gov | 859-258-3323 |
| Commerce Lexington – Minority Business Development | <i>Tyrone Tyra</i> | ttyra@commercelexington.com | 859-226-1625 |
| Tri-State Minority Supplier Diversity Council | <i>Sonya Brown</i> | sbrown@tsmsdc.com | 502-625-0137 |
| Small Business Development Council | <i>Dee Dee Harbut UK SBDC</i> | dbarbut@uky.edu | 859-257-7668 |
| | <i>Shire Hawkins</i> | smack@uky.edu | |
| Community Ventures Corporation | <i>James Coles</i> | jcoles@cycck.org | 859-231-0054 |
| KY Transportation Cabinet (KYTC) | <i>Melvin Bynes</i> | Melvin.bynes@ky.gov | 502-564-3601 |
| KYTC Pre-Qualification | <i>Shella Eagle</i> | Shella.Eagle@ky.gov | 502-782-4815 |
| Ohio River Valley Women's Business Council (WBENC) | <i>Rea Waldon</i> | rwaldon@ocul.org | 513-487-6534 |
| Kentucky MWBE Certification Program | <i>Yvette Smith, Kentucky Finance Cabinet</i> | Yvette.Smith@ky.gov | 502-564-8099 |
| National Women Business Owner's Council (NWBOC) | <i>Janet Harris-Lange</i> | janet@nwbo.org | 800-675-5066 |
| Small Business Administration | <i>Robert Coffey</i> | robertcoffey@sba.gov | 502-582-5971 |
| LaVoz de Kentucky | <i>Andres Cruz</i> | lavozdeky@yahoo.com | 859-621-2106 |
| The Key News Journal | <i>Patrice Muhammad</i> | patricem@keynewsjournal.com | 859-373-9428 |



LFUCG MWDBE PARTICIPATION FORM

Bid/RFP/Quote Reference # _____

The MWDBE and/or Veteran 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.

| MWDBE Company, Name, Address, Phone, Email | MBE WBE or DBE | Work to be Performed | Total Dollar Value of the Work | % Value of Total Contract |
|--|----------------|----------------------|--------------------------------|---------------------------|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |

The undersigned company representative submits the above list of MWDBE 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.

Company

By

Date

Title



LFUCG MBE/WBE SUBSTITUTION FORM
 Bid/RFP/Quote Reference # _____

The substituted MWDBE and/or Veteran 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 MWDBE Company Name, Address, Phone, Email | MWDBE 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.

 Company

 Date

 Company Representative

 Title



MBE QUOTE SUMMARY FORM

Bid/RFP/Quote Reference # _____

The undersigned acknowledges that the minority and/or veteran-owned subcontractors listed on this form did submit a quote to participate on this project.

| | |
|---------------------|------------------------|
| Company Name | Contact Person |
| Address/Phone/Email | Bid Package / Bid Date |

| MWDBE Company Address | Contact Person | Contact Information (work phone, Email, cell) | Date Contacted | Services to be performed | Method of Communi- cation (email, phone meeting, ad, event etc) | Total dollars \$\$ Do Not Leave Blank (Attach Documentation) | MBE * AA HA AS NA Female | Veteran |
|-----------------------------|-------------------|--|-------------------|--------------------------------|--|---|---|---------|
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

(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.

Company

Date

Company Representative

Title



LFUCG SUBCONTRACTOR MONTHLY PAYMENT REPORT

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. The LFUCG also has a 3% goal plan adopted by cited council to increase the participation of veteran owned businesses in the procurement process. In order to measure that goal LFUCG will track spending with MWDBE 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 # _____

Total Contract Amount Awarded to Prime Contractor for this Project _____

| | |
|--------------------------|------------------------------------|
| Project Name/ Contract # | Work Period/ From: _____ To: _____ |
| Company Name: | Address: _____ |
| Federal Tax ID: | Contact Person: _____ |

| 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.

Company

Company Representative

Date

Title

LFUCG STATEMENT OF GOOD FAITH EFFORTS

Bid/RFP/Quote # _____

By the signature below of an authorized company representative, we certify that we have utilized the following Good Faith Efforts to obtain the maximum participation by MWDBE business enterprises on the project and can supply the appropriate documentation.

- _____ Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow MWDBE firms to participate.
- _____ Included documentation of advertising in the above publications with the bidder's good faith efforts package
- _____ Attended LFUCG Central Purchasing Economic Inclusion Outreach event
- _____ Attended pre-bid meetings that were scheduled by LFUCG to inform MWDBEs of subcontracting opportunities
- _____ Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and MWDBE firms
- _____ Requested a list of MWDBE subcontractors or suppliers from LFUCG Economic Engine and showed evidence of contacting the companies on the list(s).
- _____ Contacted organizations that work with MWDBE companies for assistance in finding certified MWDBE firms to work on this project. Those contacted and their responses should be a part of the bidder's good faith efforts documentation.
- _____ Sent written notices, by certified mail, email or facsimile, to qualified, certified MWDBEs soliciting their participation in the contract not less than seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.
- _____ Followed up initial solicitations by contacting MWDBEs to determine their level of interest.
- _____ Provided the interested MWDBE firm with adequate and timely information about the plans, specifications, and requirements of the contract.
- _____ Selected portions of the work to be performed by MWDBE firms in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to

facilitate MWDBE participation, even when the prime contractor may otherwise perform these work items with its own workforce

_____ Negotiated in good faith with interested MWDBE firms not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.

_____ Included documentation of quotations received from interested MWDBE firms which were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.

_____ Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a MWDBE quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy MWDBE goals.

_____ Made an effort to offer assistance to or refer interested MWDBE firms to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal

_____ Made efforts to expand the search for MWDBE firms beyond the usual geographic boundaries.

_____ Other - any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include MWDBE participation.

Failure to submit any of the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement. Documentation of Good Faith Efforts are to be submitted with the Bid, if the participation Goal is not met.

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

Company

Company Representative

Date

Title

PART IV
GENERAL CONDITIONS
TABLE OF CONTENTS

| Article Number | Title | Page |
|-------------------|--|-------|
| 1 | DEFINITIONS..... | GC-6 |
| 2 | PRELIMINARY MATTERS | GC-10 |
| 3 | CONTRACT DOCUMENTS: CONFLICTS, INTENT, AMENDING AND REUSE..... | GC-12 |
| 4 | AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; REFERENCE POINTS | GC-13 |
| 5 | CONTRACTOR'S RESPONSIBILITIES..... | GC-16 |
| 6 | OTHER WORK..... | GC-26 |
| 7 | OWNER'S RESPONSIBILITIES..... | GC-27 |
| 8 | ENGINEER'S STATUS DURING CONSTRUCTION..... | GC-28 |
| 9 | CHANGES IN THE WORK..... | GC-31 |
| 10 | CHANGE OF CONTRACT PRICE..... | GC-32 |
| 11 | CHANGE OF CONTRACT TIME..... | GC-39 |
| 12 | WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK | GC-40 |
| 13 | PAYMENTS TO CONTRACTOR AND COMPLETION | GC-43 |
| 14 | SUSPENSION OF WORK AND TERMINATION | GC-47 |
| 15 | MISCELLANEOUS | GC-49 |

DETAILED TABLE OF CONTENTS OF GENERAL CONDITIONS

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

- 5.12 Taxes
- 5.13 Use of Premises
- 5.14 Record Drawings
- 5.15 Shop Drawings and Samples
- 5.16 Continuing the Work
- 5.17 Notice of Contention

- 6. Other Work
 - 6.1 Related Work at Site
 - 6.2 Other Contractors or Utility Owners
 - 6.3 Contractor to Inspect

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

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

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

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

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

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

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

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

- 15. Miscellaneous
 - 15.1 Non-Discrimination in Employment
 - 15.2 Temporary Street Closing or Blockage
 - 15.3 Percentage of Work Performed by Prime CONTRACTOR
 - 15.4 Clean-up
 - 15.5 General

PART IV

GENERAL CONDITIONS

1. DEFINITIONS

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

1.1 Addenda

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

1.2 Agreement

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

1.3 Application for Payment

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

1.4 Bid

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

1.5 Bidder

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

1.6 Bonds

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

1.7 Calendar Day

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

1.8 Change Order

A document recommended by ENGINEER, which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion or revision in the Work, or an

adjustment in the Contract Price or the Contract Time, issued on or after the Effective Date of the Agreement.

1.9 Contract Documents

The 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 Price

The monies payable by OWNER to CONTRACTOR under the Contract Documents as stated in the Agreement.

1.11 Contract Time

The number of consecutive calendar days starting ten (10) days after the date specified in 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).

1.14 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 Lexington-Fayette Urban County Government Division of Engineering or its authorized representative.

- 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 may 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 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.

1.33 Underground Facilities

Includes but is not limited to 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.

1.34 Unit Price Work

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

1.35 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.

1.36 Completion, Substantial

The term "Substantial Completion" does not apply to this project. Only the term "Contract Completion Date" as defined below applies to the project, its Contract Time and its liquidated damages.

1.37 Contract Completion Date

The Contract Completion Date is the date by which every item of work is to be completed and accepted. This date is calculated by adding the number of days designated as the Contract Time to the date of the Notice to Proceed. It includes: all items of additional work for which the Contract Completion Date has been extended in writing, by the ENGINEER; all punch list items unless a specific exception has been granted, based on seasonal conditions or product availability, as documented in writing by the ENGINEER. Project elements that do not have to be concluded by the Contract Completion Date include: the final, adjusting change order; the CONTRACTOR's final payment; execution of the affidavit and release; acknowledgement of the Notice of Termination from KDOW.

1.38 Liquidated Damages

Liquidated Damages are deductions from monies otherwise due the CONTRACTOR, for failure to have all work completed and accepted by the Contract Completion Date. The OWNER will deduct daily charges, not as a penalty, but as agreed liquidated damages for each calendar day beyond the Contract Completion Date, without regard to inclement weather or temperature limitations.

2. PRELIMINARY MATTERS

2.1 Delivery of Bonds

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

2.2 Copies of Documents

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

2.3 Commencement of Contract Time; Notice to Proceed

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

2.4 Starting the Project

CONTRACTOR may 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, EEO-Affirmative Action Officer, 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 therefor. 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 that 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, and 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. Field and Change Orders
2. Addenda
3. Drawings
4. Technical Specifications
5. Special Conditions
6. Agreement
7. Instruction to Bidders
8. General Conditions

Figure dimension on drawings shall govern over computed dimensions and computed dimensions shall govern over scaled dimensions. Detail 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

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 Appendix 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, 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) 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, 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 may be issued as provided in Article 10 to reflect current material inaccuracy or difference to the extent that they are attributable to any such inaccuracy or difference. Change Order requests due to improperly relocated utilities will be considered in terms of contract time adjustment only (see Paragraph 10.5.6)

4.3 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 Planning, Preservation &

Development, 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 site 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. 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 ENGINEER if sufficient information is submitted by CONTRACTOR to allow ENGINEER to determine that the material or equipment proposed is equivalent or equal to that named. The procedure for review by ENGINEER will include the

following. Requests for review of substitute items of material and equipment will not be accepted by 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 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 ENGINEER in evaluating the proposed substitute. 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 ENGINEER, if CONTRACTOR submits sufficient information to allow ENGINEER to determine that the substitute proposed is equivalent to that indicated or required by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in paragraph 5.7.1 as applied by ENGINEER.

5.7.3 ENGINEER'S Approval

ENGINEER will be allowed a reasonable time within which to evaluate each proposed substitute. ENGINEER will be the sole judge of acceptability, and no substitute will be ordered, installed or utilized without 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. ENGINEER will record time required by ENGINEER and ENGINEER'S consultants in evaluating substitutions proposed by CONTRACTOR and in making changes in the Contract Documents occasioned thereby. Whether or not ENGINEER accepts a proposed substitute, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and 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 ENGINEER determines that the reduction would be to the advantage of the OWNER.

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. The permits include but are not limited to KDOW-KPDES Notice of Intent Application (NOI) for Construction and LFUCG Land Disturbance Permit. 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.

5.12 Taxes

Any party, firm or individual submitting a proposal pursuant to this invitation must be in compliance with the requirements of the Lexington-Fayette Urban County Government regarding taxes and fees before they can be considered for award of the contract and must maintain a "current" status with regard to those taxes and fees throughout the term of the contract. The contractor must be in compliance with Chapter 13 from the Code of Ordinances of the Lexington-Fayette Urban County Government. The contractor must be in compliance with Ordinance 35-2000 pursuant to contractor registration with the Division of Building Inspection. If applicable, said business must have a Fayette County business license.

Pursuant to KRS 45A.343 and KRS 45A.345, the contractor shall

- (1) Reveal any final determination of a violation by the contractor within the previous five year period pursuant to KRS Chapters 136 (corporation and utility taxes), 139 (sales and use taxes), 141 (income taxes), 337 (wages and hours), 338 (occupational safety and health of employees), 341 (unemployment and compensation) and 342 (labor and human rights) that apply to the contractor; and*
- (2) Be in continuous compliance with the above-mentioned KRS provisions that apply to the contractor for the duration of the contract.*

A contractor's failure to reveal the above or to comply with such provisions for the duration of the contract shall be grounds for cancellation of the contract and disqualification of the contractor from eligibility for future contracts for a period of two (2) years.

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 Project site and land and 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.

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 Review

ENGINEER will review with reasonable promptness Shop Drawings and samples, but ENGINEER'S review 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 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. 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 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 Drawing 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.

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

BID OF: _____

ADDRESS: _____

SIGNATURE OF BIDDER: _____

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. Prior notice is not necessary.

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 Contractor To Inspect

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 nonapparent defects and deficiencies in the other work.

7. OWNER'S RESPONSIBILITIES

7.1 Communications

OWNER shall issue all communications to CONTRACTOR through ENGINEER.

7.2 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.

7.3 Change Orders

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

7.4 Inspections, Tests and Approvals

OWNER'S responsibility in respect to certain inspections, tests and approvals is set forth in paragraph 12.3.

7.5 Stop or Suspend Work

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

8. ENGINEER'S STATUS DURING CONSTRUCTION

8.1 OWNER'S Representative

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

8.2 Visits to Site

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

8.3 Project Representation

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

8.4 Clarifications and Interpretations

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

8.5 Authorized Variations in Work

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

8.6 Rejecting Defective Work

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

8.7 Shop Drawings

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

8.8 Change Orders.

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

8.9 Payments

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

8.10 Determinations for Unit Prices

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

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

8.11 Decision on Disputes

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

8.12 LIMITATIONS ON ENGINEER'S RESPONSIBILITIES

8.12.1 CONTRACTOR, Supplier, or Surety

Neither ENGINEER'S authority to act under this Article 8 or elsewhere in the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of ENGINEER to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization performing any of the Work, or to any surety for any of them.

8.12.2 To Evaluate the Work

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

8.12.3 CONTRACTOR'S Means, Methods, Etc.

ENGINEER will not be responsible for CONTRACTOR'S means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and ENGINEER will not be responsible for CONTRACTOR'S failure to perform or furnish the Work in accordance with the Contract Documents.

8.12.4 Acts of Omissions of CONTRACTOR

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

9. CHANGES IN THE WORK

9.1 OWNER May Order Change

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

9.2 Claims

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

9.3 Work Not in Contract Documents

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

9.4 Change Orders

OWNER and CONTRACTOR shall execute appropriate Change Orders covering:

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

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

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

9.5 Notice of Change

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

10. CHANGE OF CONTRACT PRICE

10.1 Total Compensation

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

10.2 Claim for Increase or Decrease in Price

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

10.3 Value of Work

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

10.3.1 Unit Prices

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

10.3.2 Lump Sum

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

10.3.3 Cost Plus Fee

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

10.4 Cost of the Work

The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project; shall include only the following items; and shall not include any of the costs itemized in paragraph 10.5:

10.4.1 Payroll Costs

Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' or workmen's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site.

The expenses of performing Work after regular working hours, on Saturday, Sunday or legal holidays, shall be included in the above to the extent authorized by OWNER.

10.4.2 Materials and Equipment Costs

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

10.4.3 Subcontractor Costs

Payments made by CONTRACTOR to the Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to CONTRACTOR and shall deliver such bids to OWNER who will then determine, with the advice of ENGINEER, which bids will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work Plus a Fee, the Subcontractor's Cost of the Work shall be determined in the same manner as CONTRACTOR'S Cost of the Work. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

10.4.4 Special Consultant Costs

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

10.4.5 Supplemental Costs

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

10.4.5.2 Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost less market value of

such items used but not consumed which remain the property of CONTRACTOR.

- 10.4.5.3 Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the costs of transportation, loading, unloading, installation, dismantling and removal shall be in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.
- 10.4.5.4 Sales, consumer, use or similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.
- 10.4.5.5 Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
- 10.4.5.6 Losses and damages (and related expenses), not compensated by insurance or otherwise, to the Work or otherwise sustained by CONTRACTOR in connection with the performance and furnishing of the Work (except losses and damages within the deductible amounts of property insurance established by OWNER), provided they have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR'S fee. If, however, any such loss or damage requires reconstruction and CONTRACTOR is placed in charge thereof, CONTRACTOR shall be paid a fee proportionate to that stated in paragraph 10.6.2 for services.
- 10.4.5.7 The cost of utilities, fuel and sanitary facilities at the site.

- 10.4.5.8 Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.
- 10.4.5.9 Cost of premiums for additional Bonds and insurance required because of changes in the Work and premiums for property insurance coverage within the limits of the deductible amounts established by OWNER.

10.5 Not to Be Included in Cost of the Work

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

10.5.1 Costs of Officers and Executives

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

10.5.2 Principal Office

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

10.5.3 Capital Expense

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

10.5.4 Bonds and Insurance

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

10.5.5 Costs Due to Negligence

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

10.5.6 Other Costs

Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 10.4. Liquidated damages incurred due to delays caused by utilities that have been improperly relocated or verified by the utility company not to be in the way of construction. Any such damages are not the responsibility of the owner but in fact the responsibility of the individual utility company.

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 therefor 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, except as listed in paragraph 10.5.6.

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 **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. 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; although, any reduction in retainage, below the ten (10) percent level, 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.

14.3 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 Non-Discrimination in Employment

The CONTRACTOR shall comply with the following requirements prohibiting discrimination:

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

15.1.2 That it is an unlawful practice for an employer:

15.1.2.1 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

15.1.2.2 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.

15.1.3 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.

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

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

15.2 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.

15.3 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.

15.4 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.

15.5 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.

PART V
SPECIAL CONDITIONS
INDEX

| | | |
|---|---|------|
| 1 | BLASTING..... | SC-2 |
| 2 | RISK MANAGEMENT PROVISIONS – INSURANCE AND INDEMNIFICATION | SC-3 |
| 3 | WAGE SCALE | SC-5 |

1. **BLASTING** – not applicable.
2. **RISK MANAGEMENT PROVISIONS INSURANCE AND INDEMNIFICATION**

INDEMNIFICATION AND HOLD HARMLESS PROVISION

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

FINANCIAL RESPONSIBILITY

BIDDER/CONTRACTOR understands and agrees that it shall demonstrate the ability to assure compliance with the above Indemnity provisions and these other risk management provisions prior to final acceptance of its bid and the commencement of any work or provision of goods.

INSURANCE REQUIREMENTS

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

Required Insurance Coverage

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

| <u>Coverage</u> | <u>Limits</u> |
|---|--|
| General Liability (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 - \$1 million |

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 Products and Completed Operations coverage and Premises and Operations coverage unless it is deemed not to apply by LFUCG.
- d. The General Liability Policy shall include Explosion-Collapse Underground (XCU) coverage or an endorsement unless it is deemed not to apply by LFUCG.
- e. The Policy shall include Umbrella/Excess Liability coverage in the amount of \$2 million per occurrence, \$2 million aggregate, 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

Safety and Loss Control

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

Verification of Coverage

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

Right to Review, Audit and Inspect

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

DEFAULT

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

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3. WAGE SCALES.

SPECIAL CONDITIONS

LABOR/EQUAL EMPLOYMENT OPPORTUNITY

INFORMATION PACKAGE

FOR

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT

JIM GRAY, MAYOR

LABOR/EEO CONDITIONS INDEX

PROJECT NAME: _____ BID NO. _____

| <u>ITEM DESCRIPTION</u> | <u>PAGE NO.</u> |
|---|-----------------|
| FEDERAL LABOR STANDARDS PROVISIONS..... | 3-12 |
| COMPLIANCE WITH EXECUTIVE ORDER 11246 | 13-14 |
| COMPLIANCE WITH THE DAVIS BACON ACT | 15-16 |
| AMENDMENT TO DAVIS-BACON ACT | 17 |
| COMPLIANCE WITH THE COPELAND ANTI-KICKBACK ACT | 18 |
| COMPLIANCE WITH THE CONTRACT WORK HOURS AND SAFETY STANDARD ACT | 18 |
| REPORTING REQUIREMENTS | 19 |
| PATENT RIGHT REQUIREMENTS..... | 20-29 |
| COPYRIGHT REQUIREMENTS..... | 30-32 |
| ACCESS TO RECORDS REQUIREMENTS | 33 |
| RECORD RETENTION REQUIREMENT | 33 |
| CONTRACT AWARD RESTRICTION TO FOREIGN COUNTRIES | 34-35 |
| KENTUCKY EQUAL EMPLOYMENT OPPORTUNITY ACT | 36-37 |
| EXECUTIVE ORDER 11246, 24CFR PART 130(A)..... | 38-39 |
| HOUSING & URBAN DEVELOPMENT OF 1968 SECTION 3 CLAUSE 24 CFR 135(B)..... | 40-41 |
| OTHER FEDERAL REQUIREMENTS | 42 |
| PUBLIC LAW 88-352: TITLE VI OF THE CIVIL RIGHTS ACT OF 1964 | 43 |
| COMPLIANCE WITH CLEAN AIR AND WATER ACTS | 44 |
| ENERGY EFFICIENCY REQUIREMENTS..... | 45 |
| EQUAL EMPLOYMENT OPPORTUNITY AFFIRMATIVE ACTION (TO BE COMPLETED AND/OR SIGNED)..... | 46 |
| DEBARMENT FORM (TO BE COMPLETED AND/OR SIGNED) | 47 |
| LEAD-BASED PAINT..... | 48 |
| POTENTIAL DBE CONTRACTOR (S) LIST..... | 49 |

FEDERAL LABOR STANDARDS PROVISIONS

CONTRACT PROVISIONS: A grantee's and subgrantee's contracts must contain provisions in paragraph (i) of this Section. Federal agencies are permitted to required changes, remedies, changed conditions, access and records retention, suspension of work, and other clauses approved by the Office of Procurement Policy.

APPLICABILITY

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Provisions are included in this Contract pursuant to the provisions applicable to such federal assistance.

- A. 1. (i) **Minimum Wages.** All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project) will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made apart hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or cost reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR Part 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times

by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. Housing and Urban Development (HUD) shall approve an additional classification and wage rate and fringe benefits, therefore, only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional

time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

- (iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- (iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. **Withholding.** HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor or subcontractor disburse such amounts withheld for and on account of the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) **Payrolls and Basic Records.** Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)
- (ii) (a) The contractor shall submit weekly for each week in which any contract work is performed, a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all the information required to be maintained under 29 CFR Part 5.5(a)(3)(i). This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)
- (b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the period contains the information required to be maintained under 29 CFR Part 5.5 (a)(3)(i) and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification or work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirements for submission of the "Statement of Compliance" required by paragraph A.3(ii)(b) of this section.

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph A.3.(i) of this section available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR Part 5.12.

4. (i) **Apprentices and Trainees. Apprentices.** Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his

or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) **Trainees.** Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines

that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) **Equal Employment Opportunity.** The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. **COMPLIANCE WITH COPELAND ACT REQUIREMENTS.** The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract.

6. **SUBCONTRACTS.** The contractor or subcontractor will insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as HUD or its designee may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR Part 5.5.

7. **CONTRACT TERMINATION; DEBARMENT.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. **COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REQUIREMENTS.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1,3, and 5 are herein incorporated by reference in this contract.

9. **DISPUTES CONCERNING LABOR STANDARDS.** Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5,6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

10. (i) **CERTIFICATION OF ELIGIBILITY.** By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C., 1001. Additionally, U.S. Criminal Code, Section 1010, title 18, U.S.C., "Federal Housing Administration transactions", provides in part "Whoever, for the purpose of . . . influencing in any way the action of such Administration. . . makes, utters or publishes any statement, knowing the same to be false . . . shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

11. **COMPLAINTS, PROCEEDINGS, OR TESTIMONY BY EMPLOYEES.** No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

B. **CONTRACT WORK HOURS AND SAFETY STANDARDS ACT.** As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

1. **Overtime Requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek, in which he or she is employed on such work, to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate of less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. **Violation; Liability for Unpaid Wages, Liquidated Damages.** In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in

violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

3. **Withholding for Unpaid Wages and Liquidated Damages.** HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

4. **Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. **HEALTH AND SAFETY**

- (1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.
- (2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 (formerly Part 1518) and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54, 83 Stat. 96).
- (3) The Contractor shall include the provisions of this Article in every subcontract so that such provisions will be binding on each subcontractor. The Contractor shall take such action with respect to any subcontract as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

COMPLIANCE WITH EXECUTIVE ORDER 11246

Compliance with Executive Order 11246 of September 24, 1965, entitled "Equal Employment Opportunity" as amended by Executive Order 11375 of October 13, 1967, and as supplemented in Department of Labor regulations (41 CFR Part 60).

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, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and the employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not limited to, the following: Employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.

2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

3. The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided by the Contract Compliance Officer advising the said labor union or worker's representative of the Contractor's commitment under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

4. The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

5. The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the Department and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

6. In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contract procedures authorized in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

7. The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 25, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such actions with respect to any subcontract or purchase order as the Department may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided however, that in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Department, the Contractor may request the United States to enter into such litigation to protect the interest of the United States.

COMPLIANCE WITH THE DAVIS BACON ACT

Compliance with the Davis-Bacon Act (40 U.S.C. 276a to a-7) as supplemented by the Department of Labor regulations (29 CFR Part 5). (Construction contracts in excess of \$2,000 awarded by grantees and subgrantees when required by Federal grant program legislation.)

An Act

To amend the Act approved March 3, 1931, relating to the rate of wages for laborers and mechanics employed by contractors and subcontractors on public buildings.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Act entitled "An Act relating to the rate of wages for laborers and mechanics employed on public buildings of the United States and the District of Columbia by contractors or subcontractors, and for other purposes", approved March 3, 1931, is amended to read as follows:

"That the advertised specifications for every contract in excess of \$2,000, to which the United States or the District of Columbia is a party, for construction, alteration, and/or repair, including painting and decorating, of public buildings or public works of the United States or the District of Columbia within the geographical limits of the States of the Union or the District of Columbia, and which requires or involves the employment of mechanics and/or laborers shall contain a provision stating the minimum wages to be paid various classes of laborers and mechanics which shall be based upon the wages that will be determined by the Secretary of Labor to be prevailing for the corresponding classes of laborers and mechanics employed on projects of a character similar to the contract work in the city, town, village, or other civil subdivision of the State in which the work is to be performed, or in the District of Columbia if the work is to be performed there; and every contract based upon these specifications shall contain a stipulation that the contractor or his subcontractor shall pay all mechanics and laborers employed directly upon the site of the work, unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account, the full amounts accrued at time of payment, computed at wage rates not less than those stated in the advertised specifications, regardless of any contractual relationship which may be alleged to exist between the contractor or subcontractor and such laborers and mechanics, and that the scale of wages to be paid shall be posted by the contractor in a prominent and easily accessible place at the site of the work; and the further stipulation that there may be withheld from the contractor so much of accrued payments as may be considered necessary by the contracting officer to pay to laborers and mechanics employed by the contractor or any subcontractor on the work the difference between the rates of the wages required by the contract to be paid laborers and mechanics on the work and the rates of wages received by such laborers and mechanics and not refunded to the contractor, subcontractors, or their agents.

"Sec. 2. Every contract within the scope of this Act shall contain the further provision that in the event it is found by the contracting officer that any laborer or mechanic employed by the contractor or any subcontractor directly on the site of the work covered by the contract has been or

is being paid a rate of wages less than the rate of wages required by the contract to be paid as aforesaid, the Government may, by written notice to the contractor, terminate his right to proceed with the work or such part of the work as to which there has been a failure to pay said required wages and to prosecute the work to completion by contract or otherwise, and the contractor and his sureties shall be liable to the Government for any excess costs occasioned by the Government thereby.

"Sec. 3. (a) The Comptroller General of the United States is hereby authorized and directed to pay directly to laborers and mechanics from any accrued payments withheld under the terms of the contract any wages found to be due laborers and mechanics pursuant to this Act; and the Comptroller General of the United States is further authorized and is directed to distribute a list to all departments of the Government giving the names of persons or firms whom he has found to have disregarded their obligations to employees or subcontractors. No contract shall be awarded to the persons or firms appearing on this list or to any firm, corporation, partnership, or association in which such persons or firms have an interest until three years have elapsed from the date of publication of the list containing the names of such persons or firms.

"(b) If the accrued payments withheld under the terms of the contract, as aforesaid, are insufficient to reimburse all the laborers and mechanics with respect to whom there has been a failure to pay the wages required pursuant to this Act, such laborers and mechanics shall have the right of a action and/or intervention against the contractor and his sureties conferred by law upon persons furnishing labor or materials, and in such proceedings it shall be no defense that such laborers and mechanics accepted or agreed to accept less than the required rate of wages or voluntarily made refunds.

"Sec. 4. This Act shall not be construed to supersede or impair any authority otherwise granted by Federal law to provide for the establishment of specific wage rates.

"Sec. 5. This Act shall take effect thirty days after its passage, but shall not affect any contract then existing or any contract that may thereafter be entered into pursuant to invitations for bids that are outstanding at the time of the passage of this Act.

"Sec. 6. In the event of a national emergency the President is authorized to suspend the provisions of this Act.

"Sec. 7. The funds appropriated and made available by the Emergency Relief Appropriation Act of 1935 (Public Resolution Numbered 11, 74th Congress), are hereby made available for the fiscal year ending June 30, 1936, to the Department of Labor for expenses of the administration of this Act."

Approved, August 30, 1935.

Amendment

[Public--No. 633--76th Congress]

[Chapter 373--3d Session]

[S.3650]

AN ACT

To require the payment of prevailing rates of wages on Federal public works in Alaska and Hawaii.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That Section 1 of the Act entitled "An Act related to the rate of wages for laborers and mechanics employed on public buildings of the United States and the District of Columbia by contractors or subcontractors, and for other purposes," approved March 3, 1931, (46 Stat. 1494), as amended, is further amended by striking out the words "States of the Union or the District of Columbia" and inserting in lieu thereof "States of the Union, the Territory of Alaska, the Territory of Hawaii, or the District of Columbia"; and by striking out the words "or other civil subdivision of the State" and inserting in lieu thereof "or other civil subdivision of the State, or the Territory of Alaska or the Territory of Hawaii".

Sec. 2. The amendments made by this Act shall take effect on the thirtieth day after the date of enactment of this Act, but shall not affect any contract in existence on such effective date or made thereafter pursuant to invitations for bids outstanding on the date of enactment of this Act.

Approved, June 15, 1940

[40 U.S.Code, sec. 276a-7]

The fact that any contract authorized by any Act is entered into without regard to section 5 of Title 41, or upon a cost-plus-a-fixed-fee basis or otherwise without advertising for proposals, shall not be construed to render inapplicable the provisions of sections 276a to 276a-5 of this title, if such Act would otherwise be applicable to such contract. March 23, 1941, 12 noon, ch. 26, 55 Stat. 53; Aug. 21, 1941, ch. 395, 55 Stat. 658.

COMPLIANCE WITH THE COPELAND ANTI-KICKBACK ACT

Compliance with the Copeland "Anti-Kickback" Act (18 U.S.C. 874) as supplemented in Department of Labor regulations (29 CFR Part 3). (All contracts and subgrants for construction or repair.)

ANTI-KICKBACK ACT

Contractors and all subcontractors shall comply with the provisions of the Copeland "Anti-Kickback Act" 18 US Code 874 as supplemented in 29 CFR Part 3, and are prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public works, to give up any part of the compensation to which he is otherwise entitled.

COMPLIANCE WITH THE CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Compliance with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330) as supplemented by Department of Labor regulations (29 CFR Part 5). (Construction contracts awarded by grantees and subgrantees in excess of \$2,000, and in excess of \$2,500 for other contracts which involve the employment of mechanics or laborers.)

CONTRACT WORK HOURS AND SAFETY STANDARD ACT PROVISIONS

The Contractor, if the contract is in excess of \$2,000, and any of his subcontractors, shall comply with Section 102 and 107 of the Contract Work Hours and Safety Standards Act (40 USC 327-330) as supplemented by Department of Labor Regulations contained in 29 CFR Part 5.

Under Section 103 of the Act, the Contractors and any of his subcontractors, shall be required to compute the wages of every mechanic and laborer on the basis of a standard work week of forty (40) hours. Work in excess of the standard work week is permissible, provided the worker is compensated at a rate not less than one and one-half (1-1/2) times the basic rate of pay for all hours worked in excess of forty (40) hours in any work week. Section 5 of the Federal Labor Standards Provision, HUD Form Exhibit 14, dated 9/75, sets forth in detail the Section 103 requirements.

Section 107 of the Act provides that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety, as determined under construction, safe and health standards promulgated by the Secretary of Labor. These requirements do not apply to the purchase of supplies or materials or articles ordinarily available on the open market.

REPORTING REQUIREMENTS

Notice of awarding agency requirements and regulations pertaining to reporting.

A. Preconstruction Conference

Before Contractor starts the work at the proposed site, a conference attended by the Contractor, Engineer, EEO-Affirmative Action Officer, 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 10% minimum DBE goals.

B. Documents Required of Contractor

A sworn statement signed by the President or Owner of the Contractor 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.

C. Optional Owner Requirements

The Owner, at its discretion, may require the Contractor to provide: (1) financial security in amounts and kind deemed necessary by the Owner or require other financial security to meet the financial responsibility requirements of the Contractor to indemnify the Owner; (2) Additional information and/or DBE work data, as well as DBE participation data.

PATENT RIGHT REQUIREMENTS

Notice of awarding agency requirements and regulations pertaining to patent rights with respect to any discovery or invention which arises or is developed in the course of or under such contract.

§ 401.14 STANDARD PATENT RIGHTS CLAUSES

The following is the standard patent rights clause to be used as specified in §401.3(a).

Patent Rights (Small Business Firms and Nonprofit Organizations)

A. Definitions

1. "Invention" means any invention or discovery which is or may be patentable or otherwise protectable under Title 35 of the United States Code, or any novel variety of plant which is or may be protected under the Plant Variety Protection Act (7 U.S.C. 2321 et seq.).
2. "Subject invention" means any invention of the **contractor** conceived or first actually reduced to practice in the performance of work under this **contract**, provided that in the case of a variety of plant, the date of determination (as defined in section 41(d) of the Plant Variety Protection Act, 7 U.S.C. 2401(d) must also occur during the period of **contract** performance.
3. "Practical Application" means to manufacture in the case of a composition or product, to practice in the case of a process or method, or to operate in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is being utilized and that its benefits are, to the extent permitted by law or government regulations, available to the public on reasonable terms.
4. "Made" when used in relation to any invention means the conception or first actual reduction to practice such invention.
5. "Small Business Firm" means a small business concern as defined at section 2 of Pub. L. 85-536 (15 U.S.C. 632) and implementing regulations of the Administrator of the Small Business Administration. For the purpose of this clause, the size standards for small business concerns involved in government procurement and subcontracting at 13 CFR 121.3-8 and 13 CFR 121.3-12, respectively, will be used.
6. "Nonprofit Organization" means a university or other institution of higher education or an organization of the type described in section 501(c)(3) of the Internal Revenue Code of 1954 (26 U.S.C. 501(c) and exempt from taxation under section 501(a) of

the Internal Revenue Code (25 U.S.C 501 (a)) or any nonprofit scientific or educational organization qualified under a state nonprofit organization statute.

B. Allocation of Principal Rights

1. The **Contractor** may retain the entire right, title, and interest throughout the world to each subject invention, subject to the provisions of this clause and 35 U.S.C. 203. With respect to any subject invention in which the **Contractor** retains title, the Federal Government shall have a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States the subject invention throughout the world.

C. Invention Disclosure, Election of Title and Filing of Patent Application by Contractor.

1. The **Contractor** will disclose each subject invention to the Federal Agency within two months after the inventor discloses it in writing to **contractor** personnel responsible for patent matters. The disclosure to the agency shall be in the form of a written report and shall identify the contract under which the invention was made and the inventor(s). It shall be sufficiently complete in technical detail to convey a clear understanding to the extent known at the time of the disclosure, of the nature, purpose, operation, and the physical, chemical, biological or electrical characteristics of the invention. The disclosure shall also identify any publication, on sale or public use of the invention and whether a manuscript describing the invention has been submitted for publication and, if so, whether it has been accepted for publication at the time of disclosure. In addition, after disclosure to the agency the Contractor will promptly notify the agency of the acceptance of any manuscript describing the invention for publication or of any on sale or public use planned by the contractor.
2. The Contractor will elect in writing whether or not to retain title to any such invention by notifying the Federal agency within two years of disclosure to the Federal agency. However, in any case where publication, on sale or public use has initiated the one-year statutory period wherein valid patent protection can still be obtained in the United States, the period for election of title may be shortened by the agency to a date that is no more than 60 days prior to the end of the statutory period.
3. The Contractor will file its initial patent application on a subject invention to which it elects to retain title within one year after election of title or, if earlier, prior to the end of any statutory period wherein valid patent protection can be obtained in the United States after a publication, on sale, or public use. The Contractor will file patent applications in additional countries or international patent offices within either ten months of the corresponding initial patent application or six months from the date permission is granted by the Commissioner of Patents and Trademarks to file foreign patent applications where such filing has been prohibited by a Secrecy Order.

4. Requests for extension of the time for disclosure, election, and filing under subparagraphs (1), (2), and (3) may, at the discretion of the agency, be granted.

D. Conditions When the Government May Obtain Title

The Contractor will convey to the Federal agency, upon written request, title to any subject invention--

1. If the contractor fails to disclose or elect title to the subject invention within the times specified in (C), above, or elects not to retain title; provided that the agency may only request title within 60 days after learning of the failure of the contractor to disclose or elect within the specified times.
2. In those countries in which the contractor fails to file patent applications within the times specified in (C) above; provided, however, that if the contractor has filed a patent application in a country after the times specified in (C) above, but prior to its receipt of the written request of the Federal agency, the contractor shall continue to retain title in that country.
3. In any country in which the contractor decides not to continue the prosecution of any application for, to pay the maintenance fees on, or defend in reexamination or opposition proceeding on, a patent on a subject invention.

E. Minimum Rights to Contractor and Protection of the Contractor Right to File

1. The contractor will retain a nonexclusive royalty-free license throughout the world in each subject invention to which the Government obtains title, except if the contractor fails to disclose the invention within the times specified in (C), above. The contractor's license extends to its domestic subsidiary and affiliates, if any, within the corporate structure of which the contractor is a party and includes the right to grant sublicenses of the same scope to the extent the contractor was legally obligated to do so at the time the contract was awarded. The license is transferable only with the approval of the Federal agency except when transferred to the successor of that party of the contractor's business to which the invention pertains.
2. The contractor's domestic license may be revoked or modified by the funding Federal agency to the extent necessary to achieve expeditious practical application of the subject invention pursuant to an application for an exclusive license submitted in accordance with applicable provisions at 37 CFR Part 404 and agency licensing regulations (if any). This license will not be revoked in that field of use or the geographical areas in which the contractor has achieved practical application and continues to make the benefits of the invention reasonably accessible to the public. The license in any foreign country may be revoked or modified at the discretion of the funding Federal agency to the extent the contractor, its licensees, or the domestic

subsidiaries or affiliates have failed to achieve practical application in that foreign country.

3. Before revocation or modification of the license, the funding Federal agency will furnish the contractor a written notice of its intention to revoke or modify the license, and the contractor will be allowed thirty days (or such other time as may be authorized by the funding Federal agency for good cause shown by the contractor) after the notice to show cause why the license should not be revoked or modified. The contractor has the right to appeal, in accordance with applicable regulations in 37 CFR Part 404 and agency regulations (if any) concerning the licensing of Government-owned inventions, any decision concerning the revocation or modification of the license.

F. Contractor Action to Protect the Government's Interest'

1. The contractor agrees to execute or to have executed and promptly deliver to the Federal agency all instruments necessary to (i) establish or confirm the rights the Government has throughout the world in those subject inventions to which the contractor elects to retain title, and (ii) convey title to the Federal agency when requested under paragraph (D) above and to enable the government to obtain patent protection throughout the world in that subject invention.
2. The contractor agrees to require, by written agreement, its employees, other than clerical and nontechnical employees, to disclose promptly in writing to personnel identified as responsible for the administration of patent matters and in a format suggested by the contractor each subject invention made under contract in order that the contractor can comply with the disclosure provisions of paragraph (C), above, and to execute all papers necessary to file patent applications on subject inventions and to establish the government's rights in the subject inventions. This disclosure format should require, as a minimum, the information required by (C)(1), above. The contractor shall instruct such employees through employee agreements or other suitable educational programs on the importance of reporting inventions in sufficient time to permit the filing of patent applications prior to U.S. or foreign statutory bars.
3. The contractor will notify the Federal agency of any decisions not to continue the prosecution of a patent application, pay maintenance fees, or defend in a reexamination or opposition proceeding on a patent, in any country, not less than thirty days before the expiration of the response period required by the relevant patent office.
4. The contractor agrees to include, within the specification of any United States patent applications and any patent issuing thereon covering a subject invention, the following statement, "This invention was made with government support under

(identify the contract) awarded by (identify the Federal agency). The government has certain rights in the invention."

G. Subcontracts

1. The contractor will include this clause, suitably modified to identify the parties, in all subcontracts, regardless of tier for experimental, developmental or research work to be performed by a small business firm or domestic nonprofit organization. The subcontractor will retain all rights provided for the contractor in this clause, and the contractor will not, as part of the consideration for awarding the subcontractor, obtain rights in the subcontractor's subject inventions.
2. The contractor will include in all other subcontracts, regardless of tier, for experimental developmental or research work the patent rights clause required by (cite section of agency implementing regulations or FAR).
3. In the case of subcontracts, at any tier, when the prime award with the Federal agency was a contract (but not a grant or cooperative agreement), the agency, subcontractor, and the contractor agree that the mutual obligations of the parties created by this clause constitute a contract between the subcontractor and the Federal agency with respect to the matters covered by the clause; provided, however, that nothing in this paragraph is intended to confer any jurisdiction under the Contract Disputes Act in connection with proceedings under paragraph (J) of this clause.

H. Reporting Utilization of Subject Inventions

1. The Contractor agrees to submit on request periodic reports no more frequently than annually on the utilization of a subject invention or on efforts at obtaining such utilization that are being made by the contractor or its licensees or assignees. Such reports shall include information regarding the status of development, date of first commercial sale or use, gross royalties received by the contractor, and such other data and information as the agency may reasonably specify. The contractor also agrees to provide additional reports as may be requested by the agency in connection with any march-in proceeding undertaken by the agency in accordance with paragraph (J) of this clause. As required by 35 U.S.C. 202 (C)(5), the agency agrees it will not disclose such information to persons outside the government without permission of the contractor.

I. Preference for United States Industry

Notwithstanding any other provision of this clause, the contractor agrees that neither it nor any assignee will grant to any person the exclusive right to use or sell any subject inventions in the United States unless such person agrees that any products embodying the subject invention or produced through the use of the subject invention will be manufactured

substantially in the United States. However, in individual cases, the requirement for such an agreement may be waived by the Federal agency upon a showing by the contractor or its assignee that reasonable but unsuccessful efforts have been made to grant licenses that would be likely to manufacture substantially in the United States or that under the circumstances domestic manufacture is not commercially feasible.

J. March-in Rights

The contractor agrees that with respect to any subject invention in which it has acquired title, the Federal agency has the right in accordance with the procedures in 37 CFR 401.6 and any supplemental regulations of the agency to require the contractor, an assignee or exclusive licensee of a subject invention to grant a nonexclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant or applicants, upon terms that are reasonable under the circumstances, and if the contractor, assignee, or exclusive licensee refuses such a request the Federal agency has the right to grant such a license itself if the Federal agency determines that:

1. Such action is necessary because the contractor or assignee has not taken, or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use.
2. Such action is necessary to alleviate health or safety needs which are not reasonably satisfied by the contractor, assignee or their licensees:
3. Such action is necessary to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by the contractor, assignee or licensees; or
4. Such action is necessary because the agreement required by paragraph (I) of this clause has not been obtained or waived or because a licensee of the exclusive right to use or sell any subject invention in the United States is in breach of such agreement.

K. Special Provisions for Contracts with Nonprofit Organizations

If the Contractor is a nonprofit organization, it agrees that:

1. Rights to a subject invention in the United States may not be assigned without the approval of the Federal agency, except where such assignment is made to an organization which has as one of its primary functions the management of inventions, provided that such assignee will be subject to the same provisions as the contractor.
2. The contractor will share royalties collected on a subject invention with the inventor, including Federal employee co-inventors (when the agency deems it appropriate)

when the subject invention is assigned in accordance with 35 U.S.C. 202(e) and 37 CFR 401.10;

3. The balance of any royalties or income earned by the contractor with respect to subject inventions, after payment of expenses (including payments to inventors) incidental to the administration of subject inventions, will be utilized for the support of scientific research or education; and
4. It will make efforts that are reasonable under the circumstances to attract licensees of subject invention that are small business firms and that it will give a preference to a small business firm when licensing a subject invention if the contractor determines that the small business firm has a plan or proposal for marketing the invention which, if executed, is equally as likely to bring the invention to practical application as any plans or proposals from applicants that are not small business firms; provided, that the contractor is also satisfied that the small business firm has the capability and resources to carry out its plan or proposal. The decision whether to give a preference in any specific case will be at the discretion of the contractor. However, the contractor agrees that the Secretary may review the contractor's licensing program and decisions regarding small business applicants, and the contractor will negotiate changes to its licensing policies, procedures, or practices with the Secretary when the Secretary's review discloses that the contractor could take reasonable steps to implement more effectively the requires of this paragraph (K)(4).

1. Communication

(Complete According to Instruction at 401.5(b))

(b) When the Department of Energy (DOE) determines to use alternative provisions under § 401.3(a)(4), the standard clause at § 401.14(a), above, shall be used with the following modifications unless a substitute clause is drafted by DOE:

- (1) The title of the clause shall be changed to read as follows: Patent Rights to Nonprofit DOE Facility Operators
- (2) Add an "(A)" after "(1)" in paragraph (c)(1) and add subparagraphs (B) and (C) to paragraph (c)(1) as follows:
 - (B) If the subject invention occurred under activities funded by the naval nuclear propulsion or weapons related programs of DOE, then the provisions of this subparagraph (c)(1)(B) will apply in lieu of paragraphs (c)(2) and (3). In such cases the contractor agrees to assign the government the entire right, title, and interest thereto throughout the world in and to the subject invention except to the extent that rights are retained by the contractor through a greater

rights determination or under paragraph (e), below. The contractor, or an employee-inventor, with authorization of the contractor, may submit a request for greater rights at the time the invention is disclosed or within a reasonable time thereafter. DOE will process such a request in accordance with procedures at 37 CFR 401.15. Each determination of greater rights will be subject to paragraphs (h)-(k) of this clause and such additional conditions, if any, deemed to be appropriate by the Department of Energy.

- (C) At the time an invention is disclosed in accordance with (c)(1)(A) above, or within 90 days thereafter, the contractor will submit a written statement as to whether or not the invention occurred under a naval nuclear propulsion or weapons-related program of the Department of Energy. If this statement is not filed within this time, subparagraph (c)(1)(B) will apply in lieu of paragraphs (c)(2) and (3). The contractor statement will be deemed conclusive unless, within 60 days thereafter, the Contracting Officer disagrees in writing, in which case the determination of the Contracting Officer will be deemed conclusive unless the contractor files a claim under the Contract Disputes Act within 60 days after the Contracting Officer's determination. Pending resolution of the matter, the invention will be subject to subparagraph (c)(1)(B).
- 3. Paragraph (k)(3) of the clause will be modified as prescribed at § 401.5(g).

§ 401.15 Deferred Determinations

- (a) This section applies to requests for greater rights in subject inventions made by contractors when deferred determination provisions were included in the funding agreement because one of the exceptions at § 401.3(a) was applied, except that the Department of Energy is authorized to process deferred determinations either in accordance with its waiver regulations or this section. A contractor requesting greater rights should include with its request information on its plans and intentions to bring the invention to practical application. Within 90 days after receiving a request and supporting information, or sooner if a statutory bar to patenting is imminent, the agency should seek to make a determination. In any event, if a bar to patenting is imminent, unless the agency plans to file on its own, it shall authorize the contractor to file a patent application pending a determination by the agency. Such a filing shall normally be at the contractor's own risk and expense. However, if the agency subsequently refuses to allow the contractor to retain title and elects to proceed with the patent application

under government ownership, it shall reimburse the contractor for the cost of preparing and filing the patent application.

- (b) If the circumstances of concerns which originally led the agency to invoke an exception under § 401.3(a) are not applicable to the actual subject invention or are no longer valid because of subsequent events, the agency should allow the contractor to retain title to the invention on the same conditions as would have applied if the standard clause at § 401.14(a) had been used originally, unless it has been licensed.
- (c) If paragraph (b) is not applicable, the agency shall make its determination based on an assessment whether its own plans regarding the invention will better promote the policies and objectives of 35 U.S.C. 200 than will contractor ownership of the invention. Moreover, if the agency is concerned only about specific uses or applications of the invention, it shall consider leaving title in the contractor with additional conditions imposed upon the contractor's use of the invention for such applications or with expanded government license rights in such applications.
- (d) A determination not to allow the contractor to retain title to a subject invention or to restrict or condition its title with conditions differing from those in the clause at § 401.14(a), unless made by the head of the agency, shall be appealable by the contractor to an agency official at a level above the person who made the determination. This appeal shall be subject to the procedures applicable to appeals under § 401.11 of this part.

§ 401.16 Submissions and Inquiries

All submissions or inquiries should be directed to Federal Technology Management Policy Division, telephone number 202-377-0659, Room H4837, U.S. Department of Commerce, Washington, DC 20230

(FR Doc. 87-5618 Filed 3-17-87: 8:45 am)

COPYRIGHT REQUIREMENTS

Awarding agency requirements and regulations pertaining to copyrights and rights in data.

COPYRIGHTS

Federally supported grant research projects frequently result in the production of books, brochures, manuals, articles, films, or other written materials. In most instances they are technical reports which serve to disseminate the results of a project to the public and to the scientific community or other researchers. Often, however, these documents are publishable and occasionally they have significant commercial value. Who controls the rights to these materials? What rights does the Government retain? What are the grantee's responsibilities in handling the materials?

There is a widely held notion that written materials produced with the support of public money are automatically in the public domain. That view is erroneous, and in fact no member of the public has an inherent right to use grant-produced materials merely because they were prepared under Government assistance. Because of the confusion, however, it is important for grantees to note a few features of the copyright law which relate to the subject of the grants.

In general, researchers have exclusive rights in any original works of their authorship. Under the most recent amendment to the copyright law, statutory copyright protection extends to both published and unpublished works of the author. Researchers are cautioned to observe the publication policies of their institutions or organizations in this regard, and unless there is an express agreement to the contrary, their employing institution may be considered the author of any materials prepared in the course of their employment, under the "works for hire" doctrine.

Under the most recent amendments to the copyright law, it is clear that grant reports are not considered works of the Government which are in the public domain. The legislative history of the law shows that Congress expressly left it to the discretion of the individual grant-making agencies to determine whether written materials produced by their grantees should be placed in the public domain, and it expected the questions to be resolved by the terms and conditions of grants. The House Report No. 94-1476, September 3, 1976, stated on page 59:

A more difficult and far-reaching problem is whether the definition should be broadened to prohibit copyright in works prepared under U.S. Government contract or grant. As the bill is written, the Government agency concerned could determine in each case whether to allow an independent contractor or grantee to secure copyright in works prepared in whole or in part with the use of Government funds. The argument that has been made against allowing copyright in this situation is that the public should not be required to pay a "double subsidy," and that it is inconsistent to prohibit copyright in works by Government employees while permitting private copyrights in a growing body of works created by persons who are paid with Government funds. Those arguing in favor of potential copyright protection have stressed the

importance of copyright as an incentive to creation and dissemination in this situation, and the basically different policy considerations, applicable to works written by Government employees and those applicable to works prepared by private organizations with the use of Federal funds.

The bill deliberately avoids making any sort of outright, unqualified prohibition against copyright in works prepared under Government contract or grant. There may be cases where it would be in the public interest to deny copyright in the writings generated by Government research contracts and the like; it can be assumed that, where a Government agency commissions a work for its own use merely as an alternative to having one of its own employees prepare the work, the right to secure a private copyright would be withheld. However, there are almost certainly many other cases where the denial of copyright protection would be unfair or would hamper the production and publication of important works. Where, under the particular circumstances, Congress or the agency involved finds the need to have a work freely available outweighs the need of the private author to secure copyright, the problem can be dealt with by specific legislation, agency regulations, or contractual restrictions.

Agency Policy

Government-wide policies contained in Office of Management and Budget Circulars A-102 and A-110 speak to the issue of copyrightable materials through their respective Attachments N. Circular A-110 states:

8b. Copyrights. - Except as otherwise provided in the terms and conditions of the agreement, the author or the recipient organization is free to copyright any books, publications, or other copyrightable materials developed in the course of or under a Federal agreement, but the Federal sponsoring agency shall reserve a royalty-free, nonexclusive and irrevocable right to reproduce, publish, or otherwise use, and to authorize others to use, the work for Government purposes.

Except for minor, nonsubstantive differences, the provisions of A-102 are identical. Each permits the grantee to copyright published materials, subject to a license for the U.S. Government to use the materials for Government purposes. Each also gives the grantor agency discretion in altering that condition, by establishing different terms and conditions in its grants.

Suggested steps for grantees

A grantee whose grant-financed activity may involve the need for potential need for copyrighting of materials should:

- Check the terms and conditions of the grant to determine whether a copyright can be asserted in unpublished as well as published materials. This may vary from grantor agency to grantor agency and from grant to grant.
- It is the grantee's obligation to take the necessary steps to preserve the Government's license when conveying rights to publishers. If the publisher provides a release form that does not contain a reference to Government use of the materials, appropriate language should be inserted that preserves the Government's rights. If necessary, the granting agency should be consulted to assure compliance with the terms of the grant.
- Under most Federal grants, proper acknowledgment of the source of funds used to write a published work will be required. For example, the National Science Foundation **Grant General Conditions** require the following acknowledgment of support and disclaimer statement in any publication of material, whether copyrighted or not: "This material is based upon work supported by the National Science Foundation under Grant No._____." Except for scientific articles and papers appearing in scientific journals, all materials must also contain the following disclaimer:

Any opinions, findings and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

- When negotiating a publication agreement, the grantee must include in the publishing contract the reservation of Government license and the acknowledgment and disclaimer statements.
- Grants often are made with the stipulation that any substantive technical reports will be made available to the public through the U.S. Department of Commerce, National Technical Information Service (NTIS). Again, the grantee is well advised to check the terms and conditions of its grant agreement to see if such requirements exist and, if so, to account for them in dealing with potential publishers.
- Provide copies of copyrighted work to the granting agency.
- Some agencies may require prior approval of any proposed commercial publication, including approval of the selection process by which a publisher is obtained. The National Science Foundation, for example, requires documentation showing that a reasonable number of qualified publishers were given an opportunity to compete for the materials. Also, the selection criteria are subject to examination, as well as the final publishing contract.

With respect to any discovery or invention which arises or is developed in the course of or under this contract, Lexington-Fayette Urban County Government shall have the right to require the contractor, an assignee or exclusive licensee of a subject invention to grant a non-exclusive, partially exclusive, or exclusive license in any field of use to Lexington-Fayette Urban County Government

With respect to any copyrights and rights in data, Lexington-Fayette Urban County Government shall have the right to retain all copyrights and rights in data.

ACCESS TO RECORDS REQUIREMENTS

Access by the grantee, the subgrantee, the Federal grantor agency, the Comptroller General of the United States, or any of their duly authorized representatives to any books, documents, papers, and records of the contractor which are directly pertinent to that specific contract for the purpose of making audit, examination, excerpts, and transcriptions.

ACCESS TO RECORDS

The Contractor agrees that the Lexington-Fayette Urban County Government, the Secretary of Housing and Urban Development, the Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any and all books, documents, papers, and records of the Contractor which are directly pertinent to this specific project for the purposes of making an audit, examination, excerpts, and transcriptions.

RECORDS RETENTION REQUIREMENTS

Retention of all required records for three years after contractors or subcontractors make final payments and all other pending matters are closed.

CONTRACT AWARD RESTRICTION TO FOREIGN COUNTRIES

The recipient, Lexington-Fayette Urban County Government agrees to fully comply with applicable terms and conditions in Section 109 of Pub. L. 100-102 as set forth below:

RESTRICTIONS ON PUBLIC BUILDINGS AND PUBLIC WORKS PROJECTS

(A) Definitions. "Component" as used in this clause means those articles, materials, and supplies incorporated directly into the product.

"Contractor or subcontractor of a foreign country," as used in this clause, means any Contractor or Subcontractor that is a citizen or national of a foreign country or is controlled directly or indirectly by citizens or nationals of a foreign country. A contractor or subcontractor shall be considered to be a citizen or national of a foreign country or controlled directly or indirectly by citizens or nationals of a foreign country.

- (1) If 50 percent or more of the Contractor or Subcontractor is owned by a citizen or a national of the foreign country;
- (2) If the title of to 50 percent or more of the stock of the Contractor or Subcontractor is held subject to trust or fiduciary obligation in favor of citizens or nationals of the foreign country;
- (3) If 50 percent or more of the voting power in the Contractor-Subcontractor is vested in or exercisable on behalf of a citizen or national of the foreign country;
- (4) In the case of a partnership, if any general partner is a citizen of the foreign country;
- (5) In the case of a corporation, if its president or other chief executive officer or the chairman of its board of directors is a citizen of the foreign country or the majority of any number of its directors necessary to constitute a quorum are citizens of the foreign country or the corporation is organized under the laws of the foreign country or any subdivision, territory, or possession thereof; or
- (6) In the case of a Contractor or Subcontractor who is a joint venture, if any participant firm is a citizen or national of a foreign country or meets any of the criteria in subparagraphs (a)(1) through (5) of this clause.

"Product", as used in this clause, means construction materials-i.e., articles, materials, and supplies brought to the construction site for incorporation into the public works project, including permanently affixed equipment, instruments, utilities, electronic or other devices, but not including vehicles or construction equipment. In determining the origin of a product Lexington-Fayette Urban County Government will consider a product as produced in a foreign country if it has been assembled or manufactured in the foreign country, or if the

cost of the components mined, produced, or manufactured in the foreign country exceed 50 percent of the cost of all its components.

- (b) Restrictions. The Contractor shall not (1) knowingly enter into any subcontract under this contract with a Subcontractor of a foreign country on the list of countries that discriminate against U.S. firms published by the United States Trade Representative (see paragraph (c) of this clause, or (2) supply any product under this contract of a country included on the list of foreign countries that discriminate against U.S. firms published by the USTR.
- (c) USTR list. The USTR published an initial list in the Federal Register on December 30, 1987 (53 FR 49244), which identified one country - Japan. The USTR can add other countries to the list or remove countries from it in accordance with Section 109 (c) of Pub. L 100-202.
- (d) Certification. The Contractor may rely upon the certification of a prospective Subcontractor that it is not a Subcontractor of a foreign country included on the list of countries that discriminate against U.S. firms published by the USTR and that products supplied by such Subcontractor for use on the Federal public works project under this contract are not products of a foreign country included on the list of foreign countries that discriminate against U.S. firms published by the USTR, unless such Contractor has knowledge that the certification is erroneous.
- (e) Subcontracts. The Contractor shall incorporate this clause, modified only for the purpose of properly identifying the parties in all subcontracts. This paragraph (e) shall also be incorporated in all subcontracts.

(End of Contract Clause)

Bids/proposals from such firms/suppliers shall be deemed nonresponsive and rejected.

Questions related to this issue should be directed to Division of Community Development, Lexington-Fayette Urban County Government, 200 E. Main Street 6th Floor, Lexington, Kentucky 40507.

KENTUCKY EQUAL EMPLOYMENT OPPORTUNITY ACT

The Kentucky Equal Employment Opportunity Act of 1978 (KRS 45.570-45.640) requires that any county, 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 contractor that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, age, or national origin;
3. The contractor will post notices in conspicuous places, available to employees and applicants for employment, setting forth the provisions of the nondiscrimination 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 worker's representative of the contractor's commitments under the non discrimination 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 timetables.
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 KRS 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 certifications 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 to 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 subcontractor 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 the 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.

EXECUTIVE ORDER 11246 (24 CFR PART 130 A)

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, creed, color, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated, during employment without regard to their race, creed, color, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous place, available to employees and applicants for employment, notices to be provided setting forth the provisions of this non-discrimination clause.

2. The contractor will, in all solicitations or advertisements for employees placed on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin.

3. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract of understanding, a notice to be provided advising the said labor union or worker's representative of the contractor's commitments under this section, and shall post copies of the notice in conspicuous place available to employees and applicants for employment. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance.

In case the work to be performed is paid for in whole or in part with funds obtained from the Federal Government or borrowed on the credit of the Federal Government pursuant to a grant, contract, loan, insurance or guarantee, or undertaken pursuant to any Federal Program involving such grant, contract, loan, insurance or guarantee, during the performance of this contract, the Contractor, in addition, agrees to comply with:

4. All provisions of the latest current Executive Order and executive amendments, of the rules, regulations and relevant orders of the President's Committee on Equal Employment Opportunity created thereby.

5. The contractor will furnish all information and reports required by the Executive, and by the rules, regulations and orders of the said committee, or pursuant thereto, and will permit access to his books, records and accounts by the administering agency and the Committee for purposes of investigation to ascertain compliance with such rules, regulations and orders.

6. In the event of the contractor's noncompliance with the non-discrimination clauses of this contract or with any of the said rules, regulations or orders, this contract may be canceled,

terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or Federally assigned construction contracts in accordance with procedures authorized in the Executive Order, and such other sanctions may be imposed and remedies invoked as provided in the said Executive Order or by rule, regulation or order of the President's Committee on Equal Employment Opportunity or as otherwise provided by law.

7. The contractor will include the provisions of Paragraphs (1) through (7) in every sub-contract or purchase order unless exempted by rules, regulations or orders of the President's Committee on Equal Employment Opportunity, so that provisions will be binding upon each sub-contractor or vendor. The contractor will take such action with respect to any sub-contractor purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a sub-contractor or vendor as a result of such direction by the agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

HOUSING AND URBAN DEVELOPMENT ACT OF 1968
SECTION 3 CLAUSE
24 CFR 135 (B)

A. The work to be performed under this contract is on a project assisted under a program providing direct Federal financial assistance from the Department of Housing and Urban Development and is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968 as amended, 12 U.S.C. 1701u Section 3 requires that to the greatest extent feasible opportunities for training and employment be given lower income residents of the project area and contracts for work in connection with the project to be awarded to business concerns which are located in, or owned in substantial part by persons residing in the area of the project.

B. The parties to this contract will comply with the provisions of said Section 3 and the regulations issued pursuant thereto by the Secretary of Housing and Urban Development set forth in 24 CFR 135, and all applicable rules and orders of the Department issued thereunder prior to execution of this contract. The parties to this contract certify and agree that they are under no contractual or other disability which would prevent them from complying with these requirements. (This Section 3 clause must be included verbatim in all contracts in excess of \$10,000).

C. The contractor will send to each labor organization or representative of workers with which he has a collective bargaining agreement or other contract or understandings, if any, a notice advising the said labor organization of workers representative of his commitments under the Section 3 clause and shall post copies of the notice in conspicuous places available to employees and applicants for employment and training.

D. The contractor will include this Section 3 clause in every subcontract for work in connection with the project and will at the direction of the applicant for or recipient of Federal financial assistance, take appropriate action pursuant of the subcontract upon a finding that the subcontractor is in violations of regulations issued by the Secretary of Housing and Urban Development, 24 CFR 135. The contractor will not subcontract with any subcontractor where it has notice or knowledge that the later has been found in violation of regulations under 24 CFR 135 and will not let any subcontract unless the subcontractor has first provided it with a preliminary statement of ability to comply with the requirements of these regulations.

E. Compliance with the provisions of Section 3, the regulations set forth in 24 CFR 135 and all applicable rules and orders of the Department issued thereunder prior to the execution of the contract, shall be a condition of the Federal financial assistance provided to the project, binding upon the applicant or recipient for such assistance, its successors, and assigns. Failure to fulfill these requirements shall subject the applicant or recipient, its contractor and subcontractors, its successors and assigns to those sanctions specified by the grant or loan agreement or contract through which federal assistance is provided, and to such sanctions, as are specified in 24 CFR 135.

OTHER FEDERAL REQUIREMENTS

INTEREST OF CERTAIN FEDERAL OFFICIALS

No member of or Delegate to the Congress of the United States and no Resident Commission, shall be admitted to any share or part of this Agreement or to any benefit to arise from the same.

INTEREST OF MEMBERS, OFFICERS, OR EMPLOYEES OF PUBLIC BODY, MEMBER OF LOCAL GOVERNING BODY, OR OTHER PUBLIC OFFICIALS

No member, officer, or employee of the Public Body, or its designees or agents, no member of the governing body of the locality in which the program is situated, and no other public official of such locality or localities who exercises any functions or responsibilities with respect to the program during his tenure or for one year thereafter, shall have any interest, direct or indirect, in any contract or sub-contract, or the proceeds thereof, for work to be performed in connection with the program assisted under this Agreement.

PROHIBITION AGAINST PAYMENTS OF BONUS OR COMMISSION

The assistance provided under this Agreement shall not be used in the payment of any bonus or commission for the purpose of obtaining HUD approval of the application for such assistance, or HUD approval of applications for additional assistance, or any other approval or concurrence of HUD required under this Agreement, Title I of the Housing and Community Development Act of 1974 or HUD regulations with respect thereto; provided, however, that reasonable fees or bonafide technical, consultant, managerial or other such services, other than actual solicitation, are not hereby prohibited if otherwise eligible as program costs.

PUBLIC LAW 88-352: TITLE VI OF THE CIVIL RIGHTS ACT OF 1964

The Developer agrees to insure that no person shall on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program in the multi-family rental housing facility developed through this contract.

PUBLIC LAW 90-284: TITLE VIII OF THE CIVIL RIGHTS ACT
OF 1968 AND EXECUTIVE ORDER 11063

The Developer warrants and assures that they and their agents will not discriminate in the rental or leasing of housing units constructed under this contract and will in no way make unavailable or deny a dwelling to any person, because of race, color, religion, sex or national origin.

SECTION 109

The Developer will not on the ground of race, color, national origin, sex, age, or handicap:

1. Deny an facilities, services, financial aid or other benefits provided under the program or activity.
2. Provide any facilities, services, financial aid or other benefits which are different, or are provided in a different form from that provided to others under the program or activity.
3. Subject to segregated or separate treatment in any facility in, or in any matter of process related to receipt of any service or benefit under the program or activity.
4. Restrict in any way access to, or in the enjoyment of any advantage or privilege enjoyed by others in connection with facilities, services, financial aid or other benefits under the program or activity.
5. Treat any individual differently from others in determining whether the individual satisfies any admission, enrollment, eligibility, membership, or other requirement or condition which individual must meet in order to be provided any facilities, services or other benefit provided under the program or activity.
6. Deny an opportunity to participate in a program or activity as an employee.

COMPLIANCE WITH THE CLEAN AIR AND WATER ACTS

Compliance with all applicable standards, orders, or requirements issued under section 206 of the Clean Air Act (42 U.S.C. 1857)(h), Section 506 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR Part 15). (Contracts, subcontracts, and subgrants of amounts in excess of \$100,000).

COMPLIANCE WITH AIR AND WATER ACTS

This Agreement is subject to the requirements of the Clean Air Act, as amended, 42 USC 1857 et. seq., the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. and the regulations of the Environmental Protection Agency with respect thereto, at 40 CFR Part 15, as amended from time to time.

The Contractor and any of its subcontractors for work funded under this Agreement, in excess of \$100,000 agree to the following requirements:

1. A stipulation by the Contractor or subcontractors that any facility to be utilized in the performance of any non-exempt contract or subcontract is not listed on the List of Violating Facilities issued by the Environmental Protection Agency (EPA) pursuant to 40 CFR 15.20.
2. Agreement by the Contractor to comply with all requirements of Section 114 of the Clean Air Act, as amended, (42 U.S.C. 1857c-8) and Section 308 of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1318) relating to inspecting, monitoring, entry, reports and information, as well as all other requirements specified in said Section 114 and Section 308, and all regulations and guidelines issued thereunder.
3. A stipulation that as a condition for the award of the Contract prompt notice will be given of any notification received from the Director, Office of Federal Activities, EPA indicating that a facility utilized or to be utilized for the Contract is under consideration to be listed on the EPA list of Violating Facilities.
4. Agreement by the Contractor that he/she will include or cause to be included the criteria and requirements in paragraph (1) through (4) of this section in every nonexempt subcontract and requiring that the Contractor will take such action as the Government may direct as a means of enforcing such provision.

In no event shall any amount of assistance provided under this Agreement be utilized with respect to a facility which has given rise to a conviction under Section 113(c)(1) of the Clean Air Act or Section 309(c) of the Federal Water Pollution Control Act.

EQUAL EMPLOYMENT OPPORTUNITY AFFIRMATIVE ACTION POLICY

It is the policy of _____
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.

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

Signature: _____
(Bidding Contractor)

Title:
Date:

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: _____

Project: _____

Printed Name and Title of Authorized Representative: _____

Signature: _____

Date: _____

LEAD BASED PAINT

- A. All paint to be lead free.
- B. Existing lead paint to be removed or concealed with an acceptable covering (paint, siding, etc.)
- C. Warning
 - 1. Use of lead-base paint materials on any surface, interior or exterior, is prohibited.
 - 2. Lead-base paint removal is a dangerous task and safety precautions should be strictly enforced when workers are engaged in hazard abatement.

POTENTIAL DBE CONTRACTOR(S) LIST

For a listing of DBE (Disadvantaged Business Enterprise) contractors/subcontractors please contact:

Sherita Miller
Division of Central Purchasing
200 E. Main Street, 3rd Floor
Lexington, KY 40507
(859) 258-3323
TDD [hearing impaired only] (859) 425-2563

Or

Todd Slatin
Division of Central Purchasing
200 E. Main Street, 3rd Floor
Lexington, KY 40507
(859) 258-3326
TDD [hearing impaired only] (859) 425-2563

General Decision Number: KY180100 10/05/2018 KY100

Superseded General Decision Number: KY20170100

State: Kentucky

Construction Type: Highway

Counties: Anderson, Bath, Bourbon, Boyd, Boyle, Bracken, Breckinridge, Bullitt, Carroll, Carter, Clark, Elliott, Fayette, Fleming, Franklin, Gallatin, Grant, Grayson, Greenup, Hardin, Harrison, Henry, Jefferson, Jessamine, Larue, Lewis, Madison, Marion, Mason, Meade, Mercer, Montgomery, Nelson, Nicholas, Oldham, Owen, Robertson, Rowan, Scott, Shelby, Spencer, Trimble, Washington and Woodford Counties in Kentucky.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.35 for calendar year 2018 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

| Modification Number | Publication Date |
|---------------------|------------------|
| 0 | 01/05/2018 |
| 1 | 01/19/2018 |
| 2 | 03/23/2018 |
| 3 | 04/20/2018 |
| 4 | 06/01/2018 |
| 5 | 06/15/2018 |
| 6 | 06/22/2018 |
| 7 | 07/13/2018 |
| 8 | 08/17/2018 |
| 9 | 10/05/2018 |

BRIN0004-003 06/01/2017

BRECKENRIDGE COUNTY

Rates

Fringes

BRICKLAYER.....\$ 26.80 12.38

BRKY0001-005 06/01/2017

BULLITT, CARROLL, GRAYSON, HARDIN, HENRY, JEFFERSON, LARUE,
MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, & TRIMBLE
COUNTIES:

Rates Fringes
BRICKLAYER.....\$ 26.80 12.38

BRKY0002-006 06/01/2017

BRACKEN, GALLATIN, GRANT, MASON & ROBERTSON COUNTIES:

Rates Fringes
BRICKLAYER.....\$ 27.81 13.01

BRKY0007-004 06/01/2017

BOYD, CARTER, ELLIOT, FLEMING, GREENUP, LEWIS & ROWAN COUNTIES:

Rates Fringes
BRICKLAYER.....\$ 32.98 19.02

BRKY0017-004 06/01/2017

ANDERSON, BATH, BOURBON, BOYLE, CLARK, FAYETTE, FRANKLIN,
HARRISON, JESSAMINE, MADISON, MERCER, MONTGOMERY, NICHOLAS,
OWEN, SCOTT, WASHINGTON & WOODFORD COUNTIES:

Rates Fringes
BRICKLAYER.....\$ 26.47 12.76

CARP0064-001 05/01/2015

Rates Fringes
CARPENTER.....\$ 27.50 16.06
Diver.....\$ 41.63 16.06
PILEDRIVERMAN.....\$ 27.75 16.06

ELEC0212-008 06/04/2018

BRACKEN, GALLATIN and GRANT COUNTIES

Rates Fringes
ELECTRICIAN.....\$ 28.39 18.98

ELEC0212-014 11/27/2017

BRACKEN, GALLATIN & GRANT COUNTIES:

| | Rates | Fringes |
|---------------------------------------|----------|---------|
| Sound & Communication Technician..... | \$ 23.55 | 11.26 |

 ELEC0317-012 06/01/2018

BOYD, CARTER, ELLIOT & ROWAN COUNTIES:

| | Rates | Fringes |
|-----------------------|----------|---------|
| ELECTRICIAN (Wiremen) | | |
| Cable Splicer..... | \$ 32.68 | 18.13 |
| Electrician..... | \$ 33.75 | 20.03 |

 ELEC0369-007 05/30/2018

ANDERSON, BATH, BOURBON, BOYLE, BRECKINRIDGE, BULLITT, CARROLL, CLARK, FAYETTE, FRAONKLIN, GRAYSON, HARDIN, HARRISON, HENRY, JEFFERSON, JESSAMINE, LARUE, MADISON, MARION, MEADE, MERCER, MONTGOMERY, NELSON, NICHOLAS, OLDHAM, OWEN, ROBERTSON, SCOTT, SHELBY, SPENCER, TRIMBLE, WASHINGTON, & WOODFORD COUNTIES:

| | Rates | Fringes |
|------------------|----------|---------|
| ELECTRICIAN..... | \$ 31.66 | 17.01 |

 ELEC0575-002 05/28/2018

FLEMING, GREENUP, LEWIS & MASON COUNTIES:

| | Rates | Fringes |
|------------------|----------|---------|
| ELECTRICIAN..... | \$ 32.45 | 16.43 |

 ENGI0181-018 07/01/2017

| | Rates | Fringes |
|--------------------------|----------|---------|
| POWER EQUIPMENT OPERATOR | | |
| GROUP 1..... | \$ 31.95 | 15.15 |
| GROUP 2..... | \$ 29.09 | 15.15 |
| GROUP 3..... | \$ 29.54 | 15.15 |
| GROUP 4..... | \$ 28.77 | 15.15 |

OPERATING ENGINEER CLASSIFICATIONS

GROUP 1 - A-Frame Winch Truck; Auto Patrol; Backfiller; Batcher Plant; Bituminous Paver; Bituminous Transfer Machine; Boom Cat; Bulldozer; Mechanic; Cableway; Carry-All Scoop; Carry Deck Crane; Central Compressor Plant; Cherry Picker; Clamshell; Concrete Mixer (21 cu. ft. or Over); Concrete Paver; Truck-Mounted Concrete Pump; Core Drill; Crane; Crusher Plant; Derrick; Derrick Boat; Ditching & Trenching Machine; Dragline; Dredge Operator; Dredge Engineer; Elevating Grader & Loaders; Grade-All; Gurries;

Heavy Equipment Robotics Operator/Mechanic; High Lift; Hoe-Type Machine; Hoist (Two or More Drums); Hoisting Engine (Two or More Drums); Horizontal Directional Drill Operator; Hydrocrane; Hyster; KeCal Loader; LeTourneau; Locomotive; Mechanic; Mechanically Operated Laser Screed; Mechanic Welder; Mucking Machine; Motor Scraper; Orangepeel Bucket; Overhead Crane; Piledriver; Power Blade; Pumpcrete; Push Dozer; Rock Spreader, attached to equipment; Rotary Drill; Roller (Bituminous); Rough Terrain Crane; Scarifier; Scoopmobile; Shovel; Side Boom; Subgrader; Tailboom; Telescoping Type Forklift; Tow or Push Boat; Tower Crane (French, German & other types); Tractor Shovel; Truck Crane; Tunnel Mining Machines, including Moles, Shields or similar types of Tunnel Mining Equipment

GROUP 2 - Air Compressor (Over 900 cu. ft. per min.); Bituminous Mixer; Boom Type Tamping Machine; Bull Float; Concrete Mixer (Under 21 cu. ft.); Dredge Engineer; Electric Vibrator; Compactor/Self-Propelled Compactor; Elevator (One Drum or Buck Hoist); Elevator (When used to Hoist Building Material); Finish Machine; Firemen & Hoist (One Drum); Flexplane; Forklift (Regardless of Lift Height); Form Grader; Joint Sealing Machine; Outboard Motor Boat; Power Sweeper (Riding Type); Roller (Rock); Ross Carrier; Skid Mounted or Trailer Mounted Concrete Pump; Skid Steer Machine with all Attachments; Switchman or Brakeman; Throttle Valve Person; Tractair & Road Widening Trencher; Tractor (50 H.P. or Over); Truck Crane Oiler; Tugger; Welding Machine; Well Points; & Whirley Oiler

GROUP 3 - All Off Road Material Handling Equipment, including Articulating Dump Trucks; Greaser on Grease Facilities servicing Heavy Equipment

GROUP 4 - Bituminous Distributor; Burlap & Curing Machine; Cement Gun; Concrete Saw; Conveyor; Deckhand Oiler; Grout Pump; Hydraulic Post Driver; Hydro Seeder; Mud Jack; Oiler; Paving Joint Machine; Power Form Handling Equipment; Pump; Roller (Earth); Steerman; Tamping Machine; Tractor (Under 50 H.P.); & Vibrator

CRANES - with booms 150 ft. & Over (Including JIB), and where the length of the boom in combination with the length of the piling leads equals or exceeds 150 ft. - \$1.00 over Group 1 rate

EMPLOYEES ASSIGNED TO WORK BELOW GROUND LEVEL ARE TO BE PAID 10% ABOVE BASIC WAGE RATE. THIS DOES NOT APPLY TO OPEN CUT WORK.

IRON0044-009 06/01/2018

BRACKEN, GALLATIN, GRANT, HARRISON, ROBERTSON,
BOURBON (Northern third, including Townships of Jackson, Millersburg, Ruddel Mills & Shawhan);
CARROLL (Eastern third, including the Township of Ghent);
FLEMING (Western part, excluding Townships of Beechburg, Colfax, Elizaville, Flemingsburg, Flemingsburg Junction, Foxport,

Grange City, Hillsboro, Hilltop, Mount Carmel, Muses Mills, Nepton, Pecksridge, Plummers Landing, Plummers Mill, Poplar Plains, Ringos Mills, Tilton & Wallingford);
 MASON (Western two-thirds, including Townships of Dover, Lewisburg, Mays Lick, Maysville, Minerva, Moranburg, Murphysville, Ripley, Sardis, Shannon, South Ripley & Washington);
 NICHOLAS (Townships of Barefoot, Barterville, Carlisle, Ellisville, Headquarters, Henryville, Morningglory, Myers & Oakland Mills);
 OWEN (Townships of Beechwood, Bromley, Fairbanks, Holbrook, Jonesville, Long Ridge, Lusby's Mill, New, New Columbus, New Liberty, Owenton, Poplar Grove, Rockdale, Sanders, Teresita & Wheatley);
 SCOTT (Northern two-thirds, including Townships of Biddle, Davis, Delaplain, Elmville, Longlick, Muddy Ford, Oxford, Rogers Gap, Sadieville, Skinnersburg & Stonewall)

| | Rates | Fringes |
|--------------------|----------|---------|
| IRONWORKER | | |
| Fence Erector..... | \$ 26.76 | 21.20 |
| Structural..... | \$ 28.17 | 21.20 |

 IRON0070-006 06/01/2018

ANDERSON, BOYLE, BRECKINRIDGE, BULLITT, FAYETTE, FRANKLIN, GRAYSON, HARDIN, HENRY, JEFFERSON, JESSAMINE, LARUE, MADISON, MARION, MEADE, MERCER, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE, WASHINGTON & WOODFORD
 BOURBON (Southern two-thirds, including Townships of Austerlity, Centerville, Clintonville, Elizabeth, Hutchison, Littlerock, North Middletown & Paris);
 CARROLL (Western two-thirds, including Townships of Carrollton, Easterday, English, Locust, Louis, Prestonville & Worthville);
 CLARK (Western two-thirds, including Townships of Becknerville, Flanagan, Ford, Pine Grove, Winchester & Wyandotte);
 OWEN (Eastern eighth, including Townships of Glenmary, Gratz, Monterey, Perry Park & Tacketts Mill);
 SCOTT (Southern third, including Townships of Georgetown, Great Crossing, Newtown, Stampling Ground & Woodlake);

| | Rates | Fringes |
|-----------------|----------|---------|
| IRONWORKER..... | \$ 28.79 | 22.50 |

 IRON0769-007 06/01/2018

BATH, BOYD, CARTER, ELLIOTT, GREENUP, LEWIS, MONTGOMERY & ROWAN
 CLARK (Eastern third, including townships of Bloomingdale, Hunt, Indian Fields, Kiddville, Loglick, Rightangele & Thomson);
 FLEMING (Townships of Beechburg, Colfax, Elizaville, Flemingsburg, Flemingsburg Junction, Foxport, Grange City, Hillsboro, Hilltop, Mount Carmel, Muses Mills, Nepton, Pecksridge, Plummers Landing, Plummers Mill, Poplar Plains, Ringos Mills, Tilton & Wallingford);
 MASON (Eastern third, including Townships of Helena, Marshall,

Orangeburg, Plumville & Springdale);
 NICHOLAS (Eastern eighth, including the Township of Moorefield
 Sprout)

| | Rates | Fringes |
|-------------|----------|---------|
| IRONWORKER | | |
| ZONE 1..... | \$ 31.67 | 25.27 |
| ZONE 2..... | \$ 31.67 | 25.27 |
| ZONE 3..... | \$ 31.67 | 25.27 |

ZONE 1 - (no base rate increase) Up to 10 mile radius of
 Union Hall, 1643 Greenup Ave, Ashland, KY.

ZONE 2 - (add \$0.40 per hour to base rate) 10 to 50 mile
 radius of Union Hall, 1643 Greenup Ave, Ashland, KY.

ZONE 3 - (add \$2.00 per hour to base rate) 50 mile radius &
 over of Union Hall, 1643 Greenup Ave, Ashland, KY.

 * LABO0189-003 07/01/2018

BATH, BOURBON, BOYD, BOYLE, BRACKEN, CARTER, CLARK, ELLIOTT,
 FAYETTE, FLEMING, FRANKLIN, GALLATIN, GRANT, GREENUP, HARRISON,
 JESSAMINE, LEWIS, MADISON, MASON, MERCER, MONTGOMERY, NICHOLAS,
 OWEN, ROBERTSON, ROWAN, SCOTT, & WOOLFORD COUNTIES

| | Rates | Fringes |
|--------------|----------|---------|
| Laborers: | | |
| GROUP 1..... | \$ 23.07 | 14.21 |
| GROUP 2..... | \$ 23.32 | 14.21 |
| GROUP 3..... | \$ 23.37 | 14.21 |
| GROUP 4..... | \$ 23.97 | 14.21 |

LABORERS CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement
 Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter
 Tender; Cement Mason Tender; Cleaning of Machines;
 Concrete; Demolition; Dredging; Environmental - Nuclear,
 Radiation, Toxic & Hazardous Waste - Level D; Flagperson;
 Grade Checker; Hand Digging & Hand Back Filling; Highway
 Marker Placer; Landscaping, Mesh Handler & Placer; Puddler;
 Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail
 & Fence Installer; Signal Person; Sound Barrier Installer;
 Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper;
 Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer);
 Brickmason Tender; Mortar Mixer Operator; Scaffold Builder;
 Burner & Welder; Bushhammer; Chain Saw Operator; Concrete
 Saw Operator; Deckhand Scow Man; Dry Cement Handler;
 Environmental - Nuclear, Radiation, Toxic & Hazardous Waste
 - Level C; Forklift Operator for Masonary; Form Setter;
 Green Concrete Cutting; Hand Operated Grouter & Grinder

Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

 * LAB00189-008 07/01/2018

ANDERSON, BULLITT, CARROLL, HARDIN, HENRY, JEFFERSON, LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE & WASHINGTON COUNTIES

| | Rates | Fringes |
|--------------|----------|---------|
| Laborers: | | |
| GROUP 1..... | \$ 23.07 | 14.21 |
| GROUP 2..... | \$ 23.32 | 14.21 |
| GROUP 3..... | \$ 23.37 | 14.21 |
| GROUP 4..... | \$ 23.97 | 14.21 |

LABORERS CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushhammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger;

Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Side Rail Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

 * LAB00189-009 07/01/2018

BRECKINRIDGE & GRAYSON COUNTIES

| | Rates | Fringes |
|--------------|----------|---------|
| Laborers: | | |
| GROUP 1..... | \$ 23.07 | 14.21 |
| GROUP 2..... | \$ 23.32 | 14.21 |
| GROUP 3..... | \$ 23.37 | 14.21 |
| GROUP 4..... | \$ 23.97 | 14.21 |

LABORERS CLASSIFICATIONS

GROUP 1 - Aging & Curing of Concrete; Asbestos Abatement Worker; Asphalt Plant; Asphalt; Batch Truck Dump; Carpenter Tender; Cement Mason Tender; Cleaning of Machines; Concrete; Demolition; Dredging; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level D; Flagperson; Grade Checker; Hand Digging & Hand Back Filling; Highway Marker Placer; Landscaping, Mesh Handler & Placer; Puddler; Railroad; Rip-rap & Grouter; Right-of-Way; Sign, Guard Rail & Fence Installer; Signal Person; Sound Barrier Installer; Storm & Sanitary Sewer; Swamper; Truck Spotter & Dumper; Wrecking of Concrete Forms; General Cleanup

GROUP 2 - Batter Board Man (Sanitary & Storm Sewer); Brickmason Tender; Mortar Mixer Operator; Scaffold Builder; Burner & Welder; Bushhammer; Chain Saw Operator; Concrete Saw Operator; Deckhand Scow Man; Dry Cement Handler; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Level C; Forklift Operator for Masonary; Form Setter; Green Concrete Cutting; Hand Operated Grouter & Grinder Machine Operator; Jackhammer; Pavement Breaker; Paving Joint Machine; Pipelayer; Plastic Pipe Fusion; Power Driven Georgia Buggy & Wheel Barrow; Power Post Hole Digger; Precast Manhole Setter; Walk-Behind Tamper; Walk-Behind Trencher; Sand Blaster; Concrete Chipper; Surface Grinder; Vibrator Operator; Wagon Driller

GROUP 3 - Asphalt Luteman & Raker; Gunnite Nozzleman; Gunnite Operator & Mixer; Grout Pump Operator; Side Rail

Setter; Rail Paved Ditches; Screw Operator; Tunnel (Free Air); Water Blaster

GROUP 4 - Caisson Worker (Free Air); Cement Finisher; Environmental - Nuclear, Radiation, Toxic & Hazardous Waste - Levels A & B; Miner & Driller (Free Air); Tunnel Blaster; & Tunnel Mucker (Free Air); Directional & Horizontal Boring; Air Track Drillers (All Types); Powdermen & Blasters; Troxler & Concrete Tester if Laborer is Utilized

PAIN0012-005 06/11/2005

BATH, BOURBON, BOYLE, CLARK, FAYETTE, FLEMING, FRANKLIN, HARRISON, JESSAMINE, MADISON, MERCER, MONTGOMERY, NICHOLAS, ROBERTSON, SCOTT & WOODFORD COUNTIES:

| | Rates | Fringes |
|--|----------|---------|
| PAINTER | | |
| Bridge/Equipment Tender and/or Containment Builder.. | \$ 18.90 | 5.90 |
| Brush & Roller..... | \$ 21.30 | 5.90 |
| Elevated Tanks; Steeplejack Work; Bridge & Lead Abatement..... | \$ 22.30 | 5.90 |
| Sandblasting & Waterblasting..... | \$ 22.05 | 5.90 |
| Spray..... | \$ 21.80 | 5.90 |

PAIN0012-017 05/01/2015

BRACKEN, GALLATIN, GRANT, MASON & OWEN COUNTIES:

| | Rates | Fringes |
|--|----------|---------|
| PAINTER (Heavy & Highway Bridges - Guardrails - Lightpoles - Striping) | | |
| Bridge Equipment Tender and Containment Builder.... | \$ 20.73 | 9.06 |
| Brush & Roller..... | \$ 23.39 | 9.06 |
| Elevated Tanks; Steeplejack Work; Bridge & Lead Abatement..... | \$ 24.39 | 9.06 |
| Sandblasting & Water Blasting..... | \$ 24.14 | 9.06 |
| Spray..... | \$ 23.89 | 9.06 |

PAIN0118-004 06/01/2018

ANDERSON, BRECKINRIDGE, BULLITT, CARROLL, GRAYSON, HARDIN, HENRY, JEFFERSON, LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE & WASHINGTON COUNTIES:

| Rates | Fringes |
|-------|---------|
|-------|---------|

| | | |
|---|----------|-------|
| PAINTER | | |
| Brush & Roller..... | \$ 22.00 | 12.52 |
| Spray, Sandblast, Power Tools, Waterblast & Steam Cleaning..... | \$ 23.00 | 12.52 |

PAIN1072-003 12/01/2017

BOYD, CARTER, ELLIOTT, GREENUP, LEWIS and ROWAN COUNTIES

| | Rates | Fringes |
|---|----------|---------|
| Painters: | | |
| Bridges; Locks; Dams; Tension Towers & Energized Substations..... | \$ 33.33 | 15.45 |
| Power Generating Facilities. | \$ 30.09 | 15.45 |

PLUM0248-003 06/01/2018

BOYD, CARTER, ELLIOTT, GREENUP, LEWIS & ROWAN COUNTIES:

| | Rates | Fringes |
|------------------------------|----------|---------|
| Plumber and Steamfitter..... | \$ 36.00 | 20.23 |

PLUM0392-007 06/01/2018

BRACKEN, CARROLL (Eastern Half), GALLATIN, GRANT, MASON, OWEN & ROBERTSON COUNTIES:

| | Rates | Fringes |
|-------------------------------|----------|---------|
| Plumbers and Pipefitters..... | \$ 32.01 | 19.67 |

PLUM0502-003 08/01/2018

BRECKINRIDGE, BULLITT, CARROLL (Western Half), FRANKLIN (Western three-fourths), GRAYSON, HARDIN, HENRY, JEFFERSON, LARUE, MARION, MEADE, NELSON, OLDHAM, SHELBY, SPENCER, TRIMBLE & WASHINGTON COUNTIES

| | Rates | Fringes |
|--------------|----------|---------|
| PLUMBER..... | \$ 34.62 | 20.78 |

SUKY2010-160 10/08/2001

| | Rates | Fringes |
|----------------|----------|---------|
| Truck drivers: | | |
| GROUP 1..... | \$ 16.57 | 7.34 |
| GROUP 2..... | \$ 16.68 | 7.34 |
| GROUP 3..... | \$ 16.86 | 7.34 |
| GROUP 4..... | \$ 16.96 | 7.34 |

TRUCK DRIVER CLASSIFICATIONS

GROUP 1 - Mobile Batch Truck Tender

GROUP 2 - Greaser; Tire Changer; & Mechanic Tender

GROUP 3 - Single Axle Dump; Flatbed; Semi-trailer or Pole Trailer when used to pull building materials and equipment; Tandem Axle Dump; Distributor; Mixer; & Truck Mechanic

GROUP 4 - Euclid & Other Heavy Earthmoving Equipment & Lowboy; Articulator Cat; 5-Axle Vehicle; Winch & A-Frame when used in transporting materials; Ross Carrier; Forklift when used to transport building materials; & Pavement Breaker

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana; 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

September 8, 2016

Sondra Stone
LFUCG
200 E. Main St.
Lexington KY 40507

Re: LFUCG, Meadows Northland Arlington Improvement Phase 5E & 5F

Advertising Date as Shown on Notification: September 12, 2016

Dear Sondra Stone:

This office is in receipt of your written notification on the above project as required by KRS 337.510 (1).

I am enclosing a copy of the current prevailing wage determination number CR 2-012, dated December 22, 2015 for FAYETTE County. This schedule of wages shall be attached to and made a part of the specifications for the work, printed on the bidding blanks, and made a part of the contract for the construction of the public works between the public authority and the successful bidder or bidders.

The determination number assigned to this project is based upon the advertising date contained in your notification. There may be modifications to this wage determination prior to the advertising date indicated. In addition, if the contract is not awarded within 90 days of this advertising date or if the advertising date is modified, a different set of prevailing rates of wages may be applicable. It will be the responsibility of the public authority to contact this office and verify the correct schedule of the prevailing rates of wages for use on the project. Your project number is as follows: 034-H-01500-15-2, Heavy/Highway

Sincerely,



Michael C. Donta
Deputy Commissioner

KENTUCKY LABOR CABINET
PREVAILING WAGE DETERMINATION
CURRENT REVISION
LOCALITY NO. 012

FAYETTE COUNTY

Determination No. CR 2-012

Date of Determination: December 22, 2015

PROJECT NO. 034-H-01500-15-2

_____BLDG ___X___HH

This schedule of the prevailing rate of wages for Locality No. 012, which includes Fayette County, has been determined in accordance with the provisions of KRS 337.505 to 337.550. This determination shall be referred to as Prevailing Wage Determination No. CR 2-012.

Apprentices shall be permitted to work as such subject to Administrative Regulations 803 KAR 1:010. Copies of these regulations will be furnished upon request to any interested person.

Overtime is to be computed at not less than one and one-half (1 1/2) times the indicated BASE RATE for all hours worked in excess of eight (8) per day, and/or in excess of forty (40) per week. However, KRS 337.540 permits an employee and employer to agree, in writing, that the employee will be compensated at a straight time base rate for hours worked in excess of eight (8) hours in any one calendar day, but not more than ten (10) hours worked in any one calendar day, if such written agreement is prior to the over eight (8) hours in a calendar day actually being worked, or where provided for in a collective bargaining agreement. The fringe benefit rate is to be paid for each hour worked at a straight time rate for all hours worked. Fringe benefit amounts are applicable for all hours worked except when otherwise noted. Welders will receive rate for craft in which welding is incidental.

No laborer, workman or mechanic shall be paid at a rate less than that of the General Laborer except those classified as bona fide apprentices registered with the Kentucky State Apprenticeship Supervisor unless otherwise specified in this schedule of wage rates.

NOTE: The type of construction shall be determined by applying the following definitions.

BUILDING CONSTRUCTION

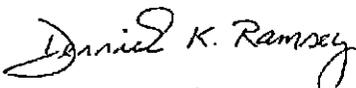
Building construction is the construction of sheltered enclosures with walk-in access for the purpose of housing persons, machinery, equipment, or supplies. It includes all construction of such structures, the installation of utilities and the installation of equipment, both above and below grade level, as well as incidental grading, utilities and paving.

HIGHWAY CONSTRUCTION

Highway construction includes the construction, alteration or repair of roads, streets, highways, runways, taxiways, alleys, trails, paths, parking areas, and other similar projects not incidental to building or heavy construction. It includes all incidental construction in conjunction with the highway construction project.

HEAVY CONSTRUCTION

Heavy projects are those projects that are not properly classified as either "building" or "highway". For example, dredging projects, water and sewer line projects, dams, flood control projects, sewage treatment plants and facilities, and water treatment plants and facilities are considered heavy.



Derrick K. Ramsey, Secretary
Kentucky Labor Cabinet

| | | | |
|-------------------------------------|--|-----------------|---------|
| ASBESTOS/INSULATION WORKERS: | | BASE RATE | \$25.11 |
| | | FRINGE BENEFITS | 13.21 |

| | | | |
|----------------------|--|-----------------|---------|
| BOILERMAKERS: | | BASE RATE | \$21.75 |
| | | FRINGE BENEFITS | 11.76 |

| | | | |
|---------------------|--|-----------------|---------|
| BRICKLAYERS: | | BASE RATE | \$24.31 |
| Bricklayers: | | FRINGE BENEFITS | 11.40 |

| | | | |
|-------------------------|--|-----------------|---------|
| Firebrick & Refractory: | | BASE RATE | \$26.08 |
| | | FRINGE BENEFITS | 11.42 |

| | | | |
|------------------|--|-----------------|-------|
| Sawman & Layman: | | BASE RATE | 24.56 |
| | | FRINGE BENEFITS | 11.40 |

| | | | |
|-----------------------------|----------|-----------------|---------|
| CARPENTERS: | | BASE RATE | \$22.96 |
| Carpenters: | BUILDING | FRINGE BENEFITS | 14.07 |
| (Includes Drywall Finisher) | | | |

| | | | |
|----------------|----------|-----------------|---------|
| Piledrivermen: | BUILDING | BASE RATE | \$23.46 |
| | | FRINGE BENEFITS | 14.07 |

| | | | |
|-------------|-----------------|-----------------|---------|
| Carpenters: | HEAVY & HIGHWAY | BASE RATE | \$26.90 |
| | | FRINGE BENEFITS | 14.50 |

| | | | |
|-------------|-----------------|-----------------|---------|
| Piledriver: | HEAVY & HIGHWAY | BASE RATE | \$27.15 |
| | | FRINGE BENEFITS | 14.50 |

| | | | |
|---------|-----------------|-----------------|---------|
| Divers: | HEAVY & HIGHWAY | BASE RATE | \$40.73 |
| | | FRINGE BENEFITS | 14.50 |

| | | | |
|-----------------------|--|-----------|---------|
| CEMENT MASONS: | | BASE RATE | \$22.00 |
| | | FRINGE | 12.75 |

| | | | |
|----------------------|--|-----------------|---------|
| ELECTRICIANS: | | BASE RATE | \$30.01 |
| | | FRINGE BENEFITS | 15.65 |

When workmen are required to work from bosun chairs, trusses, stacks, tanks, scaffolds, catwalks, radio and T.V. towers, structural steel (open, unprotected, unfloored raw steel) and bridges or similar hazardous locations where workmen are subject to a direct fall: 50 feet to 75 feet – add 25% above the workman's hourly rate, over 75 feet add 50% above workman's hourly rate. No premium shall be paid on work performed using JLGs, bucket trucks or other similar elevated mechanized work platforms up to 75 feet above the surface upon which the platform sits.

| | | | |
|-----------------|---------------|-----------------|---------|
| LINEMAN: | HEAVY HIGHWAY | BASE RATE | \$34.13 |
| | | FRINGE BENEFITS | 11.97 |

| | | | |
|---------------------|---------------|-----------------|---------|
| EQUIPMENT OPERATOR: | HEAVY HIGHWAY | BASE RATE | \$30.51 |
| | | FRINGE BENEFITS | 11.26 |

| | | | |
|-------------|---------------|-----------------|---------|
| GROUNDSMAN: | HEAVY HIGHWAY | BASE RATE | \$20.21 |
| | | FRINGE BENEFITS | 9.19 |

| | | | |
|------------------------|--|-----------------|---------|
| ELEVATOR CONSTRUCTORS: | | BASE RATE | \$30.46 |
| | | FRINGE BENEFITS | 8.92 |

| | | | |
|-----------|--|-----------------|---------|
| GLAZIERS: | | BASE RATE | \$24.15 |
| | | FRINGE BENEFITS | 11.45 |

| | | | |
|--------------|--|-----------------|---------|
| IRONWORKERS: | | BASE RATE | \$27.56 |
| | | FRINGE BENEFITS | 20.57 |

LABORERS / BUILDING:

BUILDING GROUP 1: General laborers, asbestos abatement laborer, toxic waste removal laborer, water boys, tool room checker, carpenter tenders, (civil engineer helper, rodman, grade checker, excluding all field work performed by Engineering Firms), concrete pouring and curing, concrete forms stripping and wrecking, hand digging and backfilling of ditches, clearing of right of ways and building sites, wood sheeting and shoring, signalman for concrete bucket and general cleaning, and environmental laborer - nuclear, radiation, toxic and hazardous waste - Level D:

| | | |
|----------|-----------------|---------|
| BUILDING | *BASE RATE | \$21.51 |
| | FRINGE BENEFITS | 11.59 |

BUILDING GROUP 2: All air tool operators, air track drills, asphalt rakers, tampers, batchers plant and scale man, chain saw, concrete saw, cutter/burner, electric hand grinder, all electric bush and chipping hammers, flagmen, forklift operators, form setter (street or highway), metal form setters, heaters, mesh handlers on walkways, streets and roadways outside building, gunnite laborers, hand spiker, introflax burning rod, joint makers, mason tender, multi-trade tender, pipe layers, plaster tender, powderman helpers, power driven Georgia buggies, power posthole diggers, railroad laborers, sandblaster laborers, scow man and deck hand, signal man, sweeper and cleaner machines, vibrator operators, vibrator/tamper operated by hand or remote control, walk behind trenching machines, mortar mixer machines, water pumpmen, and environmental laborers - nuclear, radiation, toxic and hazardous waste - Level C:

| | | |
|----------|-----------------|---------|
| BUILDING | *BASE RATE | \$21.91 |
| | FRINGE BENEFITS | 11.59 |

BUILDING GROUP 3: Asphalt paver screwman, gunnite nozzle man and gunnite nozzle machine operator, sand blaster nozzle man, concrete or grout pumpman, plaster pumpman, Powderman and blaster, and environmental laborer - nuclear, radiation, toxic and hazardous waste - Level B: :

| | | |
|----------|-----------------|---------|
| BUILDING | *BASE RATE | \$22.11 |
| | FRINGE BENEFITS | 11.59 |

BUILDING GROUP 4: Caisson holes (6 ft. and over) pressure and free air including tools, and environmental laborer-nuclear, radiation, toxic and hazardous waste - Level A, Tunnel man and tunnel sand miner, cofferdam (pressure and free air), sand hog or mucker (pressure or free air): :

| | | |
|----------|------------|---------|
| BUILDING | *BASE RATE | \$22.71 |
|----------|------------|---------|

FRINGE BENEFITS

11.59

*Employees handling chemically treated materials which are harmful to the skin shall receive an additional \$.50 above base rate. Employees working on high work such as towers or smoke stacks, or any type of work fifty (50) feet above the ground or a solid floor shall receive \$1.00 above base rate. Employees working on boilers, kilns, melting tanks, furnaces, or when refractory is done using live fires, drying fires, heatups or any hot work shall receive \$2.00 above base rate.

LABORERS / HEAVY & HIGHWAY:

HEAVY HIGHWAY GROUP 1: Aging and curing of concrete (any mode or method), asbestos abatement worker, asphalt plant laborers, asphalt laborers, batch truck dumpers, carpenter tenders, cement mason tenders, cleaning of machines, concrete laborers, demolition laborers, dredging laborers, drill helper, environmental laborer - nuclear, radiation, toxic and hazardous waste - Level D, flagmen, grade checkers, all hand digging and hand back filling, highway marker placers, landscaping laborers, mesh handlers and placers, puddler, railroad laborers, rip-rap and grouters, right of way laborers, sign, guard rail and fence installers (all types), signal men, sound barrier installer, storm and sanitary sewer laborers, swamper, truck spotters and dumpers, and wrecking of concrete forms, general cleanup, tending & setting of precast products, applying sealers, epoxies, coating curing compounds, cure & seal products & prep on all services of concrete wall expansion materials:

| | | |
|-----------------|-----------------|---------|
| HEAVY & HIGHWAY | BASE RATE | \$22.30 |
| | FRINGE BENEFITS | 12.86 |

HEAVY HIGHWAY GROUP 2: Batter board men (sanitary and storm sewer), brickmason tenders, mortar mixer operator, scaffold builders, burner and welder, bushhammers, chain saw operator, concrete saw operators, deckhand scow man, dry cement handlers, environmental laborers - nuclear, radiation, toxic and hazardous waste - Level C, forklift operators for masonry, form setters, green concrete cutting, hand operated grouter and grinder machine operator, jack hammers, lead paint abatement, pavement breakers, paving joint machine, pipe layers-laser operators (non-metallic), plastic pipe fusion, power driven Georgia buggy or wheelbarrow, power post hole diggers, precast manhole setters, walk-behind tampers, walk-behind trenchers, sand blasters, concrete chippers, surface grinders, vibrator operators, wagon drillers:

| | | |
|-----------------|-----------------|---------|
| HEAVY & HIGHWAY | BASE RATE | \$22.55 |
| | FRINGE BENEFITS | 12.86 |

HEAVY HIGHWAY GROUP 3: Asphalt luteman and rakers, gunnite nozzleman, gunnite operators and mixers, grout pump operator, side rail setters, rail paved ditches, screw operators, tunnel laborers (free air), and water blasters, remote controlled compactors, air lifting, dewatering, water pumps & asphalt sealer applicator:

| | | |
|-----------------|-----------------|---------|
| HEAVY & HIGHWAY | BASE RATE | \$22.60 |
| | FRINGE BENEFITS | 12.86 |

HEAVY HIGHWAY GROUP 4: Caisson workers (free air), cement finishers, environmental laborer - nuclear, radiation, toxic and hazardous waste - Levels A and B, miners and drillers (free air), tunnel blasters, and tunnel muckers (free air), directional and horizontal boring, air track driller (all types), powder man and blaster, troxler & concrete tester if Laborer utilized, GPS if performed by Laborer:

| | | |
|-----------------|-----------------|---------|
| HEAVY & HIGHWAY | BASE RATE | \$23.20 |
| | FRINGE BENEFITS | 12.86 |

MARBLE, TILE & TERRAZZO:

Finishers:

| | | |
|--|-----------------|---------|
| | BASE RATE | \$16.17 |
| | FRINGE BENEFITS | 0.00 |

| | | |
|----------|-----------------|---------|
| Setters: | BASE RATE | \$23.00 |
| | FRINGE BENEFITS | 0.00 |

| | | |
|--------------|-----------------|---------|
| MILLWRIGHTS: | BASE RATE | \$24.18 |
| | FRINGE BENEFITS | 15.67 |

**OPERATING ENGINEERS / BUILDING:
NCCCO OR OECP CERTIFIED or US COAST GUARD APPROVED BOAT PILOT LICENSE**

BUILDING CLASS A-1: Crane, dragline, hoist (1 drum when used for stack or chimney construction or repair); hoisting engineer (2 or more drums), orangepeel bucket, overhead crane, piledriver, truck crane, tower crane, hydraulic crane, T tug boat or push boat:

| | | |
|----------|-----------------|---------|
| BUILDING | BASE RATE | \$29.80 |
| | FRINGE BENEFITS | 14.40 |

BUILDING CLASS A: Articulating dump, auto patrol, batcher plant, bituminous paver, cableway, central compressor plant, clamshell, concrete mixer (21 cu. ft. or over), concrete pump, crane, crusher plant, derrick, derrick boat, directional boring machine, ditching and trenching machine, dragline, dredge operator, dredge engineer, elevating grader and all types of loaders, forklift (regardless of lift height), GPS systems (on equipment within the classification), hoe type machine, hoist (1 drum when used for stack or chimney construction or repair), hoisting engineer (2 or more drums), laser or remote controlled equipment (within the classification), locomotive, motor scraper, carry-all scoop, bulldozer, heavy duty welder, mechanic, orangepeel bucket, piledriver, power blade, motor grader, roller (bituminous), scarifier, shovel, tractor shovel, truck crane, winch truck, push dozer, highlift, all types of boom cats, self contained core drill, hopto, tow or push boat, a-frame winch truck, concrete paver, gradeall, hoist, hyster, pumpcrete, Ross carrier, boom, tail boom, rotary drill, hydro hammer, mucking machine, rock spreader attached to equipment, scoopmobile, KeCal loader, tower cranes (French, German and other types), hydrocrane, backfiller, guries, sub-grader, tunnel mining machines including moles, shields, or similar types of tunnel mining equipment, hydro excavator, micro pile driving machine, remote control demolition equipment, self-propelled modular transporter, skid steer, transfer machine/shuttle buggy, vacuum truck:

| | | |
|----------|-----------------|---------|
| BUILDING | *BASE RATE | \$28.71 |
| | FRINGE BENEFITS | 14.40 |

*Operators on cranes with boom one-hundred fifty feet (150') and over including jib, shall receive seventy-five cents (\$.75) above base rate. All cranes with piling leads will receive \$.50 above base rate regardless of boom length. Operators on cranes with booms 200 ft and over including JIB shall receive one dollar (\$1.00) above Class A-1 or A, cranes with booms 300 ft and over including JIB shall receive two dollars (\$2.00) above Class a-1 or A.

BUILDING CLASS B: All air compressors (over 900 CFM), bituminous mixer, joint sealing machine, concrete mixer (under 21 cu. ft.), form grader, roller (rock), tractor (50 HP and over), bull float, finish machine, outboard motor boat, flexplane, fireman, boom type tamping machine, truck crane oiler, greaser on grease facilities servicing heavy equipment, switchman or brakeman, mechanic helper, whirley oiler, self-propelled compactor, tractair and road widening trencher and farm tractor with attachments (except backhoe, highlift and endloader), elevator (regardless of ownership when used for hoisting any building material), hoisting engineer (1-drum or buck hoist), firebrick (masonry excluded), well points, grout pump, throttle-valve man, tugger, electric vibrator compactor, and caisson drill helper, water pull/water truck

when used for compacting:

| | | |
|----------|-----------------|---------|
| BUILDING | BASE RATE | \$25.73 |
| | FRINGE BENEFITS | 14.40 |

BUILDING CLASS C: Bituminous distributor, cement gun, conveyor, mud jack, paving joint machine, roller (earth), tamping machine, tractors (under 50 HP), vibrator, oiler, concrete saw, burlap and curing machine, hydro-seeder, power form handling equipment, deckhand steersman, hydraulic post driver, and drill helper:

| | | |
|----------|-----------------|---------|
| BUILDING | BASE RATE | \$24.90 |
| | FRINGE BENEFITS | 14.40 |

**OPERATING ENGINEERS / HEAVY HIGHWAY:
NCCCO OR OECP CERTIFIED or US Coast Guard approved Boat Pilot License**

HEAVY HIGHWAY CLASS A-1: Cableway, carry deck crane, cherry picker, clamshell, crane, derrick, derrick boat, dragline, hoist engine (2 or more drums), hydraulic boom truck, hydrocrane, orange peel bucket, overhead crane, piledriver, rough terrain crane, tower cranes (French, German & other types), truck crane:

| | | |
|---------------|-----------------|---------|
| HEAVY HIGHWAY | BASE RATE | \$31.08 |
| | FRINGE BENEFITS | 14.40 |

HEAVY HIGHWAY CLASS A: A-frame winch truck, auto patrol, backfiller, batcher plant, bituminous paver, bituminous transfer machine, all types of boom cats, bulldozer, cableway, carry-all scoop, carry deck crane, central compressor plant operator, clamshell, concrete mixer (21 cu. ft. or over), concrete paver, truck-mounted concrete pump, core drills, crane, crusher plant, derrick, derrick boat, ditching and trenching machine, dragline, dredge operator, dredge engineer, earth movers, elevating grader and all types of loaders, grade-all, guries, heavy equipment robotics operator/mechanic, high lift, hoe-type machine, hoist (two or more drums), hoisting engine (two or more drums), horizontal directional drill operator, hydraulic boom truck, hydrocrane, hyster, KeCal loader, Letourneau, Locomotive, mechanic, mechanically operated laser screed, mechanic welder, mucking machine, motor scraper, orange peel bucket, piledriver, power blade, pumpcrete push doxer, rock spreader attached to equipment, all rotary drills, roller (bituminous), scarifier, scoopmobile, shovel, side boom, subgrader, tallboom, telescoping type forklift, tow or push boat, tower cranes (French, German and other types) tractor shovel and truck crane, tunnel mining machines including moles, shields, or similar types of tunnel mining equipment, self propelled modular transporter, hydro excavator, micro piling machine, remote controlled demolition equipment, milling machine, track hoe, rubber tire back hoe, reclaimer/stabilizer:

| | | |
|-----------------|-----------------|---------|
| HEAVY & HIGHWAY | BASE RATE | \$29.95 |
| | FRINGE BENEFITS | 14.40 |

HEAVY HIGHWAY CLASS B: All air compressors (over 900 cu. ft. per min.), bituminous mixer, boom type tamping machine, bull float, concrete mixer (under 21 cu. ft.), dredge engineer, electric vibrator compactor/self-propelled compactor, elevator (one drum or buck hoist), elevator (regardless of ownership when used to hoist building material), finish machine, firemen, flexplane, forklift (regardless of lift height), form grader, hoist (one drum), joint sealing machine, mechanic helper, outboard motor boat, power sweeper (riding type), roller (rock), ross carrier, skid mounted or trailer mounted concrete pumps, skid steer machine with all attachments, switchman or brakeman, throttle valve man, Tract air and road widening trencher, tractor (50 HP and over), truck crane oiler, tugger, welding machine, well points, and

whirley oiler, water pull/water truck when used for compacting:

| | | |
|-----------------|-----------------|---------|
| HEAVY & HIGHWAY | BASE RATE | \$27.26 |
| | FRINGE BENEFITS | 14.40 |

HEAVY HIGHWAY CLASS B2: Greaser on grease facilities servicing heavy equipment, all off road material handling equipment, including articulating dump trucks:

| | | |
|-----------------|-----------------|---------|
| HEAVY & HIGHWAY | BASE RATE | \$27.68 |
| | FRINGE BENEFITS | 14.40 |

HEAVY HIGHWAY CLASS C: Bituminous distributor, burlap and curing machine, caisson drill and core drill helper (track or skid mounted), cement gun, concrete saw, conveyor, deckhand oiler, grout pump, hydraulic post driver, hydro seeder, mud jack, oiler, paving joint machine, power form handling equipment, pump, roller (earth), steermen, tamping machine, tractors (under 50 H.P.) and vibrator:

| | | |
|-----------------|-----------------|---------|
| HEAVY & HIGHWAY | BASE RATE | \$26.96 |
| | FRINGE BENEFITS | 14.40 |

**Operators on cranes with booms one hundred fifty feet (150') and over including jib shall receive \$.50 above base rate.

PAINTERS:

Brush, roller & paperhanger:

| | |
|-----------------|---------|
| BASE RATE | \$17.87 |
| FRINGE BENEFITS | 9.10 |

Spray, sandblast, waterblast (4000+ PSI), fireproofing & lead abatement:

| | |
|-----------------|---------|
| BASE RATE | \$18.37 |
| FRINGE BENEFITS | 9.10 |

PLASTERERS:

| | |
|-----------------|---------|
| BASE RATE | \$20.65 |
| FRINGE BENEFITS | 5.85 |

PLUMBERS & PIPEFITTERS:

| | |
|-----------------|---------|
| BASE RATE | \$31.95 |
| FRINGE BENEFITS | 17.36 |

ROOFERS: (Excluding Metal Roofs)

| | |
|-----------------|---------|
| BASE RATE | \$22.03 |
| FRINGE BENEFITS | 9.10 |

SHEETMETAL WORKERS: (Including Metal Roofs)

| | |
|-----------------|---------|
| BASE RATE | \$28.00 |
| FRINGE BENEFITS | 13.59 |

SPRINKLER FITTERS:

| | |
|-----------------|---------|
| BASE RATE | \$31.35 |
| FRINGE BENEFITS | 17.87 |

TRUCK DRIVERS / BUILDING:

Truck Helper and Warehouseman:

| | | |
|----------|------------------|---------|
| BUILDING | BASE RATE | \$19.05 |
| | *FRINGE BENEFITS | 11.08 |

Driver - 3 tons and under, Greaser, Tire Changer and Mechanic Helper:

| | | |
|----------|------------------|---------|
| BUILDING | BASE RATE | \$19.17 |
| | *FRINGE BENEFITS | 11.08 |

Driver - over 3 tons, Drivers, Semi-Trailer or Pole Trailer; Dump Trucks, Tandem Axle; Farm Tractor when used to pull building material or equipment:

| | | |
|----------|------------------|---------|
| BUILDING | BASE RATE | \$19.28 |
| | *FRINGE BENEFITS | 11.08 |

Drivers, Concrete Mixer Trucks (all types, hauling on job sites only); Truck Mechanics:

| | | |
|----------|------------------|---------|
| BUILDING | BASE RATE | \$19.35 |
| | *FRINGE BENEFITS | 11.08 |

Drivers, Euclid and other Heavy Earth Moving Equipment and Low Boy, Winch Truck and A-Frame Truck and Monorail Truck when used to transport building materials, Forklift Truck when used inside warehouse or storage area:

| | | |
|----------|------------------|---------|
| BUILDING | BASE RATE | \$19.45 |
| | *FRINGE BENEFITS | 11.08 |

BUILDING TRUCK DRIVERS: Drivers working or hauling to or from any hazardous or toxic site will add \$4.00 to base rate.
***TRUCK DRIVER FRINGE BENEFITS** apply to employees who have been employed a minimum of twenty (20) calendar days

within any ninety (90) consecutive day period of that employer.

TRUCK DRIVERS / HEAVY HIGHWAY:

| | | |
|--|-----------------|---------|
| Mobile batch truck helper: HEAVY & HIGHWAY | BASE RATE | \$16.57 |
| | FRINGE BENEFITS | 7.34 |

Greaser, tire changer and mechanic helper:

| | | |
|-----------------|-----------------|---------|
| HEAVY & HIGHWAY | BASE RATE | \$16.68 |
| | FRINGE BENEFITS | 7.34 |

Single axle dump, flatbed, semi-trailer or pole trailer when used to pull building materials and equipment, tandem axle dump, distributor and truck mechanic:

| | | |
|-----------------|-----------------|---------|
| HEAVY & HIGHWAY | BASE RATE | \$16.86 |
| | FRINGE BENEFITS | 7.34 |

Euclid and other heavy earthmoving equipment and lowboy, articulator cat, 5-axle vehicle, winch and A-frame when used in transporting materials, ross carrier, forklift when used to transport building materials, and pavement breaker:

| | | |
|-----------------|-----------------|---------|
| HEAVY & HIGHWAY | BASE RATE | \$16.96 |
| | FRINGE BENEFITS | 7.34 |

END OF DOCUMENT
CR 2-012
DECEMBER 22, 2015

END OF SECTION

PART VI

CONTRACT AGREEMENT

INDEX

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

PART VI

CONTRACT AGREEMENT

THIS AGREEMENT, made on the _____ day of _____, 20____, by and between Lexington-Fayette Urban County Government, acting herein called "OWNER" and Conn Hurst Inc doing business as a corporation located in the City of Wallingford, County of Fleming, and State of Kentucky, hereinafter called "CONTRACTOR."

WITNESSETH: That the CONTRACTOR and the OWNER in consideration of nine hundred sixty-nine thousand nine hundred eighty-five Dollars ninety-seven Cents (\$ 969,985.97) quoted in the proposal by the CONTRACTOR, dated January 18, 2019, 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 Integrated Engineering, PLLC for the Meadows-Northland-Arlington Neighborhood Improvement Project, Phases 6A-1.

2. TIME OF COMPLETION

The time period estimated and authorized by the OWNER for the proper execution of the Work by the Contract, in full, is hereby fixed as three hundred and sixty (360) calendar days. The time shall begin ten (10) days after the date specified in the Notice to Proceed with the Work.

3. ISSUANCE OF WORK ORDERS

Notice to begin Work will be given in whole or for part of the Work as determined by the OWNER pending the availability of funds or other considerations. 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 ninety (90) days after completion of the Work, provided the Work be then fully completed and the Contract fully accepted.

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

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

7. THE CONTRACT DOCUMENTS

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

8. 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.

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

Lexington-Fayette Urban County Government.

Lexington, Kentucky

(Owner)

Kimberly Storton

BY:

MAYOR

(Title)

Connhurst, LLC.

(Contractor)

Studdo R. Com

BY:

Vice President

(Title)

899 Wilson Run Rd. Wallingford Ky 41093

(Address and Zip Code)

(Seal)

ATTEST:

[Signature]
Clerk of the Urban County Council

(Witness)

[Signature]

(Seal)

(Secretary)

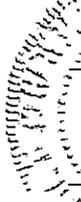
Donna R. Com

(Witness)

Notary 3-10-23

IMPORTANT: *Strike out any inapplicable terms.

Secretary of the Owner should attest. If the CONTRACTOR is corporation, Secretary should attest. Give proper title of each person-executing Contract.



Performance Bond

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

CONTRACTOR:

(Name, legal status and address)

ConnHurst, LLC
3534 State Highway 1626
Olive Hill, KY 41164

SURETY:

(Name, legal status and principal place of business)

Old Republic Insurance Company
300 E. Business Way, Suite 200
Cincinnati, OH 45241

OWNER:

(Name, legal status and address)

Lexington Fayette Urban County Government
Division of Central Purchasing
200 East Main, Third Floor, Rm 338
Lexington, KY 40507

CONSTRUCTION CONTRACT

Date: March 21, 2019

Amount: \$969,985.97

Description: Bid #156-2018 Meadows Northland Arlington Neighborhood Improvement Project
(Name and location) Phase 6A-1

BOND

Date: March 21, 2019

(Not earlier than Construction Contract Date)

Amount: \$969,985.97

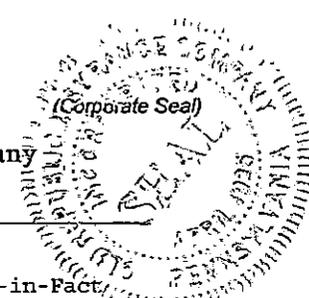
Modifications to this Bond: None See Section 16

CONTRACTOR AS PRINCIPAL

Company:  ConnHurst, LLC (Corporate Seal)

Signature: Freddie R Conn V.p.
Name and Title:

SURETY

Company:  Old Republic Insurance Company (Corporate Seal)

Signature: [Signature]
Name and Title:
Thomas H. Bottoms, Jr., Attorney-in-Fact

(Any additional signatures appear on the last page of this Performance Bond.)

(FOR INFORMATION ONLY--Name, address and telephone)

AGENT or BROKER:

Peoples Insurance Agency, LLC
101 5th Avenue
Huntington, WV 25701

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party)

1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

3.1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

3.2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

3.3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

7.2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and

7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

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

14 Definitions

14.1 Balance of the Contract Price. The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

14.2 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3 Contractor Default. Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

16 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

Company: _____ (Corporate Seal)

Signature: _____
Name and Title:
Address:

SURETY

Company: _____ (Corporate Seal)

Signature: _____
Name and Title:
Address:

Payment Bond

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

CONTRACTOR:

(Name, legal status and address)

ConnHurst, LLC
3534 State Highway 1626
Olive Hill, KY 41164

SURETY:

(Name, legal status and principal place of business)

Old Republic Insurance Company
300 E. Business Way, Suite 200
Cincinnati, OH 45241

OWNER:

(Name, legal status and address)

Lexington-Fayette Urban County Government
Division of Central Purchasing
200 East Main, Third Floor, Rm 338
Lexington, KY 40507

CONSTRUCTION CONTRACT

Date: March 21, 2019

Amount: \$969,985.97

Description: Bid #156-2018 Meadows Northland Arlington Neighborhood Improvement Project
(Name and location) Phase 6A-1

BOND

Date: March 21, 2019

(Not earlier than Construction Contract Date)

Amount: \$969,985.97

Modifications to this Bond: None See Section 18

CONTRACTOR AS PRINCIPAL

Company: *(Corporate Seal)*

ConnHurst, LLC

Signature: *Gregory R. Conn V.P.*
Name and Title:

SURETY

Company: *(Corporate Seal)*

Old Republic Insurance Company

Signature: *[Signature]*
Name and Title:
Thomas H. Bottoms, Jr., Attorney-in-Fact

(Any additional signatures appear on the last page of this Performance Bond.)

(FOR INFORMATION ONLY--Name, address and telephone)

AGENT or BROKER:

Peoples Insurance Agency, LLC
101 5th Avenue
Huntington, WV 25701

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party)

The Company executing this bond vouches that this document conforms to American Institute of Architects Document A312 - 2010 Edition

1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

3 If there is no owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

5.1 Claimants, who do not have a direct contract with the Contractor,

.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and

.2 have sent a Claim to the Surety (at the address described in Section 13).

5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5. 1. 1.

7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

7.2 Pay or arrange for payment of any undisputed amounts.

7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to

undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

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

15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

16 Definitions

16.1 Claim. A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any

individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

16.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

16.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

18 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

Company:

(Corporate Seal)

SURETY

Company:

(Corporate Seal)

Signature: _____

Name and Title:

Address:

Signature: _____

Name and Title:

Address:

The Company executing this bond vouches that this document conforms to American Institute of Architects Document A312 - 2010 Edition

OLD REPUBLIC INSURANCE COMPANY

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That OLD REPUBLIC INSURANCE COMPANY, a Pennsylvania stock insurance corporation, does make, constitute and appoint: CLARENCE C. MASSEY, THOMAS H BOTTOMS JR, OF HUNTINGTON, WV

its true and lawful Attorney(s)-in-Fact, with full power and authority, not exceeding \$50,000,000, for and on behalf of the Company as surety, to execute and deliver and affix the seal of the Company thereto (if a seal is required), bonds, undertakings, recognizances or other written obligations in the nature thereof, (other than self-insurance workers compensation bonds guaranteeing payment of benefits, asbestos abatement contract bonds, waste management bonds, hazardous waste remediation bonds or black lung bonds), as follows:

ALL WRITTEN INSTRUMENTS IN AN AMOUNT NOT TO EXCEED TEN MILLION DOLLARS (\$10,000,000) FOR ANY SINGLE OBLIGATION

and to bind OLD REPUBLIC INSURANCE COMPANY thereby, and all of the acts of said Attorneys-in-Fact, pursuant to these presents, are ratified and confirmed. This document is not valid unless printed on colored background and is multi-colored. This appointment is made under and by authority of the board of directors at a meeting held on March 14, 2014. This Power of Attorney is signed and sealed by facsimile under and by the authority of the following resolutions adopted by the board of directors of the OLD REPUBLIC INSURANCE COMPANY on March 14, 2014:

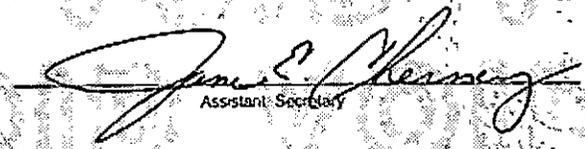
RESOLVED FURTHER, that the chairman, president or any vice president of the Company's surety division, in conjunction with the secretary or any assistant secretary of the Company, be and hereby are authorized and directed to execute and deliver, to such persons as such officers of the Company may deem appropriate, Powers of Attorney in the form presented to, and attached to the minutes of this meeting, authorizing such persons to execute and deliver and affix the seal of the Company to bonds, undertakings, recognizances, and suretyship obligations of all kinds, other than bail bonds, bank depository bonds, mortgage deficiency bonds, mortgage guaranty bonds, guarantees of installment paper and note guaranty bonds. The said officers may revoke any Power of Attorney previously granted to any such person. The authority of any Power of Attorney granted by any such officer of the Company as aforesaid shall not exceed fifty million dollars (\$50,000,000.00), except (a) bonds required to be filed as open penalty bonds, and (b) bonds filed with any court or governmental authority requiring an unlimited penalty in bonds filed in that court.

RESOLVED FURTHER, that any bond, undertaking, recognizance, or suretyship obligation shall be valid and binding upon the Company (i) when signed by the chairman, president or any vice president of the Company's surety division and attested and sealed (if a seal be required) by any secretary or assistant secretary, or (ii) when signed by a duly authorized Attorney-in-Fact and sealed with the seal of the Company (if a seal be required).

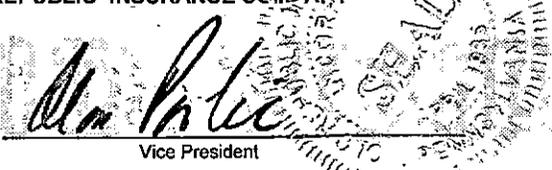
RESOLVED FURTHER, that the signature of any officer designated above, and the seal of the Company, may be affixed by facsimile to any Power of Attorney or certification thereof authorizing the execution and delivery of any bond, undertaking, recognizance, or other suretyship obligations of the Company, and such signature and seal when so used shall have the same force and effect as though manually affixed.

IN WITNESS WHEREOF, OLD REPUBLIC INSURANCE COMPANY has caused these presents to be signed by its proper officer, and its corporate seal to be affixed this 10TH day of APRIL, 2017.

OLD REPUBLIC INSURANCE COMPANY


Assistant Secretary

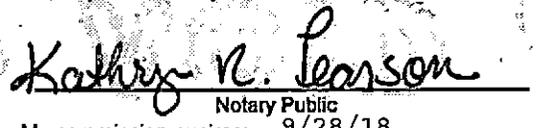



Vice President

STATE OF WISCONSIN, COUNTY OF WAUKESHA - SS

On this 10TH day of APRIL, 2017, personally came before me, ALAN PAVLIC and JANE E CHERNEY to me known to be the individuals and officers of the OLD REPUBLIC INSURANCE COMPANY who executed the above instrument, and they each acknowledged the execution of the same, and being by me duly sworn, did severally depose and say, that they are said officers of the corporation aforesaid, and that the seal affixed to the above instrument is the seal of the corporation, and that said corporate seal and their signatures as such officers were duly affixed and subscribed to the said instrument by the authority of the board of directors of said organization.




Notary Public

My commission expires: 9/28/18
(Expiration of notary commission does not invalidate this instrument)

CERTIFICATE

I, the undersigned, assistant secretary of the OLD REPUBLIC INSURANCE COMPANY, a Pennsylvania corporation, CERTIFY that the foregoing and attached Power of Attorney remains in full force and has not been revoked; and furthermore, that the Resolutions of the board of directors set forth in the Power of Attorney, are now in force.

27-0377



Signed and sealed at the City of Brookfield, WI this 21st day of March, 2019


Assistant Secretary

PART VIII

TECHNICAL SPECIFICATIONS

INDEX

| | |
|------------|--|
| SECTION 1 | GENERAL PROVISIONS |
| SECTION 2 | UTILITY COORDINATION |
| SECTION 3 | CLEARING AND GRUBBING |
| SECTION 4 | CONSTRUCTION STAKING |
| SECTION 5 | EXCAVATION AND GRADING |
| SECTION 6 | CONCRETE AND REINFORCING STEEL |
| SECTION 7 | RECONSTRUCTING AND ADJUSTING MANHOLES |
| SECTION 8 | ASPHALT PAVEMENTS |
| SECTION 9 | REMOVE AND RESET FENCE OR REMOVE AND REPLACE FENCE |
| SECTION 10 | LANDSCAPING |
| SECTION 11 | STORM DRAINAGE PIPEWORK |
| SECTION 12 | STORM STRUCTURES |
| SECTION 13 | MANHOLES |
| SECTION 14 | MAINTENANCE OF TRAFFIC |
| SECTION 15 | SANITARY SEWER |
| SECTION 16 | ROADWAY AND DRAINAGE EXCAVATION |
| SECTION 17 | EROSION AND SEDIMENT CONTROL |
| SECTION 18 | CRUSHED LIMESTONE |
| SECTION 19 | PROJECT SIGN |
| SECTION 20 | FINAL CLEANUP |
| SECTION 21 | GEOTEXTILE CONSTRUCTION |
| SECTION 22 | GEOGRID CONSTRUCTION |
| SECTION 23 | CLEANING AND INTERNAL INSPECTION OF STORM SEWER PIPE: CCTV |
| SECTION 24 | CLEANING AND INTERNAL INSPECTION OF SANITARY SEWER: CCTV |
| APPENDIX A | LFUCG STANDARD DETAIL DRAWINGS |
| APPENDIX B | GEOTECHNICAL REPORT |

TECHNICAL SPECIFICATIONS

SECTION 1 - GENERAL PROVISIONS

1.1 KENTUCKY DEPARTMENT OF HIGHWAYS - SPECIFICATIONS

Except as 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 Transportation Cabinet/ Department of Highways Standard Specifications for Road and Bridge Construction and all current revisions.

With regard to the incorporation Standard Specifications of KYTC 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 KYTC 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 KYTC 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.)

1.2 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 |
| KYTC | Kentucky Department of Highways, "The Standard Specifications for Road and Bridge Construction", Current Edition |

1.3 SCOPE

It is the intent that the CONTRACTOR, in accordance with the Plans, Specifications and the Contract Documents, and other mutually acknowledged informational materials shall perform everything required to be performed and to furnish a complete, fully operating work, and shall provide and furnish all labor, materials, necessary tools, expendable and non-expendable equipment and all transportation services required for the entire, proper, substantial completion of the Work, the cost of all of which shall be included in his bid. The CONTRACTOR shall make all requisite excavations and foundation preparation for constructing sidewalks, incidental drainage structures, and retaining walls. The CONTRACTOR shall where required, excavate and prepare subgrade for pavement widening and replacement. The CONTRACTOR shall provide all signs, lighting, barricades,

temporary construction fencing, flagmen and watchmen and make provisions necessary to protect and maintain buildings, fences, trees, shrubs, poles, existing utility fixtures, water courses, 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.

1.4 CONTRACTOR'S FACILITIES

1.4.1 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.

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

1.5 CONTRACTOR'S FIELD OFFICE

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

1.6 UTILITY COORDINATION

Refer to Technical Specification Section 2 – Utility Coordination for the Contractor's responsibilities regarding existing utilities and coordination of work.

1.8 TESTING

From time to time during the progress of the Work the ENGINEER may require that testing be performed to determine that 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.

1.8.1 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.

1.8.2 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.

1.9 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.

1.10 PROOF OF COMPLIANCE

Whenever the Contract Documents require that a product be in accordance with Federal Specifications, ASTM Designations, ANSI Specifications, and 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.

1.11 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.

1.12 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.

1.13 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.

1.14 WORKING HOURS

All Work on this Project shall 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.

1.15 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 shall be replaced at the CONTRACTOR'S expense.

1.16 PROPERTY CONSIDERATION

Materials having a salvage value shall remain the property of the OWNER. Salvageable materials 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.

1.17 BLASTING

No blasting allowed.

1.18 HAZARDOUS MATERIAL - GAS LINES

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

1.19 DIVERSION OF STORM WATER

Appropriate measures must be taken to sandbag the necessary manholes and to pump drainage around the area under construction. 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.

1.20 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. No surcharge of manholes will be allowed.

Sanitary Sewer lines within the project area are subject to considerable inflow and infiltration of groundwater during or following rain events. CONTRACTOR should consider these periods of heavy flow when devising his sewer service maintenance plan and construction sequencing.

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.

1.21 PROJECT SIGN

Refer to TS Section 19 – Project Sign. Refer to Bid Schedule for number of signs.

1.22 EDGE KEY

Where it is necessary to remove existing pavement, the CONTRACTOR will be required to furnish a neat edge along the pavement, obtained by sawing a neat line approximately one inch (1") deep in the surface before breaking the adjacent pavement away.

No direct payment will be made for Edge Key as this is considered incidental to the item for which the pavement removal is required.

TECHNICAL SPECIFICATIONS

SECTION 2 - UTILITY COORDINATION

2.1 SCOPE

THE CONTRACTOR shall be responsible for all utility coordination associated with any existing and / or relocated utilities within the project corridor.

A. The Contractor shall allow the Owner or his/her agents, and other project Contractors or their agents, to enter upon the work for the purpose of constructing, operating, maintaining, removing, repairing, altering, or replacing such pipes, sewers, conduits, manholes, wires, poles, or other structures and appliances which may be required to be installed at or in the work. The Contractor shall cooperate with all aforesaid parties and shall allow reasonable provisions for the prosecution of any other work by the Owner, or others, to be done in connection with his work, or in connection with normal use of the facilities.

B. Each Contractor shall cooperate fully with the Owner, the Engineer, and all other Contractors employed on the Work, to effect proper coordination and progress to complete the project on schedule and in proper sequence. Insofar as possible, decisions of all kinds required from the Engineer shall be anticipated by the Contractor to provide ample time for inspection, or the preparation of instructions.

C. The Contractor, after consultation with all affected utility companies, will establish a schedule for completion of utility relocation and it shall be part of PART IV of the General Conditions, Article 2.6 Submittal of Schedules. Neither the Utility coordination nor the Contractor's work to complete the project shall exceed the contract time as stated in PART VI of the Contract Agreement, Section 2 Time of Completion. Adjustments to the schedule shall be submitted to the Owner in writing.

D. Each Contractor shall assume full responsibility for the correlation of all parts of his/her work with that of other Contractors. Each Contractor's superintendent shall correlate all work with other Contractors in the laying out of work. Each Contractor shall lay out his/her own work in accordance with the Drawings, Specifications, and instructions of latest issue and with due regard to the work of other Contractors.

E. The Contractor shall be responsible for the preservation and protection of property adjacent to the work site against damage or injury as a result of his/her operations under this Contract. Any damage or injury occurring on account of any act, omission or neglect on the part of the Contractor shall be restored in a proper and satisfactory manner or replaced by and at the expense of the Contractor to an equal or superior condition than previously existed.

F. The Contractor shall comply promptly with such safety regulations as may be prescribed by the Owner or the local authorities having jurisdiction and shall, when so

directed, properly correct any unsafe conditions created by, or unsafe practices on the part of, his/her employees. In the event of the Contractor's failure to comply, the Owner may take the necessary measures to correct the conditions or practices complained of, and all costs thereof will be deducted from any monies due the Contractor. Failure of the Engineer to direct the correction of unsafe conditions or practices shall not relieve the Contractor of his responsibility hereunder.

G. In the event of any claims for damage or alleged damage to property as a result of work under this Contract, the Contractor shall be responsible for all costs in connection with the settlement of or defense against such claims. Prior to commencement of work in the vicinity of property adjacent to the work site, the Contractor, at his/her own expense, shall take such surveys as may be necessary to establish the existing condition of the property. Before final payment can be made, the Contractor shall furnish satisfactory evidence that all claims for damage have been legally settled or sufficient funds to cover such claims have been placed in escrow, or that an adequate bond to cover such claims has been obtained.

H. Monthly general progress utility coordination meetings will be held at regularly scheduled times convenient for all parties involved. These meetings are in addition to specific meetings held for other purposes, such as special pre-installation meetings. Representation at each meeting by every party currently involved in coordination or planning for the work of the entire project is requested. Meetings shall be conducted in a manner that will resolve coordination problems. Results of the meetings shall be recorded and copies distributed to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

2.2 EXISTING UTILITIES AND STRUCTURES

A. The term existing utilities shall be deemed to refer to both publicly-owned and privately-owned utilities such as electric power and lighting, telephone, water, gas, storm drains, sanitary sewers and all appurtenant structures.

B. Where existing utilities and structures are indicated on the Drawings, it shall be understood that all of the existing utilities and structures affecting the work may not be shown and that the locations of those shown are approximate only. It shall be the responsibility of the Contractor to ascertain the actual extent and exact location of existing utilities and structures. In every instance, the Contractor shall notify the proper authority having jurisdiction and obtain all necessary directions and approvals before performing any work in the vicinity of existing utilities.

C. Prior to beginning any excavation work, the Contractor shall, through field investigations, determine any conflicts or interferences between existing utilities and new utilities to be constructed under this project. This determination shall be based on the actual locations, elevations, slopes, etc., of existing utilities as determined in the field investigations, and locations, elevation, slope, or other information of new utilities as shown on the Drawings. If interference exists, the Contractor shall bring it to the attention of the Engineer

as soon as possible. If the Engineer agrees that an interference exists, he/she shall develop a plan to address the interference as required and obtain the Owner's approval. Additional costs to the Contractor for this change shall be processed through a Change Order as detailed elsewhere in these Contract Documents. In the event the Contractor fails to bring a potential conflict or interference to the attention of the Engineer prior to beginning excavation work, any actual conflict or interference which does arise during the Project shall be corrected by the Contractor, as directed by the Engineer, at no additional expense to the Owner.

D. The work shall be carried out in a manner to prevent disruption of existing services and to avoid damage to the existing utilities. Temporary connections shall be provided, as required, to insure no interruption of existing services. Any damage resulting from the work of this Contract shall be promptly repaired by the Contractor at his/her own expense in a manner approved by the Engineer and further subject to the requirements of any authority having jurisdiction. Where it is required by the authority having jurisdiction that they perform their own repairs or have them done by others, the Contractor shall be responsible for all costs thereof.

E. Where excavations by the Contractor require any utility lines or appurtenant structures to be temporarily supported and otherwise protected during the construction work, such support and protection shall be provided by the Contractor. All such work shall be performed in a manner satisfactory to the Engineer and the respective authority having jurisdiction over such work. In the event the Contractor fails to provide proper support or protection to any existing utility, the Engineer may, at his discretion, have the respective authority to provide such support or protection as may be necessary to insure the safety of such utility, and the costs of such measures shall be paid by the Contractor.

2.3 BASIS OF PAYMENT

A. Repair or replacement of utility components or systems caused by or occurring through any act, omission or neglect on the part of the Contractor, or any other condition as noted above, shall be restored or replaced in a satisfactory manner at the Contractor's expense and is incidental to the work of this project.

TECHNICAL SPECIFICATIONS

SECTION 3 - CLEARING & GRUBBING

3.1 SCOPE

This item includes the Clearing & Grubbing in accordance with KYTC Standard Specification 202 of any trees, stumps, brush and bushes, existing concrete sidewalks, cement concrete and/or wet stone masonry, pipe removal, steps, fences, walls, manholes and structures within the disturbed limits. This includes removal of all pavements, curbs, gutters, concrete and bituminous driveways and concrete sidewalks that are to be replaced. Also included is the proper removal and disposal of such materials in a manner acceptable to the ENGINEER and in a manner not detrimental to the inhabitants of the area. The CONTRACTOR will be responsible for determining and complying with local ordinances regarding disposal and/or burning of such materials. 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 & Grubbing shall not commence without approval of the ENGINEER.

Work shall not be performed outside the Disturbed Limits or existing vegetation outside these 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.

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 and re-use same on his private property, the CONTRACTOR shall carefully remove and store on the property owner's property for his use after construction is completed. Payment for this work is to be included in the unit bid price for Clearing & Grubbing.

3.2 MEASUREMENT AND PAYMENT

Payment for Clearing & Grubbing will be a Lump Sum bid price which payment will be full compensation for all work required by this section.

TECHNICAL SPECIFICATIONS

SECTION 4 - CONSTRUCTION STAKING

4.1 SCOPE

The CONTRACTOR will furnish and be responsible for all staking, including the initial staking. The CONTRACTOR shall bear the cost of all staking necessary to control and complete the work according to the specifications to the lines and grades shown on the plans.

The survey centerline has been previously established. Should, prior to beginning work on this project, part or all of the centerline be destroyed, it will be the CONTRACTOR'S responsibility to re-establish this centerline from the reference points shown on the plans.

It will be the CONTRACTOR'S responsibility to establish all office projection centerlines shown on the plans. Should, during the course of construction of this project, any construction stakes be destroyed by others, it will be the CONTRACTOR'S responsibility to reset the stakes at no additional cost to the OWNER.

The CONTRACTOR'S staking party shall be under the general supervision of a **registered land surveyor**. It shall, be definitely understood that supervision of the resetting of construction staking is solely the responsibility of the CONTRACTOR and any errors or inaccuracies resulting from the operations of the construction staking party shall be corrected at no cost to the OWNER.

It will be the OWNER'S responsibility to make all measurements for determining final quantities to be used for basis of final payment on items of work.

4.2 MEASUREMENT AND PAYMENT

Payment for Construction Staking will be made on a Lump Sum unit bid price, which payment shall be full compensation for all work required by this section.

TECHNICAL SPECIFICATIONS

SECTION 5 - EXCAVATION & GRADING

5.1 SCOPE

The Work shall consist of the required removal and proper utilization or disposal of all excavated materials, and the shaping and finishing to the required lines and grades as shown on the plans. Excavation and grading will only be associated with sections 10 and 14.

5.2 SUMMARY

This Section includes all work; labor, machinery, disposal and replacement of unsuitable soil, existing pavement, removal of rock and any materials encountered to plan bottom depth for all earthwork related items. These items shall include, but are not limited to, earthwork procedures for drives, parking lots, pavements, building foundations, footings, caissons, building slabs, utility trenches, etc. No change in the contract price will be considered for any materials encountered and/or required to be removed, or replaced to achieve the earthwork requirements. The following is a list of the items which are included as a part of this work:

1. Preparing subgrades for, walks, pavements, lawns, and plantings.
2. Subbase course for concrete walks and pavements.
4. Base course for asphalt paving.
5. Subsurface drainage backfill for walls and trenches.
6. Excavating and backfilling trenches within roadway right-of-ways'.
7. Excavating and backfilling trenches for buried gas, water and electrical utilities
8. Excavating and backfilling for storm drainage and sanitary sewer (trench rock excavation is incidental to storm sewer installation.)
9. Placement of topsoil as shown on the plans.

5.3 DEFINITIONS

- A. Backfill: Soil materials used to fill an excavation.
 1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
 2. Final Backfill: Backfill placed over initial backfill to fill a trench.
- B. Base Course: Layer placed between the subbase course and asphalt paving.
- C. Bedding Course: Layer placed over the excavated subgrade in a trench before laying pipe.
- D. Borrow: Satisfactory soil imported from off-site for use as fill or backfill.

- E. Drainage Course: Layer supporting slab-on-grade used to minimize capillary flow of pore water.
- F. Excavation: Removal of material encountered above subgrade elevations and subsequent disposal of materials removed.
 - 1. Additional Excavation: Excavation below subgrade elevations as directed by Engineer.
 - 2. Bulk Excavation: Excavations more than 10 feet (3 m) in width and pits more than 20 feet (6 m) in either length or width.
 - 3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated dimensions without direction by Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be without additional compensation.
- G. Fill: Soil materials used to raise existing grades.
- H. Rock: Rock material in beds, ledges, unstratified masses, and conglomerate deposits and boulders of rock material exceeding 1 cu. yd. (0.76 cu. m) for bulk excavation or 3/4 cu. yd. (0.57 cu. m) for footing, trench, and pit excavation that cannot be removed by rock excavating equipment equivalent to the following in size and performance ratings, without systematic drilling, ram hammering, ripping, or blasting, when permitted:
 - 1. Excavation of Footings, Trenches, and Pits: Late-model, track-mounted hydraulic excavator; equipped with a 42-inch- (1065-mm-) wide, short-tip-radius rock bucket; rated at not less than 120-hp (89-kW) flywheel power with bucket-curling force of not less than 25,000 lbf (111 kN) and stick-crowd force of not less than 18,700 lbf (83 kN); measured according to SAE J-1179.
 - 2. Bulk Excavation: Late-model, track-mounted loader; rated at not less than 210-hp (157-kW) flywheel power and developing a minimum of 45,000-lbf (200-kN) breakout force; measured according to SAE J-732.
- a) I. Topsoil: ASTM D 5268, pH range of 5.5 to 7, 4 percent organic material minimum, free of stones 1 inch (25 mm) or larger in any dimension, and other extraneous materials harmful to plant growth.
 - (1) Topsoil Source: Reuse surface soil stockpiled on the site. Verify suitability of surface soil to produce a topsoil meeting requirements and amend when necessary. Supplement with imported topsoil when quantities are insufficient. Clean topsoil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful to plant growth. Retain subparagraph above or below when satisfactory topsoil is not available on-site, or retain both as Contractor's option.
 - (2) Topsoil Source: Amend existing surface soil to produce topsoil. Supplement with imported topsoil when required.

- J. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- K. Subbase Course: Layer placed between the subgrade and base course for asphalt paving, or layer placed between the subgrade and a concrete pavement or walk.
- L. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.
- M. Utilities include on-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

5.4 SUBMITTALS

- A. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated:
 - 1. Classification according to ASTM D 2487 of each on-site or borrow soil material proposed for fill and backfill.
 - 2. Laboratory compaction curve according to ASTM D 698 for each on-site or borrow soil material proposed for fill and backfill.
 - 3. All reports are to be signed by a Professional Engineer with licences to practice in the state of this project.

5.5 PROJECT CONDITIONS

- A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Owner or Engineer and then only after arranging to provide temporary utility services according to requirements indicated:
 - 1. Notify Owner not less than two days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without Owner's written permission.
 - 3. Contact utility-locator service for area where Project is located before excavating.
 - 4. Locate existing underground utilities in areas of excavation work. If utilities are indicated to remain in place, provide adequate means of support and protection during earthwork operations.
 - 5. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult the utility owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to the utility owner's satisfaction at no cost to the Owner.
- B. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shut off services if lines are active.

5.6 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: ASTM D 2487 soil classification groups GW, GP, GM, SW, SP, GC, SC and SM, or a combination of these group symbols; free of rock or gravel larger than 3 inches (75 mm) in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
 - 1. CL and CH with a dry density above 100, a Liquid Limit less than 50 and a Plastic Index under 35 will also be considered satisfactory.
- C. Unsatisfactory Soils: ASTM D 2487 soil classification groups ML, MH, OL, OH, and PT, or a combination of these group symbols.
 - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
 - 2. CL and CH with a dry density below 100, a Liquid Limit greater than 50 and a Plastic Index greater than 35 will be considered for use only by recommendation by the Geotechnical Engineer. Additional requirements for use of these types of soil may be required.
- D. Backfill and Fill: Satisfactory soil materials. No shot rock may be used in the building area. Shot rock may be used on site as long as it is done in a manner which complies with the Rock Excavation Notes.
- E. Subbase: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch (38-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.
- F. Base: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 1-1/2-inch (38-mm) sieve and not more than 8 percent passing a No. 200 (0.075-mm) sieve.
- G. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch (38-mm) sieve and not more than 12 percent passing a No. 200 (0.075-mm) sieve.
- H. Bedding: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch (25-mm) sieve and not more than 8 percent passing a No. 200 (0.075-mm) sieve.

- I. Drainage Fill: Washed, narrowly graded mixture of crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch (38-mm) sieve and 0 to 5 percent passing a No. 8 (2.36-mm) sieve.
- J. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D 448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch (25-mm) sieve and 0 to 5 percent passing a No. 4 (4.75-mm) sieve.
- K. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

5.7 ACCESSORIES

- A. Detectable Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, minimum 6 inches (150 mm) wide and 4 mils (0.1 mm) thick, continuously inscribed with a description of utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches (750 mm) deep; colored as follows:
 - 1. Red: Electric.
 - 2. Yellow: Gas, oil, steam, and dangerous materials.
 - 3. Orange: Telephone and other communications.
 - 4. Blue: Water systems.
 - 5. Green: Sewer systems.
- B. Drainage Fabric: Nonwoven geotextile, specifically manufactured as a drainage geotextile; made from polyolefins, polyesters, or polyamides; and with the following minimum properties determined according to ASTM D 4759 and referenced standard test methods:
 - 1. Grab Tensile Strength: 110 lbf (490 N); ASTM D 4632.
 - 2. Tear Strength: 40 lbf (178 N); ASTM D 4533.
 - 3. Puncture Resistance: 50 lbf (222 N); ASTM D 4833.
 - 4. Water Flow Rate: 150 gpm per sq. ft. (100 L/s per sq. m); ASTM D 4491.
 - 5. Apparent Opening Size: No. 50 (0.3 mm); ASTM D 4751.
- C. Separation Fabric: Woven geotextile, specifically manufactured for use as a separation geotextile; made from polyolefins, polyesters, or polyamides; and with the following minimum properties determined according to ASTM D 4759 and referenced standard test methods:
 - 1. Grab Tensile Strength: 200 lbf (890 N); ASTM D 4632.
 - 2. Tear Strength: 75 lbf (333 N); ASTM D 4533.
 - 3. Puncture Resistance: 90 lbf (400 N); ASTM D 4833.
 - 4. Water Flow Rate: 4 gpm per sq. ft. (2.7 L/s per sq. m); ASTM D 4491.
 - 5. Apparent Opening Size: No. 30 (0.6 mm); ASTM D 4751.

5.8 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.
- C. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

5.9 DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
 - 1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.
 - 2. Pumps and other dewatering devices must utilize filters sufficient to remove silts and solids from water prior before sending it to the storm sewer system.

5.10 EXPLOSIVES

- A. Explosives: shall not be permitted.

5.11 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavation regardless of the character of surface and subsurface conditions encountered, including rock, soil materials, and obstructions.

If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials. Geotechnical information is provided, however the Contractor may conduct additional tests to alleviate anticipated unknowns at his desire and expense.

5.12 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch (25 mm). Extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
2. Excavation for Drainage Structures Basins, and Mechanical or Electrical Utility Structures: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch (25 mm). Do not disturb bottom of excavations intended for bearing surface.

5.13 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Excavate surfaces under walks and pavements to indicated plans, elevations, and grades.

5.14 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.
 1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.
- B. Excavate trenches to uniform widths to provide a working clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches (300 mm) higher than top of pipe or conduit, unless otherwise indicated.
 1. Clearance: 12 inches (300 mm) on each side of pipe or conduit.
- C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.
 1. For pipes and conduit less than 6 inches (150 mm) in nominal diameter and flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
 2. For pipes and conduit 6 inches (150 mm) or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe circumference. Fill depressions with tamped sand backfill.
 3. Excavate trenches 6 inches (150 mm) deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

5.15 APPROVAL OF SUBGRADE

- A. Notify Engineer when excavations have reached required subgrade.
- B. If Engineer determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

- C. Proof roll subgrade with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof roll wet or saturated subgrades.
- D. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Engineer.

5.16 STONE BRIDGING

- a) Scope. Where soft, undesirable soil material is encountered at or below the desired sub-grade elevation, undesirable material will be removed and/or bridged using #2 stone to develop a sufficient platform to support compaction of DGA. The depth and extent of the Work shall be determined based on conditions observed and performance of compaction equipment on subgrade. Work shall be as directed by the OWNER or ENGINEER.
- B. Requirements. Undesirable soil material shall be removed and disposed of by the CONTRACTOR. The #2 stone shall meet the requirements of KYTC Section 805. Stone will be dumped or shoved into place and walked-in until support is developed for heavy equipment. The ultimate test will be ability to provide an adequate compaction platform for the DGA base.
- C. Measurement and Payment. No direct measurements will be made. Payment for STONE BRIDGING will be based on weight tickets for #2 stone delivered and accepted for the Work. Payment will be at the bid unit price per ton for STONE BRIDGING, which shall be payment for all material, labor, plant, incidentals and operating costs necessary to construct and maintain STONE BRIDGING. Excavation, proof testing, and disposal of excavated material are incidental to STONE BRIDGING and will be included in the payment for STONE BRIDGING.

5.17 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill may be used when approved by Engineer.
 - 1. Fill unauthorized excavations under other construction or utility pipe as directed by Engineer.

5.18 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow materials and satisfactory excavated soil materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

5.19 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
 - 1. Surveying locations of underground utilities for record documents.
 - 2. Inspecting and testing underground utilities.
 - 3. Removing concrete formwork.
 - 4. Removing trash and debris.
 - 5. Removing temporary shoring and bracing, and sheeting.
 - 6. Installing permanent or temporary horizontal bracing on horizontally supported walls.

5.20 UTILITY TRENCH BACKFILL

- A. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- B. Backfill trenches excavated under footings and within 18 inches (450 mm) of bottom of footings; fill with concrete to elevation of bottom of footings.
- C. Provide 4-inch- (100-mm-) thick, concrete-base slab support for piping or conduit less than 30 inches (750 mm) below surface of roadways. After installing and testing, completely encase piping or conduit in a minimum of 4 inches (100 mm) of concrete before backfilling or placing roadway subbase.
- D. Place and compact initial backfill of subbase material, free of particles larger than 1 inch (25 mm), to a height of 12 inches (300 mm) over the utility pipe or conduit.
 - 1. Carefully compact material under pipe haunches and bring backfill evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of utility system.
- E. Coordinate backfilling with utilities testing.
- F. Place and compact final backfill of satisfactory soil material to final subgrade.
- G. Install warning tape directly above utilities, 12 inches (300 mm) below finished grade, except 6 inches (150 mm) below subgrade under pavements and slabs.

5.21 FILL

- A. Preparation: Remove vegetation, topsoil, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface before placing fills.

- B. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- C. Place and compact fill material in layers to required elevations as follows:
 - 1. Under grass and planted areas, use satisfactory soil material.
 - 2. Under walks and pavements, use satisfactory soil material.
 - 3. Under steps and ramps, use engineered fill.
 - 4. Under building slabs, use engineered fill.
 - 5. Under footings and foundations, use engineered fill.

5.22 MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within 2 percent of optimum moisture content.
 - 1. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
 - 2. Remove and replace, or scarify and air-dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

5.23 COMPACTION OF BACKFILLS AND FILLS

- A. Place backfill and fill materials in layers not more than 8 inches (200 mm) in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches (100 mm) in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
- C. Compact soil to not less than the following percentages of maximum dry unit weight according to ASTM D 698:
 - 1. Under structures, steps, and pavements, scarify and recompact top 12 inches (300 mm) of existing subgrade and each layer of backfill or fill material at 98 percent. The moisture content shall be maintained between minus 3, plus 1 percent of the optimal moisture.
 - 2. Under walkways, scarify and recompact top 6 inches (150 mm) below subgrade and compact each layer of backfill or fill material at 95 percent. The moisture content shall be maintained between minus 3, plus 1 percent of the optimal moisture.
 - 3. Under lawn or unpaved areas, scarify and recompact top 6 inches (150 mm) below subgrade and compact each layer of backfill or fill material at 85 percent.

5.24 GRADING

- A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 - 1. Provide a smooth transition between adjacent existing grades and new grades.
 - 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
 - 1. Lawn or Unpaved Areas: Plus or minus 1 inch (25 mm).
 - 2. Walks: Plus or minus 1 inch (25 mm).
 - 3. Pavements: Plus or minus 1/2 inch (13 mm).

5.25 SUBSURFACE DRAINAGE

- A. Subsurface Drain: Place a layer of drainage fabric around perimeter of drainage trench as indicated. Place a 6-inch (150-mm) course of filter material on drainage fabric to support drainage pipe. Encase drainage pipe in a minimum of 12 inches (300 mm) of filter material and wrap in drainage fabric, overlapping sides and ends at least 6 inches (150 mm).
 - 1. Compact each course of filter material to 98 percent of maximum dry unit weight according to ASTM D 698.
- B. Drainage Backfill: Place and compact filter material over subsurface drain, in width indicated, to within 12 inches (300 mm) of final subgrade. Overlay drainage backfill with one layer of drainage fabric, overlapping sides and ends at least 6 inches (150 mm).
 - 1. Compact each course of filter material to 98 percent of maximum dry density according to ASTM D 698.
 - 2. Place and compact impervious fill material over drainage backfill to final subgrade.

5.26 SUBBASE AND BASE COURSES

- A. Under pavements and walks, place subbase course on prepared subgrade and as follows:
 - 1. Place base course material over subbase.
 - 2. Compact subbase and base courses at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 1557. The moisture content shall be maintained between minus 3, plus 1 percent of the optimal moisture.

3. Shape subbase and base to required crown elevations and cross-slope grades.
4. When thickness of compacted subbase or base course is 6 inches (150 mm) or less, place materials in a single layer.
5. When thickness of compacted subbase or base course exceeds 6 inches (150 mm), place materials in equal layers, with no layer more than 6 inches (150 mm) thick or less than 3 inches (75 mm) thick when compacted.

5.27 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent geotechnical engineering testing agency to perform field quality-control testing.
- B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.
- C. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:
 1. Paved Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. (186 sq. m) or less of paved area, but in no case fewer than three tests.
 2. Trench Backfill: At each compacted initial and final backfill layer, at least one test for each 150 feet (46 m) or less of trench length, but no fewer than two tests.
- E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is obtained.

5.28 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
 1. Scarify or remove and replace soil material to depth as directed by Engineer; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.

5.29 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Transport surplus satisfactory soil off the Owner's property.
 1. Remove waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property

5.30 MEASUREMENT AND PAYMENT

Payment for demolition and removal of roadway shall be Lump Sum and include total removal of existing pavement and granular subbase down to subgrade, approximately 12 inches total depth for estimating purposes. Earthwork and embankment shall be incidental to roadway construction.

TECHNICAL SPECIFICATIONS

SECTION 6 - CONCRETE AND REINFORCING STEEL

6.1 SCOPE

The Work described by this Section consists of furnishing all materials and equipment, and performing all labor, for the complete construction of all concrete work except concrete pavements, including all work and appurtenances thereto, as shown or specified, or both. Work shall include the installation of all slabs, footings, headwalls, and the items to be built into the concrete work, and all other Work and appurtenances specified or required, or both for proper execution of the Work. All products to be built into concrete work shall be correctly positioned in the form work; positioning must be inspected and approved by the ENGINEER before concrete is placed.

6.2 APPLICABLE SPECIFICATIONS

Concrete: Concrete work shall conform to all requirements of the Building Code Requirements for Reinforced Concrete, ACI-318, latest edition of, and all codes and standards cited therein and the standard minimum specifications for ready-mixed concrete. Concrete shall also be Class "A" and comply with Section 601 and 712 of the current edition Of the KYTC Standard Specifications for Road and Bridge Construction.

- A. Reinforcing Steel: Steel bar reinforcement shall conform to the requirements of ASTM A-615 "Deformed Billet Steel Bars for Concrete Reinforcement"; ASTM A-617 "Axle Steel Deformed Bars for Concrete Reinforcement". Reinforcing Steel shall also comply with Section 602 of the current edition of the KYTC Standard Specifications for Road and Bridge Construction.

6.3 BASIS OF PAYMENT

Payment for the placing of concrete and reinforcing steel shall not be a separate pay item, but shall be included in the unit bid of the specific structure being constructed.

6.4 CONCRETE SIDEWALK AND ENTRANCE PAVEMENT

- A. This work shall consist of constructing, on a prepared sub grade, concrete sidewalks, handicap ramps, and entrance pavement at the elevations and to the lines and grades shown on the plans or established by the ENGINEER and in accordance with KYTC Standard Specifications for Road and Bridge Construction, Section 505 current edition.
 - 1. The minimum thickness for all sidewalks and handicap ramps except at residential driveway entrances shall be four and one-half (4 1/2") inches. Apron and sidewalk at residential driveway entrances shall be six (6") inches minimum thickness. Concrete sidewalks shall be struck off by use of a screed, hand floated and brushed. Edges and division marks shall be finished in a neat and workmanlike manner by use of the

proper concrete finishing tools. Division joints in sidewalks shall be three-fourths (3/4") inch in depth at four foot (4') intervals. Expansion joints shall be placed at thirty-two (32') feet intervals or as otherwise directed.

2. Expansion joint material shall be an approved quality one-half (1/2") inch in thickness and shall extend entirely and continuously through the concrete. The unit bid price for the item involved shall include the cost of expansion joint material in place. All expansion joint material shall be trimmed to conform to the surface of the concrete.
 3. ADA Detectable Warning Pavers at all Handicap ramps shall be provided by LFUCG and shall be installed by the contractor per LFUCG standard details and per the manufacturer's recommendations, at locations indicated on the project drawings and in the specifications.
- B. Measurement and Payment.
1. Handicap ramps will be included and paid for under "LFUCG Standard 4 1/2" Concrete Sidewalk". Residential entrances including apron, sidewalk and concrete areas beyond the sidewalk will be included and paid for under " 6" Inch Concrete Sidewalk and Entrances".
 2. Payment will be made at the unit bid price per square yard of "LFUCG Standard 4-1/2" Concrete Sidewalk" or "6" Concrete Sidewalk and Entrances," complete and accepted in place in the final work. Payment shall be full compensation for all labor, materials and incidentals necessary to complete the work.
 3. Payment will be made for installation only of LFUCG provided Detectable Warning Pavers.

6.5 CONCRETE CURBS AND GUTTERS

- A. This work shall consist of constructing one prepared subgrade, combination curbs and gutters at the elevations and to the lines and grades shown on the plans to the required section and depth on a firm base as approved by the OWNER or ENGINEER and in accordance with the LFUCG Standard Drawings.
- B. Measurement and Payment. Payment will be made on the accepted quantities of LFUCG Curb & Gutter Type I or LFUCG Header Curb at the unit bid price per linear foot. Payment shall be full compensation for all materials, equipment and labor necessary to complete the work.

6.6 CONCRETE PAVEMENT AND SIDEWALK REMOVAL & REPLACEMENT

- A. When it is necessary to remove portions of the existing concrete sidewalks and entrance pavements and to match the remaining portions with new concrete it shall be done as follows: Existing concrete sidewalks and entrance pavements 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 done as directed by the OWNER or ENGINEER.

It will not be permissible to place new concrete against the ragged edge of concrete left by removing existing concrete with air hammers, hand tools, or at broken division lines.

- B. Measurement and Pavement. No direct payment is made for concrete sidewalk removal or concrete entrance pavement removal or sawing, as this cost is to be included in the unit bid price for Clearing & Grubbing and Demolition.

6.7 CONCRETE CURB REMOVAL, CONCRETE DRIVEWAY REMOVAL, CONCRETE SIDEWALK REMOVAL, CATCH BASIN REMOVAL, PIPE REMOVAL AND RETAINING WALL REMOVAL

- A. All existing curb, driveway entrances, sidewalks, catch basins, pipe and retaining wall removal noted on the plans shall be removed by the CONTRACTOR and disposed of off-site as approved by the OWNER or ENGINEER.
- B. Measurement and Payment. No direct payment will be made for this work, as this cost is to be included in the unit bid price for Clearing & Grubbing and Demolition.

TECHNICAL SPECIFICATIONS

SECTION 7 - RECONSTRUCTING & ADJUSTING MANHOLES

7.1 SCOPE

This item shall include reconstructing with new standard manhole frames and covers or adjusting manholes to the required line and elevation in accordance with Section 710 of the KYTC Standard Specifications for Road and Bridge Construction, current edition.

Frames and covers shall comply with LFUCG Standard Drawings 103.0 and 221.0 as appropriate. New frames shall be the adjustable type, set to their lowest setting, and lubricated per manufacturer's instructions.

7.2 ADJUSTING MANHOLE FRAMES AND COVERS TO GRADE

- A. Except where shown on the Drawings, the top of the precast concrete eccentric cone of a standard manhole or the top of the flat slab of a shallow manhole shall terminate 4 inches below existing grade in an unpaved non-traffic area except in a residential yard and 13 inches below existing grade in a paved or unpaved traffic area and in a residential yard. The remainder of the manhole shall be adjusted to the required grade as described hereinafter in paragraphs B and C of this article.
- B. When a manhole is located in an unpaved non-traffic area other than in a residential yard, the frame and cover shall be adjusted to an elevation 3 inches to 5 inches above the existing grade at the center of the cover. If field changes have resulted in the installed manhole invert elevation to be lower than the invert elevation shown on the Drawings, the adjustment to an elevation of 3 inches to 5 inches above existing grade shall be accomplished by the use of precast concrete or cast iron adjusting rings. If field changes have resulted in the completed manhole invert to be greater than the invert shown on the Drawings and the cover higher than 5 inches above existing grade, then the top of the eccentric cone, when used, or the top of the barrel section, when used, shall be trimmed down so that the manhole cover, after installation, is no greater than 5 inches above existing grade at the center of the cover. The area around the adjusted frame and cover shall be filled with the required material, sloping it away from the cover at a grade of 1 inch per foot.
- C. When a manhole is located in a bituminous, concrete, or crushed stone traffic area, or in a residential yard, the frame and cover shall be adjusted to the grade of the surrounding area by the use of precast concrete or cast iron adjusting rings. The adjusted cover shall conform to the elevation and slope of the surrounding area. If field changes have resulted in the installed manhole invert elevation to be so much higher than the invert elevation shown on the Drawings that the top of the eccentric cone, when used, or the top of the flat slab, when used, is less than the thickness of the frame and cover 7 inches from the grade of the surrounding area, then the top of the cone or barrel section shall be trimmed down enough to permit the cover, after installation, to conform to the elevation and slope of the

surrounding area. After installation, the inside and outside surfaces shall receive a waterproofing bitumastic coating.

1. If resurfacing of the street in which sewers are laid is expected within twelve (12) months, covers shall be set 1-1/2 inches above the existing pavement surface in anticipation of the resurfacing operations.

7.3 ADJUSTING SECTIONS

Only clean adjusting sections shall be used. Each adjusting section shall be laid in a bead of butyl mastic sealant and shall be thoroughly bonded.

7.4 SETTING MANHOLE FRAMES AND COVERS

- A. Manhole frames shall be set with the tops conforming to the required elevations set forth hereinbefore. Frames shall be set concentric with the top of the concrete and in a full bead of butyl mastic sealant so that the space between the top of the masonry and the bottom flange of the frame shall be completely watertight.
- B. Manhole covers shall be left in place in the frames on completion of other work at the manholes.

7.5 VACUUM TESTING (ASTM C1244)

A. Scope

1. This test method covers procedures for testing precast concrete manhole sections when using the vacuum test method to demonstrate the integrity of the installed materials and the construction procedures. This test method is used for testing concrete manhole sections utilizing mortar, mastic, or gasketed joints.
2. This test method is intended to be used as a preliminary test to enable the installer to demonstrate the condition of the concrete manholes prior to backfill. It may also be used to test manholes after backfilling; however, testing should be correlated with the connector supplier.
3. This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.
4. This test method is the companion to metric Test Method C 1244M; therefore, no SI equivalents are shown in this test method.

B. References, ASTM Standards:

1. C 822 Terminology Relating to Concrete Pipe and Related Products.
2. C 924 Practice for Testing Concrete Pipe Sewer Lines by Low-Pressure Air Test Method.
3. C 969 Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines.

C. Terminology

For definitions of terms relating to manholes, see Terminology C 822.

D. Summary of Practice

All lift holes and any pipes entering the manhole are to be plugged. A vacuum will be drawn and the vacuum drop over a specified time period is used to determine the acceptability of the manhole.

E. Significance and Use

This is not a routine test. The values recorded are applicable only to the manhole being tested and at the time of testing.

F. Preparation of the Manhole

1. All lift holes shall be plugged.
2. All pipes entering the manhole shall be temporarily plugged, taking care to securely brace the pipes and plugs to prevent them from being drawn into the manhole.

G. Procedure

1. The test head shall be placed at the top of the manhole in accordance with the manufacturer's recommendations.
2. A vacuum of 10 inches of mercury shall be drawn on the manhole, the valve on the vacuum line of the test head closed, and the vacuum pump shut off. The time shall be measured for the vacuum to drop to 9 inches of mercury.
3. The manhole shall pass if the time for the vacuum reading to drop from 10 inches of mercury to 9 inches of mercury meets or exceeds the values indicated in the following table:

| Minimum Test Times for Various Manhole Diameters (seconds) | | | | | | | | | |
|---|-------------------|----|----|----|----|----|----|-----|-----|
| Depth (ft) | Diameter (inches) | | | | | | | | |
| | 30 | 33 | 36 | 42 | 48 | 54 | 60 | 66 | 72 |
| 1 | 1 | 2 | 2 | 2 | 2 | 3 | 3 | 4 | 4 |
| 2 | 3 | 3 | 4 | 4 | 5 | 6 | 7 | 7 | 8 |
| 3 | 4 | 5 | 5 | 6 | 7 | 9 | 10 | 11 | 12 |
| 4 | 6 | 6 | 7 | 9 | 10 | 12 | 13 | 15 | 16 |
| 5 | 7 | 8 | 9 | 11 | 12 | 14 | 16 | 18 | 20 |
| 6 | 8 | 10 | 11 | 13 | 15 | 17 | 20 | 22 | 24 |
| 7 | 10 | 11 | 12 | 15 | 17 | 20 | 23 | 26 | 28 |
| 8 | 11 | 12 | 14 | 17 | 20 | 23 | 26 | 29 | 33 |
| 10 | 14 | 15 | 18 | 21 | 25 | 29 | 33 | 36 | 41 |
| 12 | 17 | 18 | 21 | 25 | 30 | 35 | 39 | 43 | 49 |
| 14 | 20 | 21 | 25 | 30 | 35 | 41 | 46 | 51 | 57 |
| 16 | 22 | 24 | 28 | 34 | 40 | 46 | 52 | 58 | 67 |
| 18 | 25 | 27 | 32 | 38 | 45 | 52 | 59 | 65 | 73 |
| 20 | 28 | 30 | 35 | 42 | 50 | 58 | 65 | 72 | 81 |
| 22 | 31 | 33 | 39 | 46 | 55 | 64 | 72 | 79 | 89 |
| 24 | 33 | 36 | 42 | 51 | 59 | 69 | 78 | 87 | 97 |
| 26 | 36 | 39 | 46 | 55 | 64 | 75 | 85 | 94 | 105 |
| 28 | 39 | 42 | 49 | 59 | 69 | 81 | 91 | 101 | 113 |
| 30 | 42 | 45 | 53 | 63 | 74 | 87 | 98 | 108 | 121 |

4. If the manhole fails the initial test, necessary repairs shall be made by an approved method. The manhole shall then be retested until a satisfactory test is obtained.
5. Use or failure of this vacuum test shall not preclude acceptance by appropriate water infiltration or exfiltration testing, (see Practice C 969), or other means.

H. Precision and Bias

No justifiable statement can be made either on the precision or bias of this procedure, since the test result merely states whether there is conformance to the criteria for the success specified.

7.6 BYPASS PUMPING

The contractor shall provide all labor, supervision, tools, equipment, appliances, and materials to perform all operations in connection with pumping sewage and wet weather flows around pipe segments, to prevent sewage overflows and provide reliable sewer at all times. The Contractor shall provide and maintain adequate pumping equipment, force mains and other necessary appurtenances. The contractor shall have backup pumps, force mains and appurtenances ready to

deploy immediately. The Inspector shall approve appurtenances and discharge point. The Contractor shall demonstrate that the pumping system is in good working order and is sufficiently sized to successfully handle flows. Any spillage, backups or overflows is the sole responsibility of the Contractor.

7.7 MEASUREMENT AND PAYMENT

No direct payment will be made for this work, as this is to be included in the unit bid price for manhole construction.

TECHNICAL SPECIFICATIONS

SECTION 8 - ASPHALT PAVEMENTS

8.1 ASPHALT CONCRETE SURFACE AND BASE

- A. This work shall consist of constructing one or more courses of asphalt concrete surface or base on a prepared base in accordance with KYTC Standard Specifications and in reasonably close conformity with the lines, grades, thickness and typical sections shown on the plans or established by the ENGINEER.

The asphalt surface or base shall be composed of a mixture of aggregate, filler when required and asphalt material.

- B. Mixtures: See KYTC Sections 402 through 403.
Asphalt Surface shall be Class 1, 0.38D PG64-22
Asphalt Base shall be Class 1, 0.75D PG64-22

- C. Basis of Payment: The accepted quantities measured in accordance with Sections 109 and 402.04 of the KYTC Standard Specifications for Road and Bridge Construction, current edition will be paid for at the unit bid price as follows, which payment shall be full compensation for all work required by this section.

Payment will be made under:

| | |
|--|---------|
| Asphalt Concrete Surface | Per Ton |
| Asphalt Concrete Base | Per Ton |
| Asphalt Mixture for Leveling and Wedging | Per Ton |

8.2 ASPHALT TACK COAT

- A. This work shall consist of preparation of existing bases or surfaces, and the application thereto of liquid asphalt material prior to the placing of covering courses of asphalt mixtures or treatments. Asphalt Tack Coat shall consist of the application of liquid asphalt material to the surface of concrete or brick pavements and bases, to existing asphalt surfaces, and when necessary, to newly constructed asphalt courses.
- B. Materials: The asphalt material shall be either SS-1 or SS-IH and shall meet the requirements of KYTC Standard Specifications, current edition, Section 806. All equipment required for performance of this work shall be approved before construction is started and shall be maintained in a satisfactory operating condition.

The CONTRACTOR shall provide hand brooms and other small tools and equipment essential to the completion of the work in addition to a mechanical broom or sweeper, asphalt heating equipment and a pressure distributor as needed.

- C. Method of Measurement: When an approved cutback asphalt is furnished for the tack coat, the actual quantity will be measured for compliance. Asphalt materials for tack coat will be weighed in accordance with the requirements for KYTC Standard Specifications Section 109.
- D. Basis of Payment: No direct payment will be made for asphalt material for tack. This work as this is to be included in the unit bid price for asphalt surface.

8.3 DENSE GRADED AGGREGATE BASE

- A. This base course shall consist of graded aggregate and water mixed with or without an admixture, placed on a prepared sub grade, and shaped and compacted to the lines, grades and cross section shown on the plans and as directed by the Engineer to maintain access to driveways, etc. and for Maintenance of Traffic.
- B. Materials: Materials shall meet the requirements of the following KYTC Standard Specifications, current edition Section:

| | |
|------------------|-----|
| Aggregate | 805 |
| Calcium Chloride | 825 |

Water used in the mixture will be subject to approval by the ENGINEER on the project.

When approved by the ENGINEER, the aggregate may be produced by blending 2 or more aggregate sizes. When blending is permitted, the separate sizes shall be fed uniformly into the mixer and a synchronized proportioning system between the feeders shall be provided.

- A. The subgrade shall be prepared in accordance with KYTC Standard Specifications, current edition Section 207, and shall be maintained free from irregularities.

It is intended that the dense-graded aggregate base shall be completely covered with the specified pavement courses before the work is suspended for the winter months. The CONTRACTOR shall make every effort to accomplish this objective. When the dense graded aggregate base course is not completely covered with the specified pavement courses, the OWNER or ENGINEER will then determine the extent of any further work necessary to protect and maintain the uncompleted work during -the winter months and until the beginning of spring paving operations. When extra materials, methods, and construction techniques, not part of the specified contract, are determined to be necessary to protect, maintain, and repair any portion of the uncompleted work, the cost of such extra materials, methods, and techniques shall be borne by the CONTRACTOR.

- B. The requirements of Kentucky Department of Highways (KYTC) 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 303.07, will not be established.
 3. Density measurements will be made at locations designated by the OWNER or ENGINEER or his/her representative.
 4. Additional tests requested by the CONTRACTOR will be at the CONTRACTOR'S expense.
 5. The average of dry density measurements in a lift shall be equal to or greater than 144 pounds per cubic foot (pct). No individual measurement shall be less than 140 pcf.
 6. In the event the dry density measurements are not met, laydown operations will be stopped in the substandard area identified by the ENGINEER or his/her representative. The CONTRACTOR will either continue compaction effort or rework the designated section until the requirements for dry density are satisfied.
- C. Method of Measurement: Water used to moisten the subgrade prior to placing base, in mixing the base material, and to maintain moisture during compaction and maintenance of the base will not be measured for separate payment, but will be considered incidental to DGA Base. The plant-mixed materials will be weighed in accordance with KYTC Standard Specifications, current edition Section 109.
- D. Payment: The accepted quantities thus measured will be paid for at the unit bid price of "Dense Graded Aggregate" which payment shall be full compensation for all work required by this Section.

Payment will be made under:

| | |
|------------------------|---------|
| Dense Graded Aggregate | Per Ton |
|------------------------|---------|

8.4 STONE BRIDGING

- A. Where soft, undesirable soil material is encountered at or below the desired sub grade elevation, undesirable material will be removed and/or bridged using #2 stone to develop a sufficient platform to support compaction of DGA. The depth and extent of the Work shall be determined based on conditions observed and performance of compaction equipment on subgrade. Work shall be as directed by the ENGINEER.
- B. Requirements. Undesirable soil material shall be removed and disposed of by the CONTRACTOR. The #2 stone shall meet the requirements of KYTC Section 805. Stone will be dumped or shoved into place and walked in until support is developed for heavy equipment. The ultimate test will be the ability to provide an adequate platform for placement and compaction of the DGA base. Geotextile Fabric Type IV meeting the

requirements of KYTC Section 843 shall be placed between the prepared subgrade and the No.2 Stone. All costs associated with furnishing and placing Geotextile Fabric Type IV shall be considered incidental to the payment for "Stone Bridging."

- C. Measurement and Payment. No direct measurements will be made. Payment for "Stone Bridging" will be based on weight tickets for #2 stone delivered and accepted for the Work. Payment will be at the bid unit price per ton for " Stone Bridging", which shall be payment for all material, labor, plant, incidentals and operating costs necessary to construct and maintain "Stone Bridging." Excavation, proof testing, and disposal of excavated material, furnishing and placing Geotextile Fabric Type IV are incidental to "Stone Bridging" and will be included in the payment for "Stone Bridging."

TECHNICAL SPECIFICATIONS

SECTION 9 - REMOVE & RESET FENCE OR REMOVE & REPLACE FENCE

9.1 SCOPE

Where it is necessary to remove existing fences from the construction limits, the intent of this work shall consist of removing and resetting the fence or removing and replacing the fence as indicated on the plans or as directed by the OWNER.

If the OWNER or ENGINEER determines at the time of removal that the existing fence is to be replaced, the CONTRACTOR shall replace it with fence of the same type and height as existing.

The removing and resetting or replacing of fences shall conform to Section 722 of the current edition of the KYTC Standard Specifications for construction requirements. Posts necessary for replacement posts shall be of the same type as exists in the original fence and shall comply with applicable requirements specified. All other materials shall meet the requirements specified in the following sections of the KYTC Standard Specifications.

Chain Link Fencing Materials 817

The CONTRACTOR may select any class of concrete specified in KYTC (Section 601).

9.2 RESETTING FENCE

The CONTRACTOR will be required to reset the fence to the location designated, using material from the original fence, and he shall leave all fences in as good condition as before removal. All posts shall be reset using the same type of construction that was used on the original fence, and any new material necessary to set these posts in the manner used on the original fence shall be furnished by the CONTRACTOR. Where any posts are set in concrete, the fence shall be reconstructed in the same manner, the CONTRACTOR furnishing the concrete. Reconstructed fences shall be true to line and vertical. All wires shall be taut and well stapled, and when resetting is finished, the fences shall present a workmanlike appearance. Gates shall be removed and restored for service at the new location. Fence and/or gates, which are damaged during moving or resetting, shall be repaired or replaced at the CONTRACTOR'S expense.

Should the owners or lessees of the property desire to improve any fence or portion thereof that is to be reset, and the said owners or lessees agree to furnish the CONTRACTOR the necessary materials similar in character to that in the original fence, the CONTRACTOR will be required to rebuild, repair, and reset such fence, using the material furnished by the owners or lessees in lieu of the original material.

9.3 DISPOSAL OF FENCE

The CONTRACTOR shall remove fence as indicated on the plans or as directed by the OWNER or ENGINEER and make satisfactory disposal of the materials off site.

9.4 REMOVING & REPLACING FENCE

The CONTRACTOR shall remove the fence as described above. The CONTRACTOR shall replace the fence in accordance with the requirements of KYTC Section 722.

9.5 METHOD OF MEASUREMENT

Removing and resetting fence, including gates will be measured in linear feet along the top of the fence and gates from outside to outside of end posts for each continuous run complete and accepted. Removing and replacing fence, including gates, will be measured in linear feet along the top of the fence and gates from outside to outside of end posts for each continuous run complete and accepted.

9.6 BASIS OF PAYMENT

The accepted quantities of fence, including gates, removed and reset will be paid for at the contract unit price per linear foot. The accepted quantities of fence, including gates, removed and replaced will be paid for at the contract unit price per linear foot. Payment will be full compensation for all materials, equipment, and labor necessary to complete the work.

Payment will be made under:

| | |
|----------------------------|-------------|
| Removing & Resetting Fence | Linear Foot |
| Removing & Replacing Fence | Linear Foot |

TECHNICAL SPECIFICATIONS

SECTION 10 - LANDSCAPING

SCOPE

The Work shall consist of the installation of all plant material as specified on the construction documents.

10.1 SUBMITTALS

- b) Product certificates signed by manufacturers certifying that their products comply with specified requirements.

Certification of grass seed or sod from seed vendor for each grass-seed mixture or sod stating the botanical and common name and percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging or source for sod.

Material test reports from qualified independent testing agency indicating and interpreting test results relative to compliance of the following materials with requirements indicated.

1. Analysis of existing surface soil.
2. Analysis of imported topsoil.

Planting schedule indicating anticipated dates and locations for each type of planting.

10.2. QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer who has completed landscaping work similar in material, design, and extent to that indicated for this Project and with a record of successful landscape establishment.

1. Topsoil Analysis: Furnish a soil analysis made by independent soil-testing agency stating percentages of organic matter, inorganic matter (silt, clay, and sand), deleterious material, pH, and mineral and plant-nutrient content of topsoil.
2. Report suitability of topsoil for growth of applicable planting material. State recommended quantities of nitrogen, phosphorus, and potash nutrients and any limestone, aluminum sulfate, or other soil amendments to be added to produce a satisfactory topsoil.

10.3 DELIVERY, STORAGE, AND HANDLING

- c) Packaged Materials: Deliver packaged materials in containers showing weight, analysis, and name of manufacturer. Protect materials from deterioration during delivery and while stored at site.

Seed: Deliver seed in original sealed, labeled, and undamaged containers.

Sod: Deliver sod in fresh-cut, moist and neatly rolled or stacked condition. Do not store in directly sunlight or heat, do not allow to dry out prior to installation.

1.04 PROJECT CONDITIONS

- A. Utilities: Determine location of above grade and underground utilities and perform work in a manner which will avoid damage. Hand excavate, as required.
- B. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify Architect before planting.

10.5 COORDINATION AND SCHEDULING

- d) Coordinate installation of planting materials during normal planting seasons for each type of plant material required.

10.6 WARRANTY

- A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Special Warranty: Warrant the following living planting materials for a period of one year after date of Substantial Completion, against defects including death and unsatisfactory growth, except for defects resulting from lack of adequate maintenance, neglect, or abuse by Owner, abnormal weather conditions unusual for warranty period, or incidents that are beyond Contractor's control.
- C. Remove and replace dead planting materials immediately unless required to plant in the succeeding planting season.
- D. Replace planting materials that are more than 25 percent dead or in an unhealthy condition at end of warranty period.

10.7 LAWN MAINTENANCE

- A. Begin maintenance of lawns immediately after each area is planted and continue until acceptable lawn is established, but for not less than the following periods:
 - 1. Seeded Lawns: 60 days after date of Substantial Completion.
 - 2. When full maintenance period has not elapsed before end of planting season, or if lawn is not fully established at that time, continue maintenance during next planting season.
 - 3. Maintain and establish lawns by watering, fertilizing, weeding, mowing, trimming, replanting, and other operations. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth lawn.
- B. WATERING: Provide and maintain temporary piping, hoses, and lawn-watering equipment to convey water from sources and to keep lawns uniformly moist to a depth of 4 inches (100 mm).
 - 1. Water lawn at the minimum rate of 1 inch (25 mm) per week.
- C. MOWING: Mow lawns as soon as there is enough top growth to cut with mower set at specified height for principal species planted. Repeat mowing as required to maintain specified height without cutting more than 40 percent of the grass height. Remove no more than 40 percent of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Do not mow when soil is so wet as to leave permanent ruts in the lawn.
- D. POST-FERTILIZATION: Apply fertilizer to lawn after first mowing and when grass is dry.
 - 1. Use fertilizer that will provide actual nitrogen of at least 1 lb per 1000 sq. ft. (0.5 kg per 100 sq. m) of lawn area.

10.8 MATERIALS

A. GRASS

- 1. Grass Seed: Fresh, clean, dry, new-crop seed complying with the Association of Official Seed Analysts' "Rules for Testing Seeds" for purity and germination tolerances.
- 2. Seed Mixture: Provide seed of grass species and varieties, proportions by weight, and minimum percentages of purity, germination, and maximum percentage of weed seed as indicated on Schedules at the end of this Section.
- 3. PAYMENT: Payment will be made on the accepted quantity used and paid for at the unit bid price. Payment shall be full compensation for all materials, equipment and labor necessary to complete the work.

- b. Topsoil Source: Import topsoil from off-site sources. Obtain topsoil from naturally well-drained sites where topsoil occurs at least 6 inches (100 mm) deep; do not obtain from bogs or marshes.
 - c. Topsoil Source: Amend existing surface soil to produce topsoil. Supplement with imported topsoil when required.
6. PAYMENT: No direct payment will be made for this work as this is to be included in the unit bid price for Seeding and Protection per SY.

D. SOIL AMENDMENTS

1. Additives

- a. Lime: ASTM C 602, Class T, agricultural limestone containing a minimum 80 percent calcium carbonate equivalent, with a minimum 99 percent passing a No. 8 (2.36 mm) sieve and a minimum 75 percent passing a No. 60 (250 micrometer) sieve.
- b. Provide lime in the form of dolomitic limestone.
- c. Aluminum Sulfate: Commercial grade, unadulterated.
- d. Sand: Clean, washed, natural or manufactured sand, free of toxic materials.
- e. Perlite: Horticultural perlite, soil amendment grade.
- f. Peat Humus: Finely divided or granular texture, with a pH range of 6 to 7.5, composed of partially decomposed moss peat (other than sphagnum), peat humus, or reed-sedge peat.
- g. Peat Humus: For acid-tolerant trees and shrubs, provide moss peat, with a pH range of 3.2 to 4.5, coarse fibrous texture, medium-divided sphagnum moss peat or reed-sedge peat.
- h. Sawdust or Ground-Bark Humus: Decomposed, nitrogen-treated, of uniform texture, free of chips, stones, sticks, soil, or toxic materials.
 - 1) When site treated, mix with at least 0.15 lb (2.4 kg) of ammonium nitrate or 0.25 lb (4 kg) of ammonium sulfate per cu. ft. (cu. m) of loose sawdust or ground bark.
- i. Manure: Well-rotted, unleached stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials;

free of toxic substances, stones, sticks, soil, weed seed, and material harmful to plant growth.

2. Herbicides: EPA registered and approved, of type recommended by manufacturer.
3. Water: Potable.
4. PAYMENT: No direct payment will be made for this work as this is to be included in the unit bid price for Seeding and Protection.

E. FERTILIZER

1. Bonemeal: Commercial, raw, finely ground; minimum of 4 percent nitrogen and 20 percent phosphoric acid.
2. Superphosphate: Commercial, phosphate mixture, soluble; minimum of 20 percent available phosphoric acid.
3. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea-form, phosphorous, and potassium in the following composition:
 - a. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.
4. Slow-Release Fertilizer: Granular fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
 - a. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.
5. PAYMENT: No direct payment will be made for this work as this is to be included in the unit bid price for Seeding and Protection.

10.9 INSTALLATION

A. EXAMINATION

Examine areas to receive landscaping for compliance with requirements and for conditions affecting performance of work of this Section. Do not proceed with installation until unsatisfactory conditions have been corrected.

B. PLANTING SOIL PREPARATION

Before mixing, clean topsoil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful to plant growth.

Mix soil amendments and fertilizers with topsoil at rates indicated. Delay mixing fertilizer if planting does not follow placing of planting soil within a few days.

For lawns, mix planting soil either prior to planting or apply on surface of topsoil and mix thoroughly before planting.

Mix lime with dry soil prior to mixing fertilizer. Prevent lime from contacting roots of acid-tolerant plants.

Apply phosphoric acid fertilizer, other than that constituting a portion of complete fertilizers, directly to subgrade before applying planting soil and tilling.

C. CLEANUP AND PROTECTION

During landscaping, keep pavements clean and work area in an orderly condition. Protect landscaping from damage due to landscape operations, operations by other contractors and trades, and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged landscape work as directed.

D. DISPOSAL OF SURPLUS AND WASTE MATERIALS

Disposal: Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of it off the Owner's property.

E. SEED MIXTURES SCHEDULE

Seed shall be a blend of Turf Type Tall Fescue with perennial and annual rye:

Provide a minimum of two types of Turf Type Fescue from the following list with Falcon II, Houndog 5, Finelawn Petite, and Crossfire II. DO NOT USE KY 31 FESCUE.

Provide either Calypso II or Manhattan II type of Perennial Ryegrass.

Percent by Weight

| | |
|-----------------------|----|
| Turf Type Tall Fescue | 70 |
| Perennial Ryegrass | 20 |
| Annual Ryegrass | 10 |

Apply mix at a rate of 8 lbs./1000 sq. ft., fertilize with 3 lbs. each of nitrogen, phosphate and potash per 1000 sq. ft. Hydro-mulch with 50 lbs. wood fiber per 1000 sq. ft. and 150 gallons per 1000 sq. ft.

TECHNICAL SPECIFICATIONS

SECTION 11 – STORM DRAINAGE PIPEWORK

SUMMARY

This section consists of specifications for the provision and installation of the following Storm Drainage Pipework types: RCP (Reinforced Concrete Pipe); HDPP (High Density Polypropylene); and HDPE (High Density Polyethylene – for subdrainage); and associated fixtures, fittings and accessories to complete installation of pipe systems as indicated in the project drawings and documents.

For storm drainage pipework, the Contractor shall have the choice of providing and installing either RCP or HDPP pipe **unless otherwise indicated on the project drawings or specifications.**

RCP shall be used under all public roads, whether noted on plans or not.

HDPE pipe shall NOT be used on this project for any piping equal to or greater than 12” in diameter.

PART I – RCP STORM DRAINAGE PIPE

11.1 SCOPE FOR RCP

This work shall consist of furnishing, bedding, laying, and jointing of all RCP storm sewer pipe shown on the Construction Plans or otherwise required by the Contract Documents. The work shall also include the trenching and backfill, removal and relocation of disturbed utilities, and the necessary pavement and sidewalk repairs. Repair of concrete curb and entrances will be covered under separate sections. The CONTRACTOR shall limit active pipe installation to assure clean up following such work. This Work includes new storm drainage lines and all connections to new and existing manholes and pipes.

11.2 MATERIALS FOR RCP

All pipe strength shall be Class III is the minimum acceptable class for each type of pipe. Any pipe found defective, or otherwise not meeting the Specifications shall be rejected and replaced by pipe meeting these Specifications at no additional cost to the OWNER.

The CONTRACTOR shall furnish three copies of the supplier's certification to the ENGINEER stating that pipe: materials were manufactured, sampled, tested and inspected in accordance with the standards listed in this Section and have been found to meet those requirements.

- A. Reinforced Concrete Pipe: Circular reinforced concrete pipe shall meet the requirements of ASTM C 76, Standard Specification for Reinforced Concrete Culvert, Storm Drain and

Storm Pipe. Unless shown otherwise on the Plans or in the Contract Documents, Class III pipe shall be used.

Rubber and plastic joints shall meet the requirements of AASHTO M 198, Standard Specification for Joints for Circular Concrete Sewer and Culvert Pipe Using Flexible Watertight Gaskets, for Type A (Rubber Gaskets), Type B (Flexible Plastic Gaskets) gaskets, or Forsheda Rubber Gaskets. Bituminous mastic joint sealing material shall meet the requirements of KYTC Standard Specifications Section 807.02.04, Joint Sealer for Rigid Pipe, except that asbestos fibers shall not be allowed as filler.

- B. Bedding and Backfill: Bedding materials shall be provided as indicated on the Plans and LFUCG's Standard Drawings. All back fill under pavement shall be No. 9 Crushed Limestone to within one (1) foot of the surface of the pavement, and then the design pavement sections shall be utilized. All crushed limestone stone and DGA shall conform to Section 805 of the Kentucky Department of Highways (KYTC) Standard Specifications, current edition.
- C. Temporary Silt Fence: Use either hardwood or steel greater than four feet in height. For hardwood, provide a minimum 1 ½" by 1 ½" cross section that is straight enough to provide a fence without noticeable misalignment. For steel, provide a 1 ¼" by 1" T-section with projections to fasten wire and fabric in position.
1. Provide fabric with a minimum height of 2 feet 8 inches. Require at least 6 horizontal wires spaced 6 ¼ inches or closer with the top and bottom wires 0.134 inch or larger and all other wires 0.1 inch or larger. Require 0.1 inch or larger vertical wires spaced 12 inches or closer.
 2. Provide geotextile fabric with a height of 3 feet.
 3. Use No. 9, one-inch long wire staples and/or fabric ties.

11.3 EXECUTION FOR RCP

In all operations such as placing the pipe, jointing, bedding and backfilling, care shall be exercised and it shall be the CONTRACTOR'S responsibility to see that pipes are not damaged during transportation, unloading, or placement during compaction of the backfill by movement of excessively heavy equipment over the backfill; or any other force that may cause damage.

A. TRENCHING

1. Excavation and grading, shall be done in a neat and workmanlike manner to form smooth and uniform subgrades and surfaces for all subsequent operations and once the surfaces have been shaped to the proper template and compacted to the satisfaction of the ENGINEER and in accordance with the current edition of the Kentucky Department of Highways Standard Specifications, it shall be maintained in such condition until covered by subsequent construction operations.

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

No blasting will be allowed, only mechanical methods of removal will be allowed. 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 OWNER or ENGINEER.

Material removal carried below the indicated depths, except when directed by the OWNER or ENGINEER, shall be replaced with material satisfactory to the OWNER or 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 OWNER or ENGINEER.

2. Classification. Without regard to the materials encountered, all excavation shall be unclassified.
3. Trench Dimensions. No more than 300 feet of trench shall be opened at any time in advance of the pipe, nor shall more than 25 feet be left unfilled overnight. Excavations for pipe shall display a width between the minimum and maximum allowable width at a level one (1)-foot above the outside top of pipe, as shown on the Plans and LFUCG's Standard Drawings.

Sheeting and Bracing. Sheeting and bracing as may be required to safely support the sides of excavations shall comply with current OSHA requirements and the safety precautions as outline in current and accepted safety manuals, such as "Associated General Contractors Manual of Accident Prevention in Construction." When sheeting and bracing are necessary to prevent caving of the walls of excavation and to safeguard the workmen, the excavations shall be dug to such widths that proper allowance is made for the space occupied by the sheeting and bracing.

The CONTRACTOR shall perform the additional excavation required and furnish and put in place the necessary sheeting and bracing and shall remove the same as the excavation is filled.

Saw Cuts. Prior to excavating beneath pavement, sidewalks, curbs, etc., pavement or concrete shall be saw cut. The final saw cut shall be set back at least twelve inches beyond the edge of the excavation and bridged with concrete in accordance with LFUCG Standard Drawings. Trench backfill shall include concrete bridge as shown in the LFUCG Standard Drawings.

4. Excess Material. Excess material generated from the trench excavation and not utilized, as backfill shall be properly disposed of off-site by the CONTRACTOR.

B. CRADLE AND ENCASEMENT

Cradle and Encasement shall be of crushed stone and shall be installed as specified and within the limits shown on the Plans or directed by the ENGINEER.

1. Crushed Stone Cradle. Crushed No.9 stone cradles shall mean the placement of crushed stone from the subgrade level (six-inches below the outside of the pipe) up to the springline of the pipe. The crushed stone shall be deposited in the trench to grade, allowing for the thickness of the pipe wall. Bell holes shall be dug to relieve the bells of all concentrated loads and to provide uniform support throughout the pipe section. For larger pipes, the crushed stone shall be shoveled and shovel-sliced beneath the haunches of the pipe to assure uniform support.
2. Crushed Stone Encasement. Crushed No.9 stone encasement shall mean the placement of additional crushed stone above the crushed stone cradle to a level at least 12-inches above the outside top of the pipe. Crushed No.9 stone is required under pavement and elsewhere as indicated on the drawings. The additional stone shall be placed in such manner to prevent damage to the pipe.

C. PIPE INSTALLATION

1. Inspection and Handling. All pipes shall be inspected on delivery and such pipe sections that do not conform to these Specifications and which are not suitable for use shall be rejected and immediately removed from the work site. Equipment used to handle, lay, and joint pipe shall be so used to prevent damage to the pipe and its jointing materials. All pipe and fitting shall be carefully handled and lowered into the trench. The pipe shall not be rolled, dropped, or thrown into the trench. Damaged pipe or jointing material shall not be installed.
2. Pipe Laying and Jointing. The laying of pipe shall begin at the lowest point and proceed upstream with the bell or groove ends pointing upstream. Prior to making pipe joints, all joint surfaces shall be clean and dry and free from gravel or other extraneous materials.
 - a. All necessary lubricants or adhesives shall be used as recommended by the pipe manufacturer. Suitable means shall be used to force the spigot or tongue end of the pipe the proper distance into the bell or groove end without damage to the pipe and its jointing materials and without disturbing previously laid pipe sections. Special care shall be taken to ensure that the pipe is solidly and uniformly cradled or encased in accordance with these Specifications. No section of pipe shall be brought into position for jointing until the preceding section has been bedded and secured in place.

3. Line and Grade. Each section of pipe shall be checked for vertical and horizontal alignment immediately after being laid. All adjustments to line and grade must be made by scraping away or filling in under the barrel of the pipe and not be wedging or blocking up any portion of the pipe or striking the pipe in an effort to drive it down.
4. Protection of Installed Pipe. As the work progresses, the interior of the pipe shall be protected from and cleaned of all dirt, cement, extruded joint materials, debris, and other extraneous material. Wherever pipe laying is stopped for any significant length of time, such as at the end of the workday, the unfinished end shall be protected from displacement, floatation, cave-in, and in-wash of soil or debris. A suitable temporary tight fitting plug, stopper or bulkhead shall be placed in the exposed bell or groove end of the pipe.

Water shall not be allowed to rise in the excavation until the joint material and/or concrete cradle or encasement has hardened and cannot be damaged by the water. Particular care shall be used to prevent disturbance or damage to the pipe and the joints during backfilling or at any other time. No walking or working over the pipe, except as necessary for placing and compacting backfill or operating compaction equipment directly over the pipe shall be allowed until a minimum of 24-inches of cover over the outside top of the pipe has been placed. Mechanical compaction in this zone shall be with manual pneumatic tampers or other hand-operated methods, which will not damage the pipe.

D. BACKFILL

The pipe trench shall be backfilled utilizing the material types and zones shown on the Plans and LFUCG's Standard Drawings. No.9, No. 57, or No. 78 shall be placed in 12inch maximum lifts and compacted with two passes of a vibratory plate compactor. Dense graded aggregate shall be compacted to 84 percent solid volume. The surface should be raked or lightly roughened. Where the Standard Drawings require a concrete cap, it shall be constructed according the KYTC Section 501 for consolidated unfinished concrete.

1. Repair of Surface Features. After completion of storm sewer pipe construction, surface features such as sod, street pavement, sidewalks, curbs, etc., shall be restored to at-least the condition that existed prior to construction. Finished grades of pavement and sidewalks shall match existing grades. Pavement restoration shall meet the requirements of LFUCG Standard Drawings. Concrete thickness and reinforcement shall conform to the existing sections. The edges of concrete repairs shall be turned down 12 inches and asphalt or other approved expansion joint material shall be placed between the existing and new concrete.

E. INSPECTION

Contractor shall perform and/or provide for a TV inspection of all lines. The TV inspection shall be directed by the Engineer. TV inspection shall be performed in accordance with Technical Specification 21. For storm lines in the street, TV inspection is to be done after fill has been in place at least 30 days and to be done before final surface is placed on street. The closed circuit television inspector is to meet LFUCG's guidelines. Inspectors not listed below shall be submitted to the Engineer to confirm that the inspector meets LFUCG's guidelines.

The following closed circuit television inspectors meet LFUCG's guidelines.

| | |
|------------------------|----------------|
| Leak Eliminators | (859) 875-2995 |
| Pipe Eyes | (859) 987-2529 |
| JGK Testing and Supply | (512) 860-1400 |

11.4 MEASUREMENT AND PAYMENT FOR RCP

RCP Storm Sewer Pipe. Accepted quantities under this Section will be paid for at the Contract Unit Price per linear foot for the appropriate system. No allowances will be made for fittings. Payment as specified above shall be considered full compensation for furnishing, transportation, and installation, including excavation, backfill material, removal and relocation of disturbed utilities, backfilling and pavement, pavement saw cuts, concrete bridge, sidewalk repairs, sod, fertilizer, and lime, silt fence, and all necessary material, labor equipment and incidental necessary to complete the work as required. Payment for concrete curb and entrances will be made under separate item.

PART II – HDPP STORM DRAINAGE PIPE

11.5 SCOPE FOR HDPP (POLYPROPYLENE) STORM DRAINAGE PIPE

This work shall consist of furnishing, bedding, laying, and jointing of all HDPP storm sewer pipe shown on the Construction Plans, Contract Documents and Specifications and all incidentals necessary to place HDPP Storm Sewer to the sizes indicated. The work shall also include the trenching and backfill, removal and relocation of disturbed utilities, and the necessary pavement and sidewalk repairs. Repair of concrete curb and entrances will be covered under separate sections. The CONTRACTOR shall limit active pipe installation to assure clean up following such work. This Work includes new storm drainage lines and all connections to new and existing manholes and pipes.

11.6 MATERIALS FOR HDPP

A. HDPP STORM SEWER PIPE

Only ADS N-12 HDPP or Hancor Sure-Lok HDPP materials are approved at this time. Pipe supplied shall be smooth interior and annular exterior polypropylene (PP) pipe meeting the

ASTM or AASHTO Type S requirements for respective diameters. Submit in writing the proposed Manufacturer's name at time of bid or at pre-construction meeting.

1. Virgin material for twelve through sixty-inch diameter pipe and fitting production shall be an impact modified copolymer meeting the ASTM and AASHTO requirements for respective diameters.
2. The CONTRACTOR shall be certified by the Pipe Manufacturer to install HDPP 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. Only an approved Adapter, as manufactured by the pipe manufacturer, shall be used to connect HDPP pipe with existing pipe of dissimilar material.

B. JOINTS AND FITTINGS

Watertight joints shall be bell-and-spigot. Gasket shall be made of polyisoprene and shall be installed by the pipe manufacturer and covered with a removable wrap to ensure the gasket is free from debris. Joint lubricant shall be as supplied by the manufacturer to be used on the gasket and bell during assembly. All components shall meet ASTM requirements as indicated by the manufacturer.

C. SPECIFICATIONS FOR HDPP STORM SEWER

The following list is a common material, design and performance specification for ND-12 N-12HC.

| | |
|----------------------|------------|
| ASSHTO HB-Section 30 | ASTM C969 |
| AASHTO T-341 | ASTM C1103 |
| AASHTO R-16 | ASTM D2321 |
| AASHTO MP-21-11 | ASTM D3212 |
| | ASTM F477 |
| | ASTM F1417 |
| | ASTM F2487 |
| | ASTM F2736 |
| | ASTM F2881 |

D. PERFORMANCE REQUIREMENTS

All pipe supplied shall meet the minimum joint performance requirements as defined herein and per the manufacturer's requirements.

E. SUBMITTALS

The Contractor shall furnish 3 (three) copies of the supplier's certification to the ENGINEER stating that pipe materials were manufactured, sampled, tested and inspected in accordance with the standards listed in this Section and have been found to meet those requirements.

F. PIPING INSPECTION

HDPP piping, fittings and drainage structures shall be inspected prior to installation and during installation, and any defective or damaged product shall be replaced. Damages and defects include, but are not limited to, cuts, punctures or other damage on the interior or exterior of pipes, also including pipes, fittings or drainage structures with damaged ends or joints that would prevent proper sealing of the joints.

G. EMBEDMENT MATERIAL FOR HDPE STORM SEWER

Embedment materials are those used for bedding, haunching and initial backfill and shall consist of #9 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.

H. BEDDING FOR HDPE STORM SEWER

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.

11.7 EXECUTION FOR HDPP

A. GENERAL INSTALLATION

Pipe installation must conform to all manufacturers' instructions or to Engineer's design requirements, whichever is more stringent, and is to be installed at the required line and grade as indicated on the plans. The Manufacturer must certify that the completed installation has met the installation requirements, which requires a representative of the Manufacturer to be on site during construction.

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.

B. JOINTS AND JOINT ASSEMBLY FOR HDPE STORM SEWER

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

C. IDENTIFICATION - TAPING

For all HDPP storm sewer piping, install detectable warning tape directly over HDPP pipe and at outside edges of underground structures.

D. TRENCH EXCAVATION

1. Excavation and grading. shall be done in a neat and workmanlike manner to form smooth and uniform subgrades and surfaces for all subsequent operations and once the surfaces have been shaped to the proper template and compacted to the satisfaction of the ENGINEER and in accordance with the current edition of the Kentucky Department of Highways Standard Specifications, it shall be maintained in such condition until covered by subsequent construction operations.

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

No blasting will be allowed, only mechanical methods of removal will be allowed. 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 OWNER or ENGINEER.

Material removal carried below the indicated depths, except when directed by the OWNER or ENGINEER, shall be replaced with material satisfactory to the OWNER or 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 OWNER or ENGINEER.

2. Classification. Without regard to the materials encountered, all excavation shall be unclassified.
3. Trench Dimensions. No more than 300 feet of trench shall be opened at any time in advance of the pipe, nor shall more than 25 feet be left unfilled overnight. Excavations for pipe shall display a width between the minimum and maximum allowable width at a level one (1)-foot above the outside top of pipe, as shown on the Plans and LFUCG's Standard Drawings. Where trench walls are stable or supported, provide a width sufficient but no greater than necessary to ensure working room to properly and safely place and compact haunching and other embedment materials. The space between the pipe and trench wall must be wider than the compaction equipment used in the pipe zone. Minimum width shall be not

less than the greater of either the pipe outside diameter plus 16 inches or the pipe outside diameter times 1.25 plus 12 inches.

4. Sheeting and Bracing. Sheeting and bracing as may be required to safely support the sides of excavations shall comply with current OSHA requirements and the safety precautions as outline in current and accepted safety manuals, such as "Associated General Contractors Manual of Accident Prevention in Construction." When sheeting and bracing are necessary to prevent caving of the walls of excavation and to safeguard the workmen, the excavations shall be dug to such widths that proper allowance is made for the space occupied by the sheeting and bracing. Ensure that sheeting is sufficiently tight to prevent washing out of the trench wall from behind the sheeting. Ensure that support of the pipe and its embedment is maintained throughout installation.

The CONTRACTOR shall perform the additional excavation required and furnish and put in place the necessary sheeting and bracing and shall remove the same as the excavation is filled.

5. Saw Cuts. Prior to excavating beneath pavement, sidewalks, curbs, etc., pavement or concrete shall be saw cut. The final saw cut shall be set back at least twelve inches beyond the edge of the excavation and bridged with concrete in accordance with LFUCG Standard Drawings. Trench backfill shall include concrete bridge as shown in the LFUCG Standard Drawings.
6. Excess Material. Excess material generated from the trench excavation and not utilized, as backfill shall be properly disposed of off-site by the CONTRACTOR.

E. DEWATERING FOR HDPP STORM SEWER

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. Do not lay or embed pipe fittings or drainage structures in standing or running water. It may be necessary to provide sumps pumps, underdrains or a diversion ditch to insure a dry trench.

F. FOUNDATION FOR HDPP STORM SEWER

A stable foundation must be provided to insure proper line and grade is maintained. Where wet or otherwise unstable soil incapable of properly supporting the pipe system, as determined by the Engineer, is encountered in the bottom of the trench, remove this material to at least 24 inches below bottom of pipe and replace to the indicated grade with select granular material, compacted as directed by the Engineer in lifts a maximum of 6 inches.

G. HAUNCHING FOR HDPP STORM SEWER

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. Haunch materials may be #9, #57 or #78 coarse aggregates and must be placed and compacted in 8 inch maximum lifts, compacted to 90% standard proctor density.

H. Initial Backfill for HDPP Storm Sewer Placed in Trenches

Initial backfill materials are required to a minimum of $\frac{3}{4}$ of the pipe diameter for proper structural performance of the pipe. Following the AASHTO and ASTM requirements extend the initial backfill from the spring line to 6-12 inches above the pipe to provide protection for the pipe from construction operations during placement of the final backfill and protect the pipe from stones or cobbles in the final backfill. Bring backfill up evenly on both sides of pipe and pipe system for the full length of the pipe. Fill beneath the haunches of the pipe is to be thoroughly compacted, and the remainder of initial backfill shall be compacted in lifts no greater than 8 inches.

I. INITIAL BACKFILL FOR HDPP STORM SEWER PLACED IN FILL SECTIONS

For pipe placed in fill sections, fill shall be constructed to at least 6-12 inches above the top of proposed pipe prior to trench excavation. Fill shall be placed in 12 inch lifts and shall be compacted to achieve 90% standard proctor density. Once fill is placed and compacted pipe trench shall be constructed in accordance with the Trench Excavation section of this specification.

J. FINAL BACKFILL FOR HDPP STORM SEWER

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.

K. MANHOLE CONNECTIONS FOR HDPE STORM SEWER

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.

L. MOVEMENT OF CONSTRUCTION MACHINERY

When compacting by rolling or operating heavy equipment parallel with the pipe, displacement of or injury to the pipe shall be avoided. Movement of construction machinery over a culver or

storm drain at any state of construction shall be at the Contractor's risk. Any damaged pipe shall be repair or replaced at no additional cost to the Owner.

M. INSPECTION AND TESTING

Contractor shall perform and/or provide for a TV inspection of all lines. The TV inspection shall be directed by the Engineer. TV inspection shall be performed in accordance with Technical Specification 21. For storm lines in the street, TV inspection is to be done after fill has been in place at least 30 days and to be done before final surface is placed on street. The TV inspection shall be documented in an electronic report and digital video recording, and shall document and verify the following: The overall condition of the host pipeline, line and grade, cleanliness, and that post-installation per the Contract has taken place. Cleaning of the storm drains shall be performed prior to the television inspection in a separate operation. The Contractor shall perform a television on all storm drains between manholes and all storm drain laterals. The closed circuit television inspector is to meet LFUCG's guidelines. Inspectors not listed below shall be submitted to the Engineer to confirm that the inspector meets LFUCG's guidelines.

The following closed circuit television inspectors meet LFUCG's guidelines.

| | |
|------------------------------|----------------|
| Leak Eliminators | (859) 875-2995 |
| Pipe Eyes | (859) 987-2529 |
| Martin's Pipeline Inspection | (859) 737-0890 |

When visual or TV inspection indicates a potential for excessive deflection, the following test method shall be used:

A deflection test shall be made by the contractor upon completion and acceptance of all backfill operations and prior to placement of the finished surface, if any. The deflection testing shall be witnessed by the Inspector and shall be conducted by the Contractor at the Contractor's expense. Deflection shall be tested for excessive vertical deflection using a pre-sized, rigid mandrel or "Go-No-Go" device approved by the agency. The mandrel size shall be clearly labeled and shall be sized so as to provide a diameter of at least 95% of the allowable minimum inside diameter per ASTM D2881. Elbow and wye type fittings should not be mandreled.

When visual inspection or deflection testing indicates a potential for leakage at joints rated to be watertight, follow the manufacturer's leakage test requirements. If leakage is found to exceed the maximum amount specified by the manufacturer, satisfactory correction, as approved by the Engineer, shall be made and retesting accomplished.

11.8 MEASUREMENT AND PAYMENT FOR HDPP STORM SEWER

Accepted quantities for HDPP 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 HDPP Storm Sewer satisfactorily placed. Concrete caps shall be considered as incidental and part of the piping for payment purposes. Payment as specified above shall be considered full compensation for furnishing, transportation, and installation, including excavation, backfill material, removal and relocation of disturbed utilities, backfilling and pavement, pavement saw cuts, concrete bridge, sidewalk repairs, seed, sod, mulch, fertilizer, and lime, silt fence, and all necessary material, labor equipment and incidental necessary to complete the work as required. 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. Payment for concrete curb, driveway entrances and walkways will be made under separate item.

PART III – SUBDRAINAGE

11.9 SCOPE FOR HDPE (POLYETHYLENE) & PVC SUBDRAINAGE PIPE

This work shall consist of all labor, tools, and equipment necessary for, or incidental to, the supply and installation of pipe underdrains as shown in the DRAWINGS and specified herein. This work includes trenching, placement of a geotextile fabric, rock, HDPE pipe, PVC pipe, and clean-outs to drain water from site walls, curbs and associated foundations. The WORK shall be coordinated with the work of all other trades and activities on the project.

The CONTRACTOR shall furnish all labor, tools and equipment, supplementary and miscellaneous items, appurtenances and devices incidental to or necessary for a complete installation.

11.10 MATERIALS FOR SUBDRAINAGE

A. FOOTING DRAIN COLLECTORS

1. High Density Polypropylene Pipe and Fittings (HDPP):
 - a. AASHTO M 252 or M 294, Type S Corrugated exterior and smooth interior.
 - b. Integral bell and spigot joints with O-ring rubber gasket meeting ASTM F 477.

B. GEOTEXTILE FABRIC

1. The fabric shall have complete resistance to deterioration from ambient temperatures, acid, and alkaline conditions, and shall be indestructible to microorganisms and insects. The material shall be resistant to short-term (until placement) deterioration by ultraviolet light or protected until placement, as recommended by the manufacturer, such that no deterioration occurs.
2. Fibers used in the manufacture of geotextiles, and the threads used in joining geotextiles by sewing, shall consist of long chain synthetic polymers composed of at least eighty five percent (85%) by weight polyolefins, polyesters, or polyamides. They shall be formed into a network such that the filaments or yarns retain dimensional stability relative to each other, including selvages.

3. The property values shown below are not design values, but represent the minimum accepted physical characteristics of the geotextile required. The number represents a value to be confirmed by the manufacturer. These values represent minimum average roll values (for example, any roll tested shall meet or exceed the minimum values in the table).

The property values shown below are not design values, but represent the minimum accepted physical characteristics of the geotextile required. The number represents a value to be confirmed by the manufacturer. These values represent minimum average roll values (for example, any roll tested shall meet or exceed the minimum values in the table).

| <i>Property</i> | <i>Value</i> | <i>Test Method</i> |
|--------------------------------|--------------------------------|--------------------|
| <i>Grab Strength</i> | <i>120 lbs.</i> | <i>ASTM D4632</i> |
| <i>Grab Tensile Elongation</i> | <i>55%</i> | <i>ASTM D4632</i> |
| <i>Burst Strength</i> | <i>225 psi</i> | <i>ASTM D3786</i> |
| <i>Puncture Resistance</i> | <i>65 lbs.</i> | <i>ASTM D4833</i> |
| <i>Trapezoid Tear Strength</i> | <i>50 lbs.</i> | <i>ASTM D4533</i> |
| <i>Apparent Opening Size</i> | <i>70, U.S. Standard Sieve</i> | <i>ASTM D4751</i> |
| <i>Permittivity</i> | <i>1.7 sec.-1</i> | <i>ASTM D4491</i> |
| <i>Water Flow Rate</i> | <i>140 gal./min./ft.2</i> | <i>ASTM D4491</i> |

4. Delivery, Storage and Handling: During shipment and storage, the rolls of fabric shall be protected against deterioration from the sun, mud, dirt, dust and other deleterious conditions at all times. Keep Pipe shaded from direct sunlight prior to installation in the trench.

5. Filter Fabric Drain Sleeves (Socks): Do Not Use Filter Fabric Drain pipe socks.

C. ROCK BEDDING

Unless otherwise shown in the drawings, rock shall consist of dense, clean, uniformly graded material with a maximum size of two (2) inches and less than five percent (5%) passing the three-eighths inch (3/8") sieve. Coarse concrete aggregate meeting the requirements of ASTM C33 No. 4 may be used.

D. POROUS DRAINAGE BACKFILL

1. Drainage fill rock shall consist of ¾ inch washed stone to be wrapped in filter fabric.

E. TYPE I SUBDRAINS (LONGITUDINAL SUBDRAIN PIPE)

1. Corrugated Polyethylene Tubing and Fittings (Corrugated PE)
 - a. Comply with AASHTO M 252, Type S, corrugated exterior and smooth interior.
 - b. Use only fittings supplied or recommended by pipe manufacturer for soil tight service.

- c. Slot or perforate according to AASHTO M 252, Type SP.
- d. No perforations shall be made within 6 (six) inches of either end of any pipe.
- e. Laterals, drain lines away from drainage structures and the top 10 (ten) feet of cleanout risers shall have a solid wall.

F. SUBDRAIN OUTLETS

1. Corrugated HDPP double walled
2. Coupling bands: Match annular or helical corrugations on coupling bands to pipe ends.
3. Rodent Guard: Comply with KDOT Materials
4. Cleanouts to be Type A-1 or A-1. Use 8 (eight) inch riser of the same materials as the adjacent subdrain or footing drain pipe.
5. Cleanout Cap: if PVC cap is used on top of the cleanout, drive a 1 foot length of reinforcing steel into the ground immediately adjacent to the cleanout to allow future location.

G. SUBMITTALS

Submittals shall include as a minimum the following:

1. Geotextile fabric.
2. Rock gradation results.
3. Polyethylene pipe and fittings (including slot perforation pattern).
4. HDPP pipe and fittings (including perforation pattern).

PART 3 EXECUTION

A. TRENCHING

1. The underdrain shall be trenched into the native soil a maximum of six (6) inches if so shown on the DRAWINGS to the grades shown on the DRAWINGS. The trenches shall slope uniformly at the grade shown on the DRAWINGS.

B. GEOTEXTILE FABRIC PLACEMENT

1. Wrap the perforated pipe CHANNEL (washed drainage backfill surrounding the pipe as shown in the drawings) in geotextile fabric. DO NOT wrap the pipe directly nor use filter fabric/geotextile socks.

C. ROCK BACKFILL

1. Bedding rock backfill shall be placed on the geotextile fabric to the depth shown prior to placement of the underdrain pipe. Geotextile fabric shall be placed on top of the bedding rock and the pipe placed, wrapping the geotextile fabric around the drainage channel. After the pipe and drainage channel are in place, rock shall be placed along and over the top of the wrapped pipe channel in a manner that shall not damage the pipe or channel fabric.

2. Care shall be taken not to tear any geotextile fabric during backfilling.

D. THROUGH-WALL DRAIN OUTLETS

1. 4 (four) inch PE drain pipe shall be taken through retaining walls as indicated on the drawings to drain retaining wall subdrainage pipe.
2. Install rodent guards and screens as indicated.

E. PIPE AND FITTINGS

1. All pipe and fittings shall be installed in accordance with the manufacturer's written instructions, a copy of which shall be maintained on site during pipe installation.
2. Solid Pipe: Solid PVC pipe shall be placed on six (6) inches of sand bedding, unless the native soil is capable of providing uniform support as approved by ENGINEER or shown on the drawings.

F. CLEAN-OUTS

1. Clean-out risers shall be protected from damage during the backfilling operations.
2. Where needed, the ring and cap shall be secured in place with a reinforced concrete collar.

G. MEASUREMENT AND PAYMENT FOR SUBDRAINAGE

No direct measurements or payment will be made. Excavation, proof testing, and disposal of excavated material, furnishing and placing Geotextile Fabric, drainage pipe, thru-wall pipe, screens, animal guards and drainage backfill and bedding are incidental to the installation and construction of site walls, curbs and any other structures requiring subdrainage as indicated on the drawings.

TECHNICAL SPECIFICATIONS

SECTION 12 – STORM STRUCTURES

12.1 SCOPE

Storm curb inlets, surface inlets, catch basins, drain basins, manholes, connections to existing manholes and headwalls shall be constructed and/or removed where and as indicated on the plans and/or as directed by the ENGINEER. Curb Boxes shall conform to the Lexington-Fayette Urban County or Kentucky Department of Highways Standard Drawings.

12.2 MEASUREMENT AND PAYMENT

Payment for curb inlets, surface inlets, catch basins, drain basins, manholes and headwalls will be made on the unit bid price per each, which payment shall include all material, including all masonry, covers, grates, fittings, and reinforcing steel within the limits of the structure and all excavation, backfilling and disposal of surplus and demolished materials and incidentals necessary to complete the work in place.

All pipe, filter fabric, fill material, labor and other incidentals necessary to construct the Perforated Pipe subgrade drainage at curb inlet boxes as depicted in LFUCG Standard Drawings 320 shall be considered incidental to the cost of the curb inlet boxes. Subgrade drainage shall be installed per Case 1 of the LFUCG Standard Drawing 320.

TECHNICAL SPECIFICATIONS

SECTION 13 - MANHOLES

13.1 SCOPE

Work for this Section shall consist of manhole construction for manholes as shown on the plans, and shall include removal of existing manholes and connections as needed where indicated on the plans.

At the option of the Contractor, manholes may be constructed of precast concrete manhole rings and cores. Manholes shall be constructed to conform to Lexington-Fayette Urban County Government Standard Drawings unless otherwise noted or directed by the ENGINEER. Frames and covers in street shall be adjustable as described below.

13.2 MATERIALS

- A. Precast Concrete Rings: Precast concrete rings for manholes shall conform to ASTM C478, with a minimum concrete strength of 3,500 psi, except that rings for manholes over twelve (12) feet deep shall be Class III. Rings shall be of the tongue and groove type and shall be in a proper combination of height. Bricks may not be used for leveling and adjusting height.
- B. 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 III and as specified above for Precast Concrete Rings.
- C. Sealant for Concrete Rings: Conseal or its equal shall be used as sealant.
- D. Manhole Steps: Manhole steps shall be coated cast iron or polypropylene plastic coated steel rod or of a type and size approved by the engineer. Steps shall be spaced approximately 12" to 16" o.c. vertically so as to form a continuous ladder. Steps shall be required in manholes when the structure is 4 feet and greater in depth. The threads of all steps shall have anti-skid properties for hand and foot grips. Manhole steps shall be installed in a vertical line and shall comply with OSHA standards in all respects.
- E. Manhole Frames and Covers:
Standard Circular Manhole Frame and Cover-Manhole frame and lid assembly shall have a minimum lid weight of 150 lbs. and a total minimum frame and lid weight of 385 lbs. with all steel in accordance with ASTM A-48 Class 35 spec.

Standard Adjustable Manhole Frame and Cover- Manhole frame and lid assembly shall be as per the LFUCG Standard details or approved equal and have a minimum lid weight of 150 lbs. and a total minimum frame and lid weight of 432 lbs. with all steel in accordance with ASTM A-48 Class 30 spec. Install casting with adjustments to lowest level. CONTRACTOR shall not use adjusters to match grade. Grease reservoir shall be filled.

Standard Watertight Manhole Frame and Cover- Manhole frame and lid assembly shall be Neenah#R-1916-D or approved equal, have a minimum lid weight of 150 lbs. and a total minimum frame and lid weight of 335 lbs. with all steel in accordance with ASTM A-48 Class 30 spec or higher.

Manhole covers must seat 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 V2-inch deep with 3/8-inch undercut all around. The contact surfaces of covers and corresponding rings in the rims shall be machined to provide full perimeter contact.

13.3 CONSTRUCTION METHODS

Width and Depth of Excavation of Structure:

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.

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.

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, or other material approved by ENGINEER.

In sanitary 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. Extreme care will be exercised to construct watertight manholes with particular care around inlet and outlet pipe.

Manhole Inverts: Manhole inverts shall be formed from Class "A" concrete as shown on the plans. Inverts for a "straight-through" manhole may be formed by laying the pipe straight through the manhole and carefully removing the upper portion of the pipe after the bottom is completed. 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.

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. Castings shall be ASTM A-48, Class 35.

Backfilling: Masonry Work shall be allowed to set for a period of not less than twenty four (24) hours. Outside holes 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 backfilling shall be performed until the manhole has been inspected and approved for backfilling by the ENGINEER.

Vacuum Testing for Sanitary Sewer Manholes: All sanitary sewer manholes must pass the application of a vacuum test (ASTM C1244) performed by the CONTRACTOR and witnessed by the OWNER or ENGINEER prior to acceptance by the Lexington-Fayette Urban County Government.

13.4 BASIS OF PAYMENT

Accepted quantities for Manhole Construction with appropriate frame and cover shall be paid for at the Contract Unit Price as follows and shall include all labor, excavation, materials, equipment and incidentals.

Payment will be made under:

| | |
|--|------------|
| Sanitary Sewer Manhole (4'Dia) | Each |
| Sanitary Sewer Drop Feature | Each |
| Sanitary Sewer Frame & Cover | Incidental |
| Removal of Sanitary Manholes and associated connections & fixtures | Incidental |

TECHNICAL SPECIFICATIONS

SECTION 14 - MAINTENANCE OF TRAFFIC

14.1 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 Engineer prior to the beginning of work. All bus routes, including school 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.

14.2 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.

14.3 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 nighttime 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 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.

14.4 MEASUREMENT AND PAYMENT

Payment for Maintenance of Traffic will be made on a Lump Sum unit bid price which payment shall be full compensation for all work and materials required by this section.

Dense Graded Aggregate utilized to maintain access to driveways and for maintenance of traffic shall be paid for separately under Dense Graded Aggregate.

TECHNICAL SPECIFICATIONS

SECTION 15 - SANITARY SEWER

15.1 SCOPE

Work under this Section shall be of the size indicated in the Bid Schedule and it 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. Such tasks include, but are not limited to, furnishing pipe, excavating trenches (including rock excavating), bedding, laying, jointing, testing, backfilling, grading 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.

15.2 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. The manufacturers shall submit five (5) copies of certification of tests for each lot of material represented by shipment to the job site.

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

15.3 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.

15.4 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 LFUCG Standards Specifications for sanitary sewer pipes 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 LFUCG Standard Specifications. Thickness of the lining shall be set forth in Section 4.10.1 of the aforementioned specification unless otherwise directed by the OWNER or ENGINEER. The exterior of all pipes, 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 A WW A or ANSI specifications.

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

15.5 INTERNAL PIPE DIAMETER

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

15.6 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 and 201.

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 pipelines.

15.7 PIPE BEDDING

All pipes 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 OWNER or 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 OWNER or ENGINEER, yielding and mucky materials sub grades 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 OWNER or 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.

15.8 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 insure its being 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't 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.

15.9 BACKFILING 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 tampering 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.

15.10 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 [mal 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.

15.11 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 insure equal or better results:

- A. 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.

- B. 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.
- C. 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.
- D. 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.
- E. 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.
- F. 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.
- G. 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 24inch 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 OWNER or 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.
- H. 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.

- I. Low-pressure air tests shall be performed on all gravity sanitary sewer to verify watertightness of pipe joints and connections. The Contractor shall perform testing on each manhole-to-manhole section of sewer line after placement of backfill

Testing, of Polyvinyl Chloride (PVC) and Ductile Iron (DI) pipe sewer lines, shall be performed in accordance with the current edition's of ASTM F1417, "Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air", and UNI-B-6, "Recommended Practice for Low-Pressure Air Testing of Installed Sewer Pipe" respectively. Testing, of reinforced concrete pipe sewer lines, shall be performed in accordance with the current edition of ASTM C 924, "Standard Practice for Testing Concrete Pipe Sewer Lines by Low-Pressure Air Test Method".

All testing equipment shall be inspected by the Engineer to ensure that equipment is functioning properly.

The rate of air loss in the section under test shall be determined by the time-pressure drop method. The time required in minutes for the pressure in the section under test to decrease from 3.5 to 2.5 psig shall be not less than that indicated in the referenced standards.

Immediately following the low-pressure air test the Contractor shall notify the Engineer of the test results. A Low-Pressure Air Test Report shall be completed by the Contractor during testing. The report shall be completed according to the procedures outlined in LFUCG's Construction Inspection Manual, current edition. A copy of the completed Low-Pressure Air Test Report shall be provided to the Engineer and LFUCG Division of Sanitary Sewers for each test.

Pipes failing the pressure test will not be accepted and shall be repaired or replaced until a successful test is achieved.

When conducting a low-pressure air test, the Contractor shall securely install and brace all plugs prior to pressurizing the pipe. Personnel shall not be permitted to enter manholes when the sewer pipe is pressurized.

- J. In order to test for infiltration (for concrete pipe only) the OWNER or 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.

- K. To test for infiltration, (for concrete pipe only) the OWNER or 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 OWNER or ENGINEER. This infiltration test will not be made until the sewer line is completed, the line shall be dewatered and a satisfactory test conducted to measure infiltration for at least 24 hours. The amount of infiltration, including manholes, tees and connections shall not exceed 200 gallons per nominal inch diameter per mile of sewer per 24 hours. 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.
- L. Contractor shall perform and/or provide for a TV inspection of all lines following the completion of the air test and manhole vacuum test. The TV inspection shall be directed by the Engineer. TV inspection shall be performed in accordance with the LFUCG Construction Inspection Manual, 6.64 Sanitary Sewer TV Surveys and Technical Specification 22. For sewer lines in the street, TV inspection is to be done after fill has been in place at least 30 days and to be done before final surface is placed on street. The closed circuit television inspector is to meet LFUCG's guidelines. Inspectors not listed below shall be submitted to the Engineer to confirm that the inspector meets LFUCG's guidelines.

The following closed circuit television inspectors meet LFUCG's guidelines.

| | |
|------------------------------|----------------|
| Leak Eliminators | (859) 875-2995 |
| Pipe Eyes | (859) 987-2529 |
| Martin's Pipeline Inspection | (859) 737-0890 |

15.12 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.

15.13 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.

15.14 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, materials (other than the sanitary sewer pipe), equipment, excavation, bedding, backfilling and incidental items necessary to the Work shall be included in the payment for PVC Sanitary Sewer or Ductile Iron Sanitary Sewer." Rock excavation, removal of existing pipe, concrete collars and removal of pavement and sidewalk shall also be incidental to the placement of the pipe.

Payment for PVC Lateral shall be paid for at the Unit Bid Price per Linear Foot and shall include all labor, materials, including pipe, connections, equipment, excavation, bedding, backfilling and incidental items necessary to provide a lateral from proposed sanitary sewer to existing right of way line.

Payment for "Two-Way Cleanout" shall be paid for at the Unit Bid Price per each and shall include all labor, materials, connections, equipment, excavation, bedding, backfilling, and incidental items necessary for providing a two-way cleanout and connect the existing house lateral.

TECHNICAL SPECIFICATIONS

SECTION 16 - ROADWAY AND DRAINAGE EXCAVATION

16.1 SCOPE

Roadway and drainage excavation shall consist of the removal and satisfactory disposal of all materials taken from within limits of the work contracted, meaning the calculated material lying between the original groundline and the excavation limits established or approved by the ENGINEER as shown on the final cross sections or grading plan.

In this contract, Roadway and Drainage Excavation is included under the more general bid item "Grading".

16.2 GENERAL

Included in this work shall be excavation for widened cuts and roadbeds embankment subgrades, under-cutting subgrades in cut sections, shoulders: slopes, removal of unsuitable material, ditches, waterways, intersections, approaches, balance excavation, and inlet and outlet ditches, all as indicated on the plans or as directed.

Roadway and drainage excavation shall also included removal and satisfactory disposal of miscellaneous structures removed from within the limits of the roadway and drainage cross sections such as, but not limited to, all types of pavements and pavement bases, whether rigid or flexible; sidewalks; all curbs and curbs and gutters; and all conduits that have no salvage value, such as unserviceable drainage pipe, sewer pipe, waterlines, and other unserviceable utility lines. The plans may, or may not indicate the exact locations of the various types and quantities of these miscellaneous items to be removed and disposed of; however, it is the intent of these specifications that the removal of any such items that fall within the limits of the roadway and drainage cross sections as here in before defined, whether or not shown on the plans, shall be included in Roadway and Drainage Excavation.

When quantities and bid items are shown on the plans or in the proposal for the removal of various types of miscellaneous items, it is the intent of these specifications that such quantities and bid items shall include only those miscellaneous structures that are found outside of the roadway and drainage cross sections.

Except as otherwise specifically stated roadway and drainage excavation shall also include inlet and outlet ditches, regardless of the classification of the material encountered, whether shown or not shown on the plans and whether or not on the right-of-way as shown. When the work is extended by the OWNER beyond the project area limits shown on the plans, easements or additional property will be obtained by the OWNER.

All drilling, grinding, and sawing of rock, shale, concrete and other similar dust producing materials shall be performed in accordance with the requirements of the ENGINEER.

All excavation operations shall be conducted in accordance with the applicable requirements of Section 02100, Erosion Control, and Section 02105, Water Pollution Control.

Clearing and grubbing operations for excavation areas shall be completed prior to beginning excavation operations. The CONTRACTOR shall be responsible for and shall take all necessary precautions to protect and preserve any and all existing culverts, pipelines, conduits, subdrains, or parts thereof which may be affected by his operations on the contract and which, in the judgment of the ENGINEER, may be continued in use without any change. The CONTRACTOR shall, at his own expense, satisfactorily repair or replace any damaged part of any such culvert, pipeline, conduit, or subdrain which may result from his operations or negligence during the life of the contract.

During construction, all areas affected by excavation shall be maintained at all times in such condition that it will be well drained.

16.3 CLASSIFICATION

Without regard to the materials encountered, all roadway and drainage excavation shall be **unclassified** and shall be designated as Roadway Excavation. It shall be distinctly understood that any reference to rock, earth, or any other material on the plans or cross sections, whether in numbers, words, letters, or lines, is solely for the OWNER'S information and is not to be taken as an indication of classified excavation or the quantity of either rock, earth, or any other 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 compensation when the materials encountered are not in accord with the classification shown.

16.4 SLOPES

All excavation shall be performed in such a manner as will ensure against removing or loosening any material outside of the required slopes. Slopes shall be shaped to reasonable close conformity with the lines and cross sections shown on the plans, with no deviations, therefrom readily discernible from the road, except as otherwise directed. All rock cut slopes shall be left with a reasonable uniform surface and all loose and overhanging rock shall be removed. Under no condition shall holes be gouged or dug in back slopes or in embankment slopes.

The slopes in cuts may be varied by the ENGINEER during construction, depending upon the material encountered in excavation. The cuts may be widened and the slopes may be varied to secure sufficient material for the formation of embankment and shoulders, to prevent landslides, to improve sight distance, or for any other reasons that such widening or variations are deemed to be to the best advantage of the work. When a cut is made on any section of the roadway in any material that may slide, the excavation shall be removed to the slope lines as designated on the plans or as directed, and no vertical slopes will be allowed during the process of excavation of such cuts, except in stage construction when material is left in cuts for future shoulder construction. No payment will be made for any excavated material, which is used for purposes other than those designated.

16.5 DITCHES

Ditches shall include inlet and outlet ditches and such other ditches as may be required for the satisfactory completion of the work.

16.6 USE OF EXCAVATED MATERIALS

All suitable material removed from excavation shall be used, insofar as practicable, in the formation of embankments, subgrade, or shoulders; as backfill for structures or for other purposes shown on the plans or as directed. No payment will be made for any excavated materials used for any purpose other than that indicated on the plans or approved.

All sod and soft or spongy material shall be removed and disposed of as directed. Such materials shall not be used in the construction of the grade, except as provided in the current LFUCG Roadway Manual and KYTC Road and Bridge Construction Standard Specifications..

All rocks and boulders, when directed, shall be placed in the embankments, provided the embankments are of sufficient depth to provide 12 inches or more soil cover over such rocks or boulders placed within the shoulder limits. Such rock and boulders shall be placed under the shoulders rather than under the pavement foundation when the embankment is constructed principally of soils.

Material wasted off the project area shall be placed on sites approved by the OWNER and obtained by the CONTRACTOR at no cost to the OWNER. The owner of the site will be required to obtain an LFUCG Grading Permit, which includes the preparation of a BMP Plan. All waste shall be placed to avoid the obstruction of drainage, and the wasted material shall be seeded and protected using the appropriate application rates of agricultural limestone, fertilizer, seed, and mulch as directed on the BMP Plan.

The CONTRACTOR shall be responsible for all permitting and legalities associated with offsite disposal of materials. The CONTRACTOR shall be responsible for any fines associated with not complying with sediment erosion control plans, releases of sewage, etc.

The CONTRACTOR shall furnish to the OWNER copies of written agreement with the property OWNER, approval of the OWNER(S) of utilities of any nature existing within the proposed waste area.

16.7 ROADBED

In addition to the limits of the roadbed, the work required herein shall extend to the ditch lines or curb lines in cuts when so directed. Work under this section shall conform to the KYTC Road & Bridge Specifications current edition.

Where rock is encountered in the excavation, it shall be removed between ditch lines or curb lines to a depth below the required grade as shown on the plans with no points of rock projecting above such depth. The final surface of the rock shall be left so that complete drainage will be provided, and no water will be pocketed at any point. The refill over this surface shall be made of selected materials and shall contain no stone or spalls larger than 4 inches. All refill shall be placed in layers not exceeding 12 inches in depth, loose measurement, and compacted as specified in Section 02223. No allowance will be made for excavation and refill material to a greater depth below the required grade than as shown on the plans. Where not designated on the plans, the refill material shall be selected by the ENGINEER.

In cut sections the roadbed, whether it consists of existing material or refill material, shall be compacted in accordance with the requirements of the current LFUCG Roadway Manual and KYTC Road and Bridge Construction Standard Specifications.

When the material in place does not contain sufficient moisture to obtain proper compaction, the roadbed shall be thoroughly scarified and broken to minimum depth of 6 inches, the moisture content increased as directed, and the roadbed compacted. Material unsuitable for the roadbed, when encountered at subgrade elevation, shall be removed to such depths as indicated on the plans or as directed, and disposed of as directed and replaced with #2 stone. Material that is unstable due to excessive moisture but that is otherwise suitable for the roadbed shall either be scarified, allowed to dry, and compacted; or removed, dried, and used for refill or embankment, as directed by the ENGINEER. Manipulation to speed drying will be permitted. No additional payment will be made for scarifying or manipulation necessary to increase or decrease the moisture content as this is considered incidental to the work. Payment will be made for the #2 stone used to fill the excavated area, the existing material to be removed shall be incidental to the #2 stone backfill (No. 2 Stone Bridging). When the ENGINEER directs that the material removed be wasted or requires the material to be used as refill or in embankment, then any additional material necessary for .refill will be incidental to Roadway Excavation.

The CONTRACTOR shall conduct roadway excavation operations so that a sufficient quantity of selected materials is available, stockpiled, or otherwise reserved for providing the required volume of material necessary to complete the roadbed in accordance with the plans and as indicated herein.

16.8 METHOD OF MEASUREMENT

Roadway and drainage excavation will not be measured for direct payment. Water used to provide sufficient moisture for compaction of the roadbed in cut sections will not be measured for separate payment but will be considered incidental to other items in the contract.

16.9 PAYMENT FOR DESIGN QUANTITIES

Final payment made for the quantity shown on the Form of Proposal, which quantity the Engineer believes reflects the neat lines of the cross sections, increased or decreased by authorized adjustments.

16.10 AUTHORIZED ADJUSTMENTS

Adjustments to the design quantities of Roadway Excavation authorized by the OWNER or ENGINEER will be made only for the following purposes:

Include changes in the quantity of work due to benching, changing slopes or grades, removing slides, and any other procedures required by the OWNER or ENGINEER on the project.

16.11 MISCELLANEOUS ITEMS

Removing and salvaging or disposal of all other items within the project area or easements not included in this Section such as guardrails, headwalls, inlet boxes, etc., whether shown on the plans or not shall be considered incidental to the contract and no direct payment shall be allowed, unless otherwise provided.

In removing manholes, catch basins, and inlets, any live sewers connected thereto shall be rebuilt and properly reconnected, and satisfactory by-pass service shall be maintained during such construction operations.

16.12 BASIS OF PAYMENT

No direct payment will be made for roadway and drainage excavation.

TECHNICAL SPECIFICATIONS

SECTION 17 - EROSION AND SEDIMENT CONTROL

17.1 SCOPE OF WORK

- A. The Contractor shall furnish all labor, materials, and equipment required for installing, maintaining, amending, and removing temporary soil erosion, sediment, and pollutant controls as shown in the Stormwater Pollution Prevention Plan (SWPPP) and as specified herein and as required by the LFUCG Land Disturbance Permit, Chapter 16-Article X, Division 5 of the LFUCG Code of Ordinances, and the KPDES General Permit for Stormwater Discharges Associated with Construction Activities (KYR10).
- B. The Contractor shall take all site management measures necessary to minimize erosion and contain sediment, construction materials (including excavation and backfill), and pollutants (such as chemicals, fuels, lubricants, bitumen, raw sewage, and other harmful waste) and prevent them from being discharged into or alongside any body of water or into natural or man-made channels leading thereto.
- C. The Contractor shall at all times minimize disturbance and the period of time that the disturbed area is exposed without stabilization practices. In “critical areas” (within 25 feet of a stream) erosion prevention measures such as erosion control mats/blankets, mulch, or straw blown in and stabilized with tackifiers or by treading, etc shall be implemented on disturbed areas within 24 hours or “as soon as practical” after completion of disturbance/grading or following cessation of activities.
- D. Temporary erosion controls include, but are not limited to grassing, mulching, seeding, providing erosion control and turf reinforcement mats on all disturbed surfaces including waste area surfaces and stockpile and borrow area surfaces; scheduling work to minimize erosion and providing interceptor ditches at those locations which will ensure that erosion during construction will be either eliminated or maintained within acceptable limits.
- E. Temporary sedimentation controls include, but are not limited to, silt dams, traps, barriers, and appurtenances on sloped surfaces which will ensure that sedimentation pollution will be either eliminated or maintained within acceptable limits.
- F. Contractor is responsible for providing and maintaining effective temporary erosion and sediment control measures prior to and during construction or until final controls become effective.
- G. Prior to construction, the Contractor shall obtain a LFUCG Land Disturbance Permit and shall obtain coverage under the KPDES General Permit for Stormwater Discharges Associated with Construction Activities (KYR10) (see Article 3.24 in this Section). The Contractor shall be responsible for placement of pollutant, erosion, and sedimentation controls as shown in the Stormwater Pollution Prevention Plan (SWPPP) prior to

excavation, fill or grade work. If during the course of construction, the state and/or LFUCG determine additional controls are required, the Contractor shall furnish, install and maintain additional mulch, blankets, sediment barriers, and/or other controls as necessary to control pollution, erosion, and sedimentation to the satisfaction of the regulatory agency.

- H. The Contractor shall inspect and repair all erosion and sedimentation controls as follows:
 - 1. At least once every seven (7) calendar days, and
 - 2. Within 24 hours after any storm event of 0.5 inch or greater.
- I. Final stabilization practices on those portions of the project where construction activities have permanently ceased shall be initiated within fourteen (14) days of the date of cessation of construction activities. Temporary stabilization practices on those portions of the project where construction activities have temporarily ceased shall be initiated within fourteen (14) days of the date of cessation of construction activities.
- J. **Erosion and Sediment Control prevention measures shall be installed prior to removal of vegetation and/or stripping of topsoil.** The Contractor is responsible for preparing and submitting the state Notice of Intent and attachments and obtaining state permit approval prior to the beginning of any construction activities.

17.2 PERMITS AND NOTIFICATION REQUIREMENTS

- A. The Contractor is responsible to prepare a Stormwater Pollution Prevention Plan (SWPPP) for inclusion with permit submittals. The Contractor may elect one of the following options to meet this requirement:
 - 1. Utilize the SWPPP (which includes the Erosion and Sediment Control Plan) provided in the Construction Drawings and prepared by the Owner's Engineer and take sole responsibility for implementing the SWPPP, or
 - 2. Provide a SWPPP, including an Erosion and Sediment Control Plan, prepared by a professional engineer licensed in the Commonwealth of Kentucky, meeting all of the requirements of KYR10 and Chapter 16-Article X, Division 5 of the LFUCG Code of Ordinances.
- B. The Contractor shall submit a Notice of Intent specifically for Construction Activities (NOI-SWCA) before beginning any site disturbance, and shall implement erosion, sediment and pollution control measures as may be required by state, local and federal agencies. Contractor shall submit a signed Notice of Intent form and required attachments to the Division of Water at least seven (7) days, if an electronic submittal or thirty (30) days if a written submittal, prior to beginning of construction activity. **See Article 3.24 in this Section for detailed requirements.**

- C. A Land Disturbance Permit shall be obtained from the Lexington-Fayette Urban County Government. See Article 3.25 in this Section for detailed requirements.
- D. The Contractor shall comply with all additional requirements of LFUCG. It is the Contractor's responsibility to provide evidence to the Owner that all permits have been obtained prior to initiation of construction.

17.3 RELATED WORK

- A. Section 02371 – Storm Water Pollution Prevention Plan (SWPPP)
- B. Section 02373 – Stream Crossings, Streambank Restoration, and Stream Buffer Restoration
- C. Applicable LFUCG Storm Water Manual Standard Drawings are included at the end of this Section 02372.

PART 2 – MATERIALS

17.4 MULCH

- A. Mulch shall be used as a soil stabilization measure for any disturbed area inactive for 14 days or longer. Areas requiring stabilization during December through February shall receive only mulch held in place with bituminous material. Mulching shall be used whenever permanent or temporary seeding is used. The anchoring of mulch shall be in accordance with the Construction Drawings except all mulch placed in December through February shall be anchored with bituminous materials regardless of the slope. Permanent mulches shall be used in conjunction with planting trees, shrubs, and other ground covers that do not provide adequate soil stabilization.
- B. Straw shall come from wheat, rye, or barley and may be spread by hand or machine. Straw shall be anchored. Straw shall be applied at two tons per acre or 90 pounds per 1,000 square feet. Straw shall be free from weeds and coarse matter.
- C. Wood chips do not require tacking. Wood chips shall be applied at 40 cubic yards per acre or 1 cubic yard per 1,000 square feet and approximately 2 inches deep. Wood chips shall be treated with 20 pounds of nitrogen per acre or shall be treated with 12 pounds slow-release nitrogen per ton to prevent nutrient deficiency in plants.
- D. Bark chips or shredded bark shall be applied at 70 cubic yards per acre or 1.5 to 2 cubic yards per 1,000 square feet and about one-half inch thick. Bark does not require additional nitrogen fertilizer.

- E. Manufacturer's recommendations shall be followed during application of manufactured wood fiber and recycled paper sold as mulch materials applied in a hydroseeder slurry with binders/tackifiers. Recycled paper (newsprint) or wood fiber shall be mixed at 50 pounds per 100 gallons of water and applied according to manufacturer's recommendations and model of hydroseeder in use.
- F. Liquid mulch binders/tackifiers shall be applied according to manufacturer's recommendations. Chemical soil stabilizers or soil binders/tackifiers/emulsions shall not be used alone.
- G. Netting and mats shall be used in critical areas such as waterways where concentrated flows are expected.
- H. Before the gravel or crushed stone is applied, it shall be washed. Aggregate cover shall only be used in relatively small areas and shall be incorporated into an overall landscaping plan.

17.5 TEMPORARY SEED

- A. Temporary seeding shall be used for soil stabilization when grades are not ready for permanent seeding, except during December through February. The seed shall be applied within 14 days after grading has stopped. Only rye grain or annual rye grass seed shall be used for temporary seeding.

17.6 PERMANENT SEED

- A. Permanent seeding shall be applied within 14 days after final grade has been reached, except during December through February. Permanent seeding shall also be applied on any areas that will not be disturbed again for a year even if final grades have not been reached. The use of mulch and erosion matting and netting with permanent seeding shall be in accordance with applicable sections of this Specification. "Seed mats" may be used for permanent seeding in accordance with manufacturers' recommendations.
- B. Permanent seeding shall be used on disturbed areas where permanent, long-lived vegetative cover is needed to stabilize the soil and on rough graded areas that will not be brought to final grade for one year or more.
- C. The area to be seeded shall be protected from excess runoff as necessary with diversions, grassed waterways, terraces, or sediment ponds.
- D. Contractor shall use the following Permanent Seed Mix, with the following exceptions:
 - a. If a property owner landscaping agreement differs from this specification, the property owner landscaping agreement shall be followed on that property, or

- b. The area to be seeded is within 25 feet of a stream bank, in which case Contractor shall follow the seed mix provided in Section 02373, or
- c. The Construction Drawings identify a different seed mix.

The Permanent Seed Mix shall consist of the following mix spread at a rate of 12.5 pounds/1,000 square feet:

| Common Name | % | lbs per 1,000 sq. ft. |
|---------------------------|------|-----------------------|
| Bluegrass | 24% | 3 |
| Perennial ryegrass (turf) | 16% | 2 |
| + bluegrass | 20% | 2.5 |
| Tall fescue (turf type) | 32% | 4 |
| + bluegrass | 8% | 1 |
| TOTAL | 100% | 12.5 |

- E. Vegetative cover alone shall not be used to provide erosion control cover and prevent soil slippage on a soil that is not stable due to its structure, water movement, or excessive slope.
- F. Permanent seeding may be done at any time except December through February.
- G. Soil material shall be capable of supporting permanent vegetation and have at least 25 percent silt and clay to provide an adequate amount of moisture holding capacity. An excessive amount of sand will not consistently provide sufficient moisture for good growth regardless of other soil factors.
- H. Fertilizer shall be applied at a rate of 800 pounds per acre of 10-10-10 analysis or equivalent, unless soil test results indicate a different rate is appropriate. Lime shall be applied at a rate of 100 pounds per 1,000 square feet or two tons per acre of agricultural ground limestone, unless soil test results indicate differently.

17.7 SOD

- A. Sod shall be used for disturbed areas that require immediate vegetative cover, *e.g.*, the area surrounding a drop inlet in a grassed waterway, the design flow perimeter of a grassed waterway that will convey flow before vegetation can be established, and the inlet of a culvert. Sod may be installed throughout the year. "Seed mats" and seed with geotextiles may be used in place of sod when done in accordance with manufacturers' recommendations.
- B. Contractor shall use tall fescue sod, unless another species is specified in the Construction Drawings or unless the property owner landscaping agreement differs from this specification.

- C. Sod shall not be used to provide erosion control and prevent soil slippage on a soil that is not stable due to its structure, water movement, or excessive slope.
- D. Sod shall be installed within 36 hours of digging and removal from the field. Sod should not be used on slopes steeper than 2H:1V. If it is to be mowed, installation should be on slopes no greater than 3H:1V.
- E. Soil material shall be capable of supporting permanent vegetation and shall consist of at least 25 percent silt and clay to provide an adequate amount of moisture holding capacity. An excessive amount of sand will not consistently provide sufficient moisture for the sod regardless of other soil factors.
- F. Fertilizer shall be applied at a rate of 1,000 pounds per acre of 10-10-10 analysis or equivalent, unless soil test results indicate a different rate is appropriate. Lime shall be applied at a rate of 100 pounds per 1,000 square feet or two tons per acre of agricultural ground limestone, unless soil test results indicate differently.
- G. The sod shall consist of strips of live, vigorously growing grasses. The sod shall be free of noxious and secondary noxious weeds and shall be obtained from good, solid, thick-growing stands. The sod shall be cut and transferred to the job in the largest continuous pieces that will hold together and are practical to handle.
- H. The sod shall be cut with smooth clean edges and square ends to facilitate laying and fitting. The sod shall be cut to a uniform thickness of not less than three-fourth inch measured from the crown of the plants to the bottom of the sod strips for all grasses except bluegrass. Bluegrass sod shall be cut to a uniform thickness of not less than one and one-half inches.
- I. The sod shall be mowed to a height of not less than two inches and no more than four inches prior to cutting.
- J. The sod shall be kept moist and covered during hauling and preparation for placement on the sod bed.

17.8 ROAD/PARKING STABILIZATION

- A. Gravel or paved material shall be used to stabilize permanent roads or parking areas or roads or parking areas used repeatedly by construction traffic. Stabilization shall be accomplished within 14 days of grading or initiation of use for construction traffic. Unstabilized roads are not acceptable except in instances where the road will be used less than one month.
- B. Road/parking stabilization shall be used wherever roads or parking areas are constructed, whether permanent or temporary, for use by construction traffic.

- C. Stabilization shall be accomplished with a minimum depth of six inches of crushed stone. Stabilized construction roadbeds shall be at least 14 feet wide for one-way traffic and at least 20 feet wide for two-way traffic.
- D. Temporary roads shall follow the contour of the natural terrain to the extent possible. Slopes shall not exceed 10 percent.
- E. Temporary parking areas shall be located on naturally flat areas to minimize grading. Grades shall be sufficient to provide drainage but shall not exceed 4 percent.
- F. All cuts and fills shall be 2H:1V or flatter.
- G. Drainage ditches shall be provided as needed.
- H. Crushed stone shall be KYTC aggregate No. 2 (1.5 to 3 inches in diameter), or equivalent.

17.9 CONSTRUCTION ENTRANCE

- A. A stabilized construction entrance shall be constructed wherever vehicles are leaving a construction site to enter a public road or at any unpaved entrance/exit location where there is a risk of transporting mud or sediment onto paved roads. A construction entrance shall be constructed at the beginning of the project before construction traffic begins to enter and exit the site.
- B. A stabilized construction entrance shall be constructed of crushed stone a minimum of 6 inches thick laid over geotextile (filter fabric).
- C. The width shall be at least 20 feet and as wide as the entire width of the access. At sites where traffic volume is high, the entrance shall be wide enough for two vehicles to pass safely. The length shall be at least 50 feet, and where practical, shall be extended to 100 feet. The entrance shall be flared where it meets the existing road to provide a turning radius.
- D. Stormwater and wash water runoff from a stabilized construction entrance shall drain to a sediment trap or sediment pond. If conditions on the site are such that the majority of the mud is not removed by the vehicles traveling over the gravel, then the tires of the vehicles shall be washed before entering a public road.
- E. Pipe placed under the entrance to handle runoff shall be protected with a mountable berm.
- F. Dust control shall be provided in accordance with the applicable sections of this Specification.

- G. Crushed stone shall be KYTC aggregate No. 2 (1.5 to 3 inches in diameter), or equivalent.
- H. Geotextile filter fabric shall be KYTC Type III.

17.10 DUST CONTROL

- A. Dust control measures shall be implemented on the site.
- B. Construction activities shall be phased to minimize the total area unstabilized at any given time, thereby reducing erosion due to air and water movement.
- C. Construction roads shall be watered as needed to minimize dust.
- D. Existing trees, shrubs, and ground cover shall be retained as long as possible during the construction. Initial land clearing should be conducted only in those areas to be regraded or where construction is to occur. Areas to be cleared only for new vegetation or landscaping shall be stabilized with seed and mulch immediately following clearing.
- E. Vegetative cover is the most effective means of dust and erosion control, when appropriate. See sections on Temporary Seed, Permanent Seed, Mulch, and Sod of this Specification.
- F. When areas have been regraded and brought to final grade, they shall be stabilized using temporary or permanent seed and mulch or other measures.
- G. Mulch with mulch binders may be used as an interim dust control measure in areas where vegetation may not be appropriate.
- H. See sections on Temporary Seed, Permanent Seed, Sod, Mulch, Road/Parking Stabilization, and Construction Entrance of this Specification.

17.11 NETS AND MATS

- A. Mulch netting, erosion control matting, or turf reinforcement matting (TRM) shall be used on sloping areas as indicated in the Construction Drawings. Mats or nets and permanent seeding may be used as an alternate to sod for culvert entrances and grassed waterways. TRMs shall be used at the water line to control wave action in wet ponds. TRMs shall be used in accordance with manufacturer's recommendations. Erosion control matting may be used to stabilize channels and swales and on recently planted slopes to protect seedlings until they become established.
- B. Effective netting and matting shall require firm, continuous contact between the materials and the soil. If there is no contact, the material will not hold the soil and erosion will occur underneath the material.

- C. Nets and mats shall be suitable for their intended purpose and shall be as indicated in the Construction Drawings.

17.12 TEMPORARY DIVERSION DITCH

- A. Temporary diversion ditches shall be used to collect sediment-laden runoff from disturbed areas and direct it to a sediment pond where applicable. Temporary ditches are those expected to be in use for less than one year. Temporary diversion ditches do not require stabilization, unless otherwise indicated on the Construction Drawings.
- B. Temporary diversion ditches shall have stable outlets. The combination of conditions of site, slopes, and soils should be so that the ditch can be maintained throughout its planned life.
- C. Temporary diversion ditches shall not be constructed below high sediment-producing areas unless land treatment practices or structural measures, designed to prevent damaging accumulations of sediment in the channels, are installed with or before the diversion.
- D. A typical diversion cross section consists of a channel and a supporting ridge. In the case of an excavated-type diversion, the natural ground serves as the diversion ridge. Diversion cross sections shall be adapted to the equipment that will be used for their construction and maintenance.
- E. The channel may be parabolic or trapezoidal in shape. V-shaped ditches shall not be constructed.
- F. Diversions shall be located so that water will empty onto an established area such as a stable watercourse, waterway, or structure.
- G. Any high sediment-producing area above a diversion shall be controlled by good land use management or by structural measures to prevent excessive sediment accumulation in the diversion channel.
- H. Temporary diversions above steep slopes or across graded rights-of-way shall have a berm with a minimum top width of 2 feet, side slopes of 2:1 or flatter and a minimum height of 18 inches measured from the channel bottom.
- I. Diversions installed to intercept flow on graded rights-of-way shall be spaced 200 to 300 feet apart.
- J. A level lip spreader shall be used at diversion outlets discharging onto areas already stabilized by vegetation.

17.13 LEVEL SPREADER

- A. Level spreaders shall be constructed at the outlets of temporary diversion ditches. Level spreaders shall also be constructed at outlets of permanent constructed waterways where they terminate on undisturbed areas.
- B. The length of the level spreader shall be constructed as shown on the Construction Drawings.

17.14 PERMANENT CONSTRUCTED WATERWAY

- A. Permanent constructed waterways shall be used to divert stormwater runoff from upland undisturbed areas around or away from areas to be disturbed during construction. A waterway expected to be in place for at least one year shall be considered permanent. Permanent waterways shall be lined with sod or permanent seeding and nets, mats, or TRMs.

17.15 PIPE SLOPE DRAIN

- A. Pipe slope drains shall be used whenever it is necessary to convey water down a steep slope, which is not stabilized or which is prone to erosion, unless paved ditch (flume) is installed.
- B. Contractor shall use a 10-inch diameter pipe or larger to convey runoff from areas up to one-third acre; 12-inch or larger pipe for up to half-acre drainage areas; and 18-inch pipe for areas up to one acre, unless otherwise specified in the Construction Drawings. Multiple pipes shall be required for large areas, spaced as shown on the Construction Drawings.
- C. The pipe shall be heavy duty flexible tubing designed for this purpose, *e.g.*, non-perforated, corrugated plastic pipe, or specially designed flexible tubing.
- D. A standard flared end section or a standard T-section fitting secured with a watertight fitting shall be used for the inlet.
- E. Extension collars shall be 12-inch long sections of corrugated pipe. All fittings shall be watertight.

17.16 IMPACT STILLING BASIN

- A. Impact stilling basins shall be used at the outlet of culverts and storm sewers with calculated exit velocities greater than 15 feet per second when flowing full.

17.17 CHECK DAM

- A. Check dams shall be limited to use in small, open channels that drain 10 acres or less.
- B. Check dams shall not be used in streams.
- C. Check dams can be constructed of stones, coir logs, or wood fiber logs.
- D. Check dams shall be constructed prior to the establishment of vegetation.
- E. The maximum height of a check dam shall be three feet above the ground on which the rock is placed.
- F. The center of the portion of the check dam above the flat portion of the channel shall be at least 1 foot lower than the outer edges. The outer edges of the check dam shall extend up the side slopes of the channel to a point 3 feet in elevation above the center portion of the check dam or to the top of the side slopes.
- G. The maximum spacing between rock check dams in a ditch should be such that the toe of the upstream dam is at the same elevation as the top of the next downstream dam.
- H. The spacing of coir and wood fiber check dams is one log every 100 feet for velocities of 5 fps, 50 feet for velocities between 5 and 7.5 fps, and 25 feet for velocities greater than 10 fps, unless otherwise shown in the Construction Documents.
- I. Stone check dams shall be constructed of KYTC Class II channel lining.
- J. Coir log or wood fiber log check dams shall be constructed of a single log with a diameter of at least 20 inches.

17.18 SEDIMENT TRAP

- A. Sediment traps shall be installed below all disturbed areas of less than 5 acres that do not drain to a sediment pond.
- B. Erosion control practices such as seeding, mulching, sodding, diversion dikes, etc., shall be used in conjunction with sediment traps to reduce the amount of sediment flowing into the trap. The amount of sediment entering a trap can be reduced by the use of stabilized diversion dikes and ditches.
- C. The trap shall not be located in a stream. It shall be located to trap sediment-laden runoff before it enters the stream.
- D. Trap depth shall be at least 2 feet at the inlet and 4 feet at the outlet. Effective trap width shall be at least 10 feet and trap length shall be at least 30 feet.

- E. The Construction Drawings shall indicate the final disposition of the sediment trap after the upstream drainage area is stabilized. The Construction Drawings shall indicate methods for the removal of excess water lying over the sediment, stabilization of the pond site, and the disposal of any excess material.

17.19 SEDIMENT POND

- A. 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.
- B. Design and construction shall comply with all federal, state, and local laws, ordinances, rules, and regulations regarding dams.
- C. Erosion control practices such as seeding, mulching, sodding, diversion dikes, etc., shall be used in conjunction with sediment ponds to reduce the amount of sediment flowing into the pond.
- D. The pond shall not be located in a stream. It shall be located to trap sediment-laden runoff before it enters the stream.
- E. Contractor shall construct the sediment pond as shown on the Construction Drawings.
- F. Permanent ponds designed for stormwater detention or water quality treatment may serve as temporary sediment ponds if site conditions make the use of these structures desirable. At the time of conversion from a sediment pond to a permanent stormwater management pond, excess sediment shall be cleaned from the pond. If the pond is converted to a water quality basin, the sand in the sand filter outlet shall be replaced with clean sand unless it is shown to be clean.
- G. The Construction Drawings shall indicate the final disposition of the sediment pond after the upstream drainage area is stabilized. The Construction Drawings shall indicate methods for the removal of excess water lying over the sediment, stabilization of the pond site, and the disposal of any excess material.
- H. Vegetation shall be established upon completion of construction of the embankment, emergency spillway and other areas disturbed by construction.

17.20 SILT FENCE

- A. Silt fence shall be installed down-slope of areas to be disturbed prior to clearing and grading. Silt fence shall 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.
- B. Do Not install silt fences in streams, swales, ditch lines or any areas of concentrated flow where discharge rates are likely to exceed 1 cubic foot per second (cfs).

- C. 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:

| <u>PHYSICAL PROPERTY</u> | <u>REQUIREMENTS</u> |
|--------------------------|----------------------------------|
| Filtering Efficiency | 80% (minimum) |
| Tensile Strength at 20% | 50 lbs./linear inch (minimum) |
| Flow Rate | 0.3 gal./ sq. ft/ min. (minimum) |

- D. 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.
- E. 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.
- F. 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.

17.21 STORM DRAIN INLET PROTECTION

- A. Storm drain inlet protection may be utilized on drop inlets and curb inlets.
- B. Storm drain inlet protection shall only be used around drop inlets when the up-slope area draining to the inlet has no other or inadequate sediment control.
- C. The drainage area shall be no greater than 1 acre.
- D. 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.
- E. Inlet protection devices shall be constructed in such a manner that any resultant ponding of stormwater will not cause flooding or excessive inconvenience or damage to adjacent areas, roadways, properties, or structures.
- F. Inlet protection devices are low flow filter devices, and as such shall be constructed in such a manner as to allow for higher flows to bypass into the storm drain system to prevent flooding of the roadway or downstream properties.

17.22 FILTER STRIP

- A. Filter strips shall be used on each side of permanent constructed channels.

- B. Filter strips shall only be used to remove sediment from overland flow. Filter strips are not effective in removing sediment from concentrated flows.
- C. If vegetative filters are proposed as a sediment control device and they do not already exist, they shall be planted and established prior to initiating land disturbing activities.
- D. The minimum filter strip width shall be 50 feet for streams, wetlands, and sinkholes. The minimum filter strip width shall be ten feet for constructed waterways.
- E. Where a post development floodplain or wet weather conveyance is being protected, filter strips shall be provided on each side. When a wetland or sinkhole is being protected, filter strips shall be provided around the perimeter.
- F. Contractor shall construct the filter strips as shown on the Construction Drawings.
- G. 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. The following chart provides a list of alternative grass and grass/legume mixtures:

SEEDING MIXTURE AND SITE SUITABILITY CHART

| Seeding Mixture | Rate lbs/acre | Soil Suitability |
|--|------------------------|---------------------|
| Alfalfa <i>Or</i> Red Clover <i>Plus</i> Timothy <i>Or</i> Orchardgrass <i>Or</i> Bromegrass | 6 10 4 6 6 | Well Drained |
| Landino <i>Plus</i> Timothy <i>Or</i> Orchardgrass <i>Or</i> Bromegrass | .05 4 6 8 | Wet or Well-Drained |

Notes:

1. All seeding shall be in accordance with the seeding sections of this Specification.
2. Well drained sites include sites that are drained with tile as well as naturally well drained and droughty sites. Wet sites include sites that are excessively wet only a portion of the growing season.

17.23 STREAM CROSSING

- A. 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, and shall be considered a permanent structure.
- B. Temporary stream crossings are applicable to flowing streams with drainage areas less than one square mile. Temporary stream crossings shall be planned to be in service for the shortest practical period of time and to be removed as soon as their function is completed.
- C. All such structures, whether temporary or permanent, are subject to the rules and regulations of the U.S. Army Corps of Engineers for in-stream modifications (404 Permitting) and the Kentucky Division of Water (401 Certification). No stream crossing shall be installed without first obtaining all applicable local, state, and federal permits.

Where culverts are to be installed, compacted soil or rock shall be used to form the crossing. The depth of soil or rock cover over the culvert shall be equal to one-half the diameter of the culvert or 12 inches, whichever is greater. The sides of the fill shall be protected from erosion using the mulching and seeding erosion control measures specified in this Specification.

- D. All stream crossings shall be constructed in such a manner as to avoid flooding or excessive inconvenience or damage to adjacent areas, roadways, properties, or structures.
- E. When using a culvert crossing, the top of a compacted earth fill shall be covered with six inches of KYTC No. 57 stone.
- F. KYTC No. 57 stone shall also be used for the stone pads forming the crossing approaches.

17.24 PUMP AROUND FLOW DIVERSION

- A. 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 of sediment or deposition of sediment in the stream.
- B. Check dams to form the diversion shall span the banks of the stream. Maintain 1-foot freeboard (minimum) on the upstream and downstream checks.
- C. Check dams may be constructed of sandbags or may be a water-filled bladder such as an Aqua-Barrier.

- D. The dewatering flow from the work area shall be treated in a sediment-trapping device prior to discharge to the stream.
- E. Sandbags shall be woven polypropylene bags with approximate dimensions of 18-1/2 inches by 28 inches. Contractor shall tie the ends of filled bags closed using either draw strings or wire ties.

17.25 CONSTRUCTION DEWATERING

- A. Sediment-laden water shall be pumped to a dewatering structure before it is discharged.

PART 3 - EXECUTION

17.26 GENERAL

- A. Erosion and sediment control practices shall be consistent with the requirements of the state and local regulatory agencies and in any case shall be adequate to prevent erosion of disturbed and/or regraded areas.
- B. Contractor is responsible for notifying the state regulatory agency concerning inclusion under the KPDES General Permit for Storm Water Discharges Associated with Construction Activities.
- C. Gravity sewer lines, force mains and water lines that cross streams shall be constructed by methods that maintain normal stream flow and allow for a dry excavation. Water pumped from the excavation shall be contained and allowed to settle prior to reentering the stream. Excavation equipment and vehicles shall operate outside of the flowing portion of the stream. Spoil material from the line excavation shall not be allowed to enter the flowing portion of the stream. The provisions of this condition shall apply to all types of utility line stream crossings.
- D. Removal of riparian vegetation in the utility line right-of-way shall be limited to that necessary for equipment access. Effective erosion and sedimentation control measures shall be employed at all times during the project to prevent degradation of waters of the Commonwealth. Site regrading and reseeding shall be accomplished within 14 days after disturbance.

17.27 MULCH

- A. Seed shall be applied prior to mulching except where seed is to be applied as part of a hydroseeder slurry containing mulch.
- B. Lime and fertilizer shall be incorporated and surface roughening accomplished as needed prior to mulching in accordance with applicable sections of this Specification.
- C. Mulch materials shall be spread uniformly by hand or mechanically so the soil surface is covered. During or immediately following application, the mulch shall be anchored or otherwise secured to the ground according to one of the following methods:
 - 1. Mechanical – Use a disk, crimper, or similar type tool set straight to punch or anchor the mulch material into the soil.
 - 2. Mulch Tackifiers/Nettings/Emulsions – Use according to the manufacturer’s recommendations. This is a superior method in areas of water concentration to hold mulch in place.
 - 3. Wood Fiber – Wood fiber hydroseeder slurries may be used to tack straw mulch. This combination treatment is well suited to steep slopes and critical areas, and severe climate conditions.
- D. Mulch shall be anchored using a mulch anchoring tool, a liquid binder/tackifier, or mulch nettings. Nets and mats shall be installed to obtain firm, continuous contact between the material and the soil. Without such contact, the material is useless and erosion occurs.
- E. A mulch anchoring tool is a tractor-drawn implement that is typically used for anchoring straw and is designed to punch mulch approximately two inches into the soil surface. Machinery shall be operated on the contour and shall not be used on slopes steeper than 3H:1V.
- F. When using liquid mulch binders and tackifiers, application shall be heaviest around edges of areas and at crests of ridges and banks to prevent wind blow. Remainder of area shall have binders/tackifiers spread uniformly in accordance with manufacturer’s recommendations.
- G. When using a mulch net, it shall be used in conjunction with an organic mulch and shall be installed immediately after the application and spreading of the mulch. Mulch net shall be installed over the mulch except when the mulch manufacturer recommends otherwise.
- H. Excelsior blankets and mats with mulch are considered protective mulches and may be used alone on erodible soils and during all times of year. Erosion control mats shall be installed in accordance with manufacturer’s recommendations.

- I. Mulched areas shall be inspected at least weekly and after each rainfall of one-half inch or more. When mulch material is found to be loosened or removed, the mulch cover shall be replaced within 48 hours.

17.28 TEMPORARY SEEDING

- A. The site shall be graded as needed to permit the use of conventional equipment for seedbed preparation, seeding, mulch application, and anchoring.
- B. The needed erosion control practices, such as diversions, temporary waterways for diversion outlets, and sediment ponds, shall be installed prior to seeding.
- C. Prior to seeding, lime and fertilizer shall be worked into the soil with a disk harrow, springtooth harrow, or similar tools to a depth of two inches. On sloping areas, the final operation shall be on the contour.
- D. The seed shall be applied uniformly with a cyclone seeder, drill, cultipacker, seeder, or hydroseeder (slurry may include seed and fertilizer) preferably on a firm, moist seedbed. Seed shall be sown no deeper than one-fourth inch to one-half inch.
- E. The seedbed shall be firmed following seeding operations with a cultipacker, roller, or light drag.
- F. On sloping land, seeding operations shall be on the contour wherever possible.
- G. Mulch shall be applied, in the amounts described in the mulch section of this Specification, to protect the soil and provide a better environment for plant growth.
- H. New seed shall have adequate water for growth, through either natural means or irrigation, until plants are firmly established.
- I. Seeded areas shall be inspected at least weekly after planting and after each rainfall of one-half inch or more. Areas requiring additional seed and mulch shall be repaired within 48 hours.
- J. If vegetative cover is not established within 21 days, the area shall be reseeded.

17.29 PERMANENT SEEDING

- A. During site preparation, topsoil shall be stockpiled for use in establishing permanent vegetation.
- B. The site shall be graded as needed to permit the use of conventional equipment for seedbed preparation, seeding, mulch application, and anchoring.

- C. The needed erosion control practices, such as diversions, temporary waterways for diversion outlets, and sediment ponds, shall be installed prior to seeding.
- D. Ensure that lightly topsoil is backfilled and lightly compacted to meet the elevation of adjacent pavement.
- E. Prior to seeding, lime and fertilizer shall be worked into the soil with a disk harrow, springtooth harrow, or similar tools to a depth of four inches. On sloping areas, the final operation shall be on the contour.
- F. Where compacted soils occur, they shall be broken up sufficiently to create a favorable rooting depth of six to eight inches.
- G. The seed shall be applied uniformly with a cyclone seeder, drill, cultipacker, seeder, or hydroseeder (slurry may include seed and fertilizer) preferably on a firm, moist seedbed. Seed shall be sown no deeper than one-fourth inch to one-half inch.
- H. The seedbed shall be firmed following seeding operations with a cultipacker, roller, or light drag.
- I. On sloping land, seeding operations shall be on the contour wherever possible.
- J. Mulch shall be applied, in the amounts described in the mulch section of this Specification, to protect the soil and provide a better environment for plant growth.
- K. New seed shall have adequate water for growth, through either natural means or irrigation, until plants are firmly established.
- L. Seeded areas shall be inspected at least weekly after planting and after each rainfall of 0.5 inches or more. Areas requiring additional seed and mulch shall be repaired within 48 hours.
- M. If vegetative cover is not established (>70%) within 21 days, the area shall be reseeded. If 40 to 70 percent groundcover is established, seed and fertilize, using half of rates originally applied, and mulch. If less than 40 percent groundcover is established, follow original seedbed preparation methods, seeding and mulching specifications, and apply lime and fertilizer as needed according to soil tests.

17.30 SOD

- A. The area to be sodded shall be protected from excess runoff, as necessary, with appropriate BMPs.

- B. Prior to sodding, the soil surface shall be cleared of all trash, debris, and stones larger than one and one-half inches in diameter, and of all roots, brush, wire, and other objects that would interfere with the placing of the sod.
- C. Sod shall be placed so that the top of the sod mat is level with the elevation of adjacent pavement.
- D. Compacted soils shall be broken up sufficiently to create a favorable rooting depth of six to eight inches.
- E. Lime and fertilizer shall be worked into the soil with a disk harrow, springtooth harrow, or other suitable field equipment to a depth of four inches.
- F. After the lime and fertilizer have been applied and just prior to the laying of the sod, the soil in the area to be sodded shall be loosened to a depth of one inch. The soil shall be thoroughly dampened immediately after the sod is laid if it is not already in a moist condition.
- G. No sod shall be placed when the temperature is below 32°F. No frozen sod shall be placed nor shall any sod be placed on frozen soil.
- H. When sod is placed during the periods of June 15 to September 1 or October 15 to March 1, it shall be covered immediately with a uniform layer of straw mulch approximately one-half inch thick or so the green sod is barely visible through the mulch.
- I. Sod shall be carefully placed and pressed together so it will be continuous without any voids between the pieces. Joints between the ends of strips shall be staggered.
- J. On gutter and channel sodding, the sod should be carefully placed on rows or strips at right angles to the centerline of the channel (*i.e.*, at right angles to the direction of flow). The edge of the sod at the outer edges of all gutters shall be sufficiently deep so that surface water will flow over onto the top of the sod.
- K. On steep graded channels, each strip of sod shall be staked with at least two stakes not more than 18 inches apart.
- L. On slopes 3H:1V or steeper, or where drainage into a sod gutter or channel is one-half acre or larger, the sod shall be rolled or tamped and then chicken wire, jute, or other netting shall be pegged over the sod for protection in the critical areas. The netting and sod shall be staked with at least two stakes not more than 18 inches apart. The netting shall be stapled on the side of each stake within two inches of the top of the stake. The stake should then be driven flush with the top of the sod.
- M. When stakes are required, the stakes shall be wood and shall be approximately ½ inch by ¾ inch by 12 inches. They shall be driven flush with the top of the sod with the flat side against the slope and on an angle toward the slope.

- N. Sod shall be tamped or rolled after placing and then watered. Watering shall consist of a thorough soaking of the sod and of the sod bed to a depth of at least 4 inches. The sod should be maintained in a moist condition by watering for a period of 30 days.
- O. In the absence of adequate rainfall, watering shall be performed daily or as often as necessary during the first week to maintain moist soil to a depth of 4 inches. Watering shall be done during the heat of the day to prevent wilting. After the first week, sod shall be watered as necessary to maintain adequate moisture content.
- P. The first mowing of sod shall not be attempted until the sod is firmly rooted. No more than one-third of the grass leaf shall be removed by the initial and subsequent cuttings. Grass height shall be maintained between 2 inches and 3 inches.
- Q. Where sod does not establish properly, the sod should be replaced immediately. Areas requiring re-sodding should be prepared in the same manner as the original installation.

17.31 ROAD/PARKING STABILIZATION

- A. The roadbed or parking surface shall be cleared of all vegetation, roots, and other objectionable material.
- B. All roadside ditches, cuts, fills, and disturbed areas adjacent to parking areas and roads shall be stabilized with appropriate temporary or permanent vegetation according to the applicable sections of this Specification.
- C. Geotextile filter fabric may be applied beneath the stone for additional stability in accordance with fabric manufacturer's specifications.
- D. Both temporary and permanent roads and parking areas may require periodic top dressing with new gravel. Seeded areas adjacent to the roads and parking areas shall be checked regularly to ensure that a vigorous stand of vegetation is maintained. Roadside ditches and other drainage structures shall be checked once each week to ensure that they do not have silt or other debris that reduces their effectiveness.

17.32 CONSTRUCTION ENTRANCE

- A. Vegetation, roots, and all other obstructions shall be cleared in preparation for grading. Prior to placing geotextile (filter fabric), the entrance shall be graded and compacted to 80% of standard proctor density.
- B. To reduce maintenance and loss of aggregate, the geotextile shall be placed over the existing ground before placing the stone for the entrance. Stone shall be placed to depth of 6 inches or greater for the entire width and length of the stabilized construction entrance.

- C. If wash racks are used, they shall be installed according to manufacturer's specifications.
- D. The stabilized construction entrance shall be inspected once each week and after there has been a high volume of traffic or a storm event greater than 0.2 inches.
- E. The entrance shall be maintained in a condition that will prevent tracking or flow of sediments onto public rights-of-way. This may require periodic top dressing with additional stone, as conditions demand, and repair and/or cleanout of any structures used to trap sediment.
- F. All materials spilled, dropped, washed, or tracked from vehicles onto roadways or into storm drains must be removed immediately.

17.33 DUST CONTROL

- A. See Articles on Temporary Seed, Permanent Seed, Sod, Mulch, Road/Parking Stabilization, and Construction Entrance of this Specification Section.
- B. When construction is active on the site, dust control shall be implemented as needed.
- C. When using tillage as a dust control measure, Contractor shall begin plowing on windward side of area. Chisel-type plows spaced about 12 inches apart, spring-toothed harrow, and similar plows are examples of equipment that may produce the desired effect.
- D. The site shall be observed daily for evidence of windblown dust and reasonable steps shall be taken to reduce dust whenever possible. When construction on a site is inactive for a period, the site shall be inspected at least weekly for evidence of dust emissions or previously windblown sediments. Dust control measures shall be implemented or upgraded if the site inspection shows evidence of wind erosion.

17.34 NETS AND MATS

- A. Nets and mats shall be installed according to the manufacturer's recommendations. In the event that the manufacturer's recommendations conflict with any requirement of this Specification, the most conservative requirement, in terms of protection of public health and the environment, shall govern.

17.35 TEMPORARY DIVERSION DITCH

- A. All dead furrows, ditches or other depressions to be crossed shall be filled before construction begins or as part of construction, and the earth fill used to fill the

depressions shall be compacted using the treads of the construction equipment. All old terraces, fencerows, or other obstructions that will interfere with the successful operation of the diversion shall be removed.

- B. The base for the diversion ridge shall be prepared so that a good bond is obtained between the original ground and the fill material. Vegetation shall be removed and the base shall be thoroughly disked prior to placement of fill.
- C. The earth materials used to construct the earth fill portions of the diversions shall be obtained from the diversion channel or other approved source.
- D. The earth fill materials used to construct diversions shall be compacted by running the construction equipment over the fill in such a manner that the entire surface of the fill will be traversed by not less than one tread track of the equipment.
- E. When an excess of earth material results from cutting the channel cross section and grade, it shall be deposited adjacent to the supporting ridge unless otherwise directed.
- F. The completed diversion shall conform to the cross section and grade shown on the Construction Drawings.
- G. Temporary or permanent seeding and mulch shall be applied to the berm or ditch immediately following its construction. Contractor shall triple-seed areas below the flow line, and shall use erosion control blankets or turf reinforcement mats as needed.
- H. Bare and vegetated diversion channels shall be inspected regularly to check for points of scour or bank failure; rubbish or channel obstruction; rodent holes, breaching, or settling of the ridge; and excessive wear from pedestrian or construction traffic.
- I. Damaged channels or ridges shall be repaired at the time damage is detected. Sediment deposits shall be removed from diversion channels and adjoining vegetative filter strips regularly.
- J. Diversions shall be reseeded and fertilized as needed to establish vegetative cover.

17.36 LEVEL SPREADER

- A. The minimum acceptable width shall be 6 feet. The depth of the level spreader as measured from the lip shall be at least 6 inches and the depth shall be uniform across the entire length of the measure.
- B. The grade of the channel for the last 15 feet entering the level spreader shall be less than or equal to 1%.
- C. The level lip of the spreader shall be constructed on zero percent grade to insure uniform conversion of channel flow to sheet flow.

- D. Level spreaders shall be constructed on undisturbed soil.
- E. The entrance to the spreader shall be graded in a manner to insure that runoff enters directly onto the zero percent graded channel.
- F. Storm runoff converted to sheet flow shall discharge onto undisturbed areas stabilized with vegetation.
- G. All disturbed areas shall be stabilized immediately after construction is completed in accordance with the mulching and vegetation requirements of this Specification.
- H. The level spreader shall be inspected after each storm event and at least once each week. Any observed damage shall be repaired immediately.

17.37 PERMANENT CONSTRUCTED WATERWAY

- A. All ditches or other depressions to be crossed shall be filled before construction begins or as part of construction, and the earth fill used to fill the depressions shall be compacted using the treads of the construction equipment. All old terraces, fence rows, or other obstructions that will interfere with the successful operation of the channel shall be removed.
- B. The earth materials used to construct the earth fill portions of the channel shall be obtained from the excavated portion of the channel or other approved source.
- C. The earth fill materials used to construct the channel shall be compacted by running the construction equipment over the fill in such a manner that the entire surface of the fill will be traversed by at least one tread track of the equipment.
- D. The completed channel shall conform to the cross section and grade shown on the Construction Drawings.
- E. Channels shall be inspected regularly to check for points of scour or bank failure; rubbish or channel obstruction; rodent holes; breaching; and excessive wear from pedestrian or construction traffic.
- F. Channels shall be repaired at the time damage is detected. Sediment deposits shall be removed from adjoining vegetative filter strips when they are visible.
- G. Channels shall be reseeded and fertilized as needed to establish vegetative cover.
- H. The subgrade of paved channels shall be constructed to the required elevations. All soft sections and unsuitable material shall be removed and replaced with suitable material. The subgrade shall be thoroughly compacted and shaped to a smooth, uniform surface. The subgrade shall be moist when pouring concrete.

- I. Before permanent stabilization of the slope, the structure shall be inspected after each rainfall. Any damages to the paved channel or slope shall be repaired immediately.

17.38 PIPE SLOPE DRAIN

- A. The pipe slope drain shall be placed on undisturbed or well-compacted soil.
- B. Soil around and under the entrance section shall be hand-tamped in 4-inch to 8-inch lifts to the top of the dike to prevent piping failure around the inlet.
- C. Filter fabric shall be placed under the inlet and extended 5 feet in front of the inlet and be keyed in 6 inches on all sides to prevent erosion.
- D. Backfilling around and under the pipe with stable soil material hand compacted in lifts of 4 inches to 8 inches shall be done to ensure firm contact between the pipe and the soil at all points.
- E. The pipe slope drain shall be securely staked to the slope using grommets provided for this purpose at intervals of 10 feet or less.
- F. All slope drain sections shall be securely fastened together and have watertight fittings.
- G. The pipe shall be extended beyond the toe of the slope and discharged at a non-erosive velocity into a stabilized area or to a sediment trap or pond.
- H. The pipe slope drain shall have a minimum slope of 3 percent or steeper.
- I. The height at the centerline of the earth dike shall range from a minimum of 1.0 foot over the pipe to twice the diameter of the pipe measured from the invert of the pipe. It shall also be at least 6 inches higher than the adjoining ridge on either side. At no point along the dike will the elevation of the top of the dike be less than 6 inches higher than the top of the pipe.
- J. All areas disturbed by installation or removal of the pipe slope drain shall be immediately stabilized.
- K. The pipe slope drain shall be inspected after every rainfall and at least weekly. Any necessary repairs shall be made immediately.
- L. Contractor shall check to see that water is not bypassing the inlet and undercutting the inlet or pipe. If necessary, Contractor shall install headwall or sandbags.
- M. Contractor shall check for erosion at the outlet point and shall check the pipe for breaks or clogs. Contractor shall install additional outlet protection if needed and immediately repair the breaks and clean any clogs.

- N. Contractor shall not allow construction traffic to cross the pipe slope drain and shall not place any material on it.
- O. If a sediment trap has been provided, it shall be cleaned out when the sediment level reaches 1/3 the design volume.
- P. The pipe slope drain shall remain in place until the slope has been completely stabilized or up to 30 days after permanent slope stabilization.

17.39 IMPACT STILLING BASIN

- A. Construction specifications for impact stilling basins are provided in the Construction Drawings.

17.40 CHECK DAM

- A. Stone shall be placed by hand or mechanically as necessary to achieve complete coverage of the ditch and to ensure that the center of the dam is at least 1 foot lower than the outer edges. Stone shall also be placed to extend 3 feet in elevation above the center portion of the check dam or to the top of the channel side slopes.
- B. Coir and wood fiber logs shall be laid on the channel bottom.
- C. Check dams shall be removed when their useful life has been completed. In temporary ditches and swales, check dams shall be removed and the ditch filled in when it is no longer needed. In permanent channels, check dams shall be removed when a permanent lining can be installed. In the case of grass-lined ditches, check dams shall be removed when the grass has matured sufficiently to protect the ditch or swale. The area beneath the check dams shall be seeded and mulched or sodded (depending upon velocity) immediately after check dams are removed.
- D. If stone check dams are used in grass-lined channels that will be mowed, care shall be taken to remove all stone from the channel when the dam is removed. This shall include any stone that has washed downstream.
- E. Regular inspections shall be made to ensure that the check dam 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.
- F. Check dams shall be checked for sediment accumulation after each rainfall. Sediment shall be removed before or when it reaches one-third of the original height of the dam.
- G. 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.

17.41 SEDIMENT TRAP

- A. 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.
- B. Seeding, fertilizing, and mulching of the material taken from the excavation shall comply with the applicable soil stabilization sections of this Specification.
- C. Construction specifications for sediment traps are provided in the Construction Drawings.
- D. 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 trap by rainfall:
 - 1. Uniformly spread to a depth not exceeding 3 feet and graded to a continuous slope away from the trap
 - 2. 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.
- E. Sediment shall be removed from the trap when the capacity is reduced to one third of the design volume. Contractor shall follow the methods for disposing of sediment removed from the trap as shown in the Construction Drawings.

17.42 SEDIMENT POND

- A. The foundation area 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. The surface of the foundation area shall be thoroughly scarified before placement of the embankment material.
- B. A cutoff trench shall be backfilled with suitable material. The trench shall be kept free of standing water during backfill operations.
- C. The pipe conduit barrel shall be placed on a firm foundation. Selected backfill material shall be placed around the conduit in layers, and each layer shall be compacted to at least the same density as the adjacent embankment. All compaction within 2 feet of the pipe spillway shall be accomplished with hand-operated tamping equipment.
- D. All borrow areas outside the pond and in the drainage area shall be graded and left in such a manner that water will not be ponded.
- E. The material placed in the fill shall be free of all sod, roots, frozen soil, stones more than 6 inches in diameter, and other objectionable material. The placing and spreading of the

fill material shall occur in approximately 6-inch horizontal layers or of such thickness that the required compaction can be obtained with the equipment used. Each layer shall be compacted in a way that will result in achieving 95 percent of the maximum standard dry density.

- F. The distribution and gradation of materials throughout the fill shall be such that there will be no lenses, pockets, stakes, or layers of material differing substantially in texture or gradation from the surrounding material. Where it is necessary to use materials of varying texture and gradation, the more impervious material shall be placed in the upstream and center portions of the fill.
- G. The moisture content of fill material shall be such that the required degree of compaction can be obtained with the equipment used.
- H. Fill shall not be placed on frozen, slick, or saturated soil.
- I. The topsoil material saved in the site preparation shall be placed as a top dressing on the surface of the emergency spillways, embankments, and borrow areas. It shall be evenly spread.
- J. A protective cover of herbaceous vegetation shall be established on all exposed surfaces of the embankment, spillway, and borrow areas to the extent practical under prevailing soil and climatic conditions.
- K. Seedbed preparation, seeding, fertilizing, and mulching shall comply with the applicable sections of this Specification.
- L. Any material excavated from the pond shall be placed in one of the following ways so that its weight will not endanger the stability of the side slopes and where it will not be washed back into the pond by rainfall:
 - 1. Uniformly spread to a depth not exceeding 3 feet and graded to a continuous slope away from the pond.
 - 2. 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.
- M. Sediment shall be removed from the pond when the capacity is reduced to one third of the design volume. Contractor shall follow the methods for disposing of sediment removed from the pond as shown in the Construction Drawings.

17.43 SILT FENCE

- A. This Article provides construction specifications for silt fences using synthetic fabric. See the Construction Drawings for additional detail.

- B. Posts shall be spaced a maximum of 10 feet apart at the barrier location and driven securely into the ground (minimum of 12 inches). When necessary because of rapid runoff, post spacing shall not exceed 6 feet.
- C. A trench shall be excavated at least 6 inches wide and 6 inches deep along the line of posts and upslope from the barrier.
- D. 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 long, tie wires 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.
- E. The filter fabric shall be stapled or wired to the fence, and 12 inches of the fabric shall be extended into the trench. The fabric shall not extend more than 30 inches above the original ground surface. Filter fabric shall not be stapled to existing trees.
- F. At joints, filter fabric shall be lapped with terminating posts with a minimum overlap of 3 feet.
- G. The trench shall be backfilled and soil compacted over the filter fabric.
- H. Silt fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.
- I. 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.
- J. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and if the barrier is still necessary, the fabric shall be replaced promptly.
- K. Sediment deposits shall be removed after each storm event or when deposits reach approximately one-third the height of the barrier.
- L. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required shall be dressed to conform to the existing grade, prepared, and seeded.
- M. Silt fences shall be replaced every 6 months.

17.44 STORM DRAIN INLET PROTECTION

- A. For silt fence drop inlet protection, the following specifications apply:
 - 1. For stakes, Contractor shall use 2 x 4-inch wood (preferred) or equivalent metal with a minimum length of 3 feet.

2. Stakes shall be evenly spaced around the perimeter of the inlet a maximum of 3 feet apart and securely driven into the ground, approximately 18 inches deep.
 3. To provide needed stability to the installation, Contractor shall frame with 2 x 4-inch wood strips around the crest of the overflow area at a maximum of 1.5 feet above the drop inlet crest and shall brace diagonally.
 4. Contractor shall place the bottom 12 inches of the fabric in a trench and backfill the trench with at least 4 inches of crushed stone or 12 inches of compacted soil.
 5. Contractor shall fasten fabric securely to the stakes and frame. Joints shall be overlapped to the next stake.
- B. For sod drop inlet protection, sod shall be placed to form a turf mat covering the soil for a distance of 4 feet from each side of the inlet structure. Soil preparation and sod placement shall be in accordance with the section entitled Sod.
- C. For gravel curb inlet protection, the following specifications apply:
1. Wire mesh with ½-inch openings shall be placed over the curb inlet opening so that at least 12 inches of wire extends across the concrete gutter from the inlet opening.
 2. KYTC No. 2 Coarse Aggregate shall be piled against the wire so as to anchor it against the gutter and inlet cover and to cover the inlet opening completely.
 3. This type of device must never be used where overflow may endanger an exposed fill slope. Consideration shall also be given to the possible effects of ponding on traffic movement, nearby structures, working areas, and adjacent property.
- D. For block and gravel curb inlet protection, the following specifications apply:
1. Two concrete blocks shall be placed on their sides abutting the curb at either side of the inlet opening to act as spacer blocks.
 2. A 2-inch by 4-inch stud shall be cut and placed through the outer holes of each spacer block to help keep the front blocks in place.
 3. Concrete blocks shall be placed on their sides across the front of the inlet and abutting the spacer blocks.
 4. Wire mesh shall be placed over the outside of the concrete blocks to prevent stone from being washed through the holes in the blocks. Wire with ½-inch openings shall be used.
 5. KYTC No. 2 Coarse Aggregate shall be piled against the wire to the top of the barrier.

- E. For stone-filled corrugated pipe curb inlet protection, the following specifications apply:
 - 1. Two concrete "L" blocks shall be placed on their sides, with one leg fitting into the mouth of the curb opening.
 - 2. A 6-inch corrugated pipe shall be filled with stone and covered with a filter sock.
 - 3. The stone-filled pipe will be placed in front of the two concrete "L" blocks, and extend a minimum of the width of the curb inlet opening on either side. The total length of the stone filled pipe shall be three times the width of the curb inlet opening.
- F. The structure shall be inspected after each rain, and repairs made as needed.
- G. Sediment shall be removed and the device restored to its original dimensions when the sediment has accumulated to one-third the design depth of the filter. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
- H. 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.
- I. Structures shall be removed after the drainage area has been properly stabilized.

17.45 FILTER STRIP

- A. When planting filter strips, Contractor shall prepare seedbed, incorporate fertilizer, and apply mulch consistent with the seeding sections of this Specification. Filter strips using areas of existing vegetation shall be over seeded, as necessary, with the specified mixtures to obtain an equivalent density of vegetation. The over seeding shall be accomplished prior to any land disturbing activities.
- B. Filter strips shall be inspected regularly to ensure that a healthy vegetative growth is maintained. Any bare spots or spots where sediment deposition could lead to the destruction of vegetation shall be repaired.
- C. Filter strips shall be fertilized once each year in the fall.
- D. Irrigation shall be used as necessary to maintain the growth of the vegetation in the filter strip.
- E. Sediment shall be removed when it becomes visible in the filter.
- F. Construction traffic shall not be driven on or over filter strips.

17.46 STREAM CROSSING

- A. Clearing and excavation of the streambed and banks shall be kept to a minimum.
- B. The structure shall be removed as soon as it is no longer necessary for project construction.
- C. Upon removal of the structure, the stream shall immediately be reshaped to its original cross section and properly stabilized.
- D. 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.
- E. The structure shall be inspected after every rainfall and at least once a week and all damages repaired immediately.

17.47 PUMP-AROUND FLOW DIVERSION

- A. Operations shall be scheduled such that diversion installation, in-stream excavation, in-stream construction, stream restoration, and diversion removal are completed as quickly as possible. Contractor shall not construct in a stream when rainfall is expected during the time excavation will be occurring in the stream.
- B. Check dams shall be installed across the stream during low flow conditions.
- C. Stream flow shall be pumped around the check dams. Outlet protection shall be installed as required at the discharge point.
- D. Contractor shall dewater the work area and pump into a sediment trapping device.
- E. Contractor shall complete construction activities across the stream.
- F. Contractor shall restore the streambed and banks.
- G. Contractor shall remove sandbags and shut down pumping operation. (Salvage sandbags for future use if multiple stream crossings are required on the project.) Contractor shall remove all sandbags from the stream, including damaged and empty bags.
- H. Pumps shall be manned around-the-clock when the pump-around diversion is in the stream.
- I. 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.

J. Contractor shall add sandbags as required to seal leaks in checks.

17.48 CONSTRUCTION DEWATERING

- A. Contractor shall follow the specifications for sediment traps and basins. The manufacturer's recommendations shall be followed for commercial products.
- B. The dewatering structure shall be inspected frequently to ensure it is functioning properly and not overtopping. Accumulated sediment shall be spread out on site and stabilized or disposed of offsite.

17.49 KPDES GENERAL PERMIT FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

- A. The Contractor is responsible for filing the appropriate state Notice of Intent (NOI-SWCA) letter at least seven (7) days prior to start of construction activity for an electronic submittal, and at least thirty (30) days prior to start for a paper submittal. The Notice of Intent (NOI) is a Kentucky Pollution Discharge Elimination System (KPDES) permit application as provided by the Kentucky Revised Statutes, Chapter 224. This application is required to be submitted for construction projects that disturb one or more acres of land. A permit application form is included in this specification Section.
- B. The NOI requires the inclusion of the descriptions of (but is not limited to) the following items:
 - 1. Names and designated uses of any receiving waters
 - 2. Anticipated number and locations of discharge points
 - 3. Identification of planned construction in or along a water body
- C. A topographic map showing project boundaries, areas to be disturbed, locations of anticipated discharge points and receiving waters is also required to be submitted with the NOI.
- D. If the construction site is near a designated "High Quality/Impaired Waters" or a "Cold Water Aquatic Habitat Waters, Exceptional Waters, Outstanding National/State Resource Waters," additional items and/or individual permits will be required.
- E. The NOI form requires an SIC code. The link to the SIC codes is <http://www.osha.gov/pls/imis/sicsearch.html>. The following are the typical construction SIC codes utilized:

1542 – Building Construction, nonresidential, except industrial and warehouses
1623 – Water Main Construction, Sewer Construction
1629 – Water and Wastewater Treatment Plant Construction
1711 – Water Pump Installation
1781 – Drilling Water Wells

- F. The Contractor is responsible for implementing the approved Stormwater Pollution Prevention Plan (SWPPP) prior to commencement of site disturbance. The SWPPP shall include erosion prevention measures and sediment and pollutant control measures which are installed and maintained to minimize discharges of sediments and other pollutants from a 2-year, 24-hour storm event. The SWPPP must be kept at the site and available for review by LFUCG and state officials.
- G. The Contractor is responsible for the description of procedures to maintain erosion and sediment control measures during the period of construction.
- H. The Contractor is responsible for identifying each Contractor and Subcontractor who will install each SWPPP erosion and sediment control measure.
- I. Each Contractor and Subcontractor shall sign a statement certifying the awareness of the requirements of the SWPPP related documents. Certification is attached at the end of this section.
- J. The Contractor shall not start land disturbing activities until written permit coverage is obtained from the Kentucky Division of Water.
- K. The inspection by qualified personnel, **provided by the Contractor**, of the site as follows:
 - 1. at least once every seven (7) calendar days, and
 - 2. within 24 hours after any storm event of 0.5 inch or greater
- L. The Contractor is responsible for completing and maintaining the required Self-Inspection Forms. A sample is included in this specification Section.
- M. Amendments to the approved SWPPP shall be made and implemented as necessary through the course of the construction project if inspections or investigations by the Contractor's inspector, site staff, or by local, state, or federal officials determine that the existing sediment control measures, erosion control measures, or other site management practices are ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the construction site. All plan amendments shall be noted on the copy of the SWPPP maintained at the project site.
- N. Upon completion of the project and establishment of all permanent erosion and sediment control structures and devices, the Contractor shall submit the Notice of

Termination (NOT) form to the Kentucky Division of Water, the LFUCG Division of Water Quality, and the LFUCG Division of Engineering. This form is included at the end of this specification section.

O. All subcontractors shall be required to comply with the requirements of the state permit and the Stormwater Pollution Prevention Plan (SWPPP).

P. Where to submit:

1. Submit Notice of Intent (NOI) Form to: Operational Permits Section, SWP Branch, Division of Water, 200 Fair Oaks Lane, Frankfort, Kentucky 40601.

2. For an electronic submittal, go to:
<https://dep.gateway.ky.gov/eForms/Default.aspx?FormID=3>

3. Do not initiate work until receiving approval from the Kentucky Division of Water.

4. A complete copy of the NOI submittal shall also be provided to:

Division of Water Quality
125 Lisle Industrial Avenue, Suite 180
Lexington, KY 40511

Division of Engineering
Lexington-Fayette Urban County Government
101 E. Vine St.
4th Floor
Lexington, KY 40507

17.50 LFUCG LAND DISTURBANCE PERMIT

A. The Contractor shall obtain a Land Disturbance Permit from the LFUCG Division of Engineering, after the LFUCG Division of Water Quality inspects the installation of the best management practices as required by the Stormwater Pollution Prevention Plan (SWPPP). The site grading plan shall show the original and finish grade contours. The grading plan shall be in conformance with the SWPPP.

B. Where to obtain:

Division of Engineering
Lexington-Fayette Urban County Government
101 E. Vine St.
4th Floor
Lexington, KY 40507
(859) 258-3410
Attn: Land Disturbance Permit Section

C. All excess earthen/rock materials hauled off the site to a location in Fayette County shall be hauled to a site permitted by the Kentucky Division of Water and the LFUCG. The haul site must be permitted in accordance with these specifications.

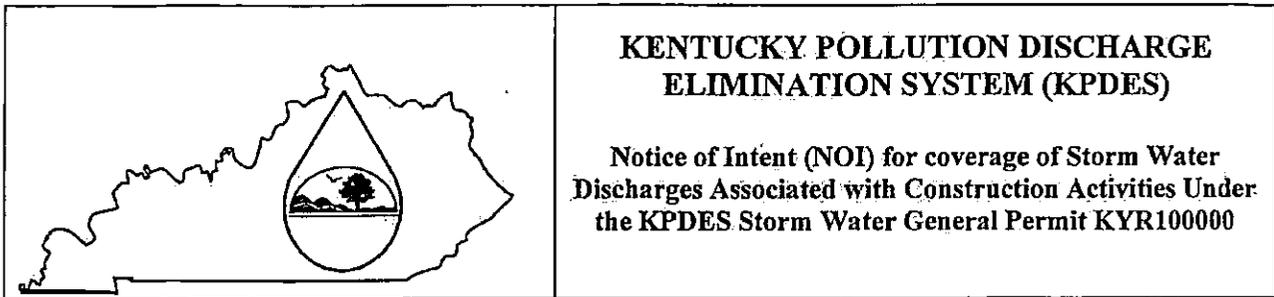
17.51 MEASUREMENT AND PAYMENT

Payment for Erosion and Sediment Control shall be for SWPPP preparation and revision, installation, maintenance, and removal of Pollution Prevention measures and other work necessary to make the work compliant with Federal, State and Local regulations, laws and/or ordinances. A maximum of fifty (50) percent of the amount bid for Erosion and Sediment Control shall be payable until the project reaches substantial completion. At substantial completion, the amount payable may be increased to ninety (90) percent of the bid amount. When the site is stabilized, the remainder shall be paid.

The Owner will make payment for the completed and accepted quantities under the following:

| <u>Pay Item</u> | <u>Pay Unit</u> |
|---|-----------------|
| All items required for Erosion and Sediment Control | Lump Sum |

FORM NOI-SWCA



KENTUCKY POLLUTION DISCHARGE ELIMINATION SYSTEM (KPDES)

Notice of Intent (NOI) for coverage of Storm Water Discharges Associated with Construction Activities Under the KPDES Storm Water General Permit KYR100000

This is an application for:

- New construction activity.
- Modification of coverage for additional area in same watershed.
- Modification of coverage for additional area in different watershed.

If Modification is checked, state reason for Modification:

| | | | | | | | | | | |
|----------------|--------------------------|---|---|---|---|---|--|--|--|--|
| For Agency Use | Permit No. (Leave Blank) | K | Y | R | I | O | | | | |
| For Agency Use | AI ID (Leave Blank) | | | | | | | | | |

SECTION I - FACILITY OPERATOR INFORMATION

| | |
|--------------------|---|
| Operator Name(s)*: | Phone*: |
| Mailing Address*: | Status of Owner/Operator: <input type="checkbox"/> Private <input type="checkbox"/> State <input type="checkbox"/> Federal <input type="checkbox"/> Public (other than state or federal) |
| City*: | State* Zip Code*: |

SECTION II - FACILITY/SITE LOCATION INFORMATION

| | | |
|------------------------------|-------------------------------|------------|
| Name of Project*: | Physical Address*: | City*: |
| State*: | Zip Code*: | County*: |
| Latitude (decimal degrees)*: | Longitude (decimal degrees)*: | SIC Code*: |

SECTION III - SITE ACTIVITY INFORMATION

For single projects provide the following information

| | | | |
|------------------------------------|---|-------------|------------------|
| Total Number of acres in project*: | Total Number of acres to be disturbed*: | Start date: | Completion date: |
|------------------------------------|---|-------------|------------------|

For common plans of development projects provide the following information

| | | |
|--|---|---------------------------------|
| Total Number of acres in project*: | Number of individual lots in development: | Number of lots to be developed: |
| Total acreage intended to be disturbed*: | Number of acres intended to be disturbed at any one time: | |
| Start date: | Completion date: | List Contractors: |

SECTION IV - DISCHARGE TO A WATER BODY

| | |
|--|---|
| Name of Receiving Water*: | Anticipated number of discharge points: |
| Location of anticipated discharge points: Latitude (decimal degrees)*: | Longitude (decimal degrees)*: |
| Receiving Water Body Stream Use Designation | <input type="checkbox"/> Cold Water Aquatic Habitat <input type="checkbox"/> Domestic Water Supply <input type="checkbox"/> Outstanding State Resource Water <input type="checkbox"/> Secondary Contact Recreation <input type="checkbox"/> Primary Contact Recreation <input type="checkbox"/> Warm Water Aquatic Habitat |
| Antidegradation Categorization | <input type="checkbox"/> Outstanding National Resource Water <input type="checkbox"/> Exceptional Water <input type="checkbox"/> High Quality Water <input type="checkbox"/> Impaired Water |
| Name of Receiving Water*: | Anticipated number of discharge points: |
| Location of anticipated discharge points: Latitude (decimal degrees)*: | Longitude (decimal degrees)*: |
| Receiving Water Body Stream Use Designation | <input type="checkbox"/> Cold Water Aquatic Habitat <input type="checkbox"/> Domestic Water Supply <input type="checkbox"/> Outstanding State Resource Water <input type="checkbox"/> Secondary Contact Recreation <input type="checkbox"/> Primary Contact Recreation <input type="checkbox"/> Warm Water Aquatic Habitat |
| Antidegradation Categorization | <input type="checkbox"/> Outstanding National Resource Water <input type="checkbox"/> Exceptional Water <input type="checkbox"/> High Quality Water <input type="checkbox"/> Impaired Water |

FORM NOI-SWCA

| | | | |
|--|--|---|-------------------------------|
| SECTION V – DISCHARGE TO AN MS4 | | | |
| Name of MS4: | | Date of application /notification to the MS4 for construction site coverage. | |
| Number of discharge points: | Location of each discharge point: Latitude (decimal degrees):* | | Longitude (decimal degrees):* |
| SECTION VI – CONSTRUCTION ACTIVITIES IN OR ALONG A WATER BODY | | | |
| Will the project require construction activities in a water body or the riparian zone: <input type="checkbox"/> Yes <input type="checkbox"/> No | | | |
| If yes, describe scope of activity: | | | |
| Is a Clean Water Act 404 permit required: <input type="checkbox"/> Yes <input type="checkbox"/> No | | Is a Clean Water Act 401 Water Quality Certification required: <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| SECTION VII – NOI PREPARER INFORMATION | | | |
| First Name:* | Last Name:* | Phone:* | eMail Address:* |
| Mailing Address:* | | City:* | State:* |
| Zip Code:* | | | |
| SECTION VIII – ATTACHMENTS | | | |
| Attach a full size color USGS 7½-minute quadrangle map with the facility site clearly marked. USGS maps may be obtained from the University of Kentucky, Mines and Minerals Bldg. Room 106, Lexington, Kentucky 40506. Phone number (859) 257-3896. | | | |
| SECTION IX – CERTIFICATION | | | |
| I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. | | | |
| Signature:* | | First Name:* | Last Name:* |
| Phone:* | eMail Address: | | Date:* |

This completed application form and attachments should be sent to: SWP Branch, Division of Water, 200 Fair Oaks, Frankfort, Kentucky 40601. Questions should be directed to: SWP Branch, Operational Permits Section at (502) 564-3410.

KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM FORM NOI-SWCA – INSTRUCTIONS

WHO MUST FILE A NOTICE OF INTENT (NOI) FORM

Federal law at 40 CFR Part 122 prohibits point source discharges of stormwater associated with industrial activity to a water body of the Commonwealth of Kentucky without a Kentucky Pollutant Discharge Elimination System (KPDES) permit. The operator of an industrial activity that has such a storm water discharge must submit a NOI to obtain coverage under the KPDES Storm Water General Permit. If you have questions about whether you need a permit under the KPDES Storm Water program, or if you need information as to whether a particular program is administered by the state agency, call the Storm Water Contact, Operational Permits Section, Kentucky Division of Water at (502) 564-3410.

WHERE TO FILE NOI FORM

NOIs must be sent to the following address or submitted in on-line at <https://dep.gateway.ky.gov/eForms/Default.aspx?FormID=3>:

Operational Permits Section
SWP Branch, Division of Water
200 Fair Oaks Lane
Frankfort, KY 40601

Electronic NOI-SWCAs are to be submitted a minimum of seven (7) working days prior to commencement of construction-related activities. Paper NOI-SWCAs are to be submitted a minimum of thirty (30) working days prior to commencement of construction related activities.

COMPLETING THE FORM

Enter information in the appropriate areas only. (*) denotes a required field. Enter N/A (Not Applicable) for fields that are required but do not apply to your submission. If you have any questions regarding the completion of this form call the Storm Water Contact, Operational Permits Section, at (502) 564-3410.

SECTION I – FACILITY OPERATOR INFORMATION

Operator Name(s): Enter the name or names of all operators applying for coverage under KYR10 using this NOI.
Mailing Address, City, State, and Zip Code: Provide the mailing address of the primary operator.
Phone No.: Provide the telephone numbers of the person who is responsible for the operation.
Status of Owner/Operator: Select the appropriate legal status of the operator of the facility from the dropdown list.

Federal
Public (other than federal or state)
State
Private

SECTION II – FACILITY/SITE LOCATION INFORMATION

Name of Project: Provide the name of the project.
Physical Address, City, State, Zip Code and County: Provide the physical address of the project.
Latitude/Longitude: Provide the general site latitude and longitude of the operation.
SIC Code: Enter the Standard Industrial Code for the project

SECTION III – SITE ACTIVITY INFORMATION

For single projects provide the following information:

Total number of acres in project: Indicate the total acreage of the project including both disturbed and undisturbed areas.
Total number of acres to be disturbed: Indicate the total number of acres of the project to be disturbed.
Anticipated start date: Indicate the approximate date of when construction activities will begin.
Anticipated completion date: Indicated the approximate date of when final stabilization will be achieved.

For common plans of development provide the following information:

Total number of acres in project: Indicate the total acreage of the project including both disturbed and undisturbed areas.
Number of individual lots in development, if applicable: Indicate the number of individual lots or unit in the common plan of development
Number of lots to be developed: Indicate the number of lots that you intend to develop.
Total acreage of lots intended to develop: Indicate the total acreage of the lots you intend to develop
Total acreage intended to disturb: Indicate the total acreage of the lots you intend to disturb
Number of acres intended to disturb at any one time: Indicate the maximum number of acres to be disturbed at any one time.
Anticipated start date: Indicate the approximate date of when construction activities will begin.
Anticipated completion date: Indicated the approximate date of when final stabilization will be achieved.
List of contractors: Provide the names of all known contractors that will be working on site.

**KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM
FORM NOI-SWCA – INSTRUCTIONS**

SECTION IV – IF THE PERMITTED SITE DISCHARGES TO A WATER BODY THE FOLLOWING INFORMATION IS REQUIRED

Name of Receiving Water: Provide the names of the each water body receiving discharges from the site. Provide only official USGS names do not provide local names

Anticipated number of discharge points: Indicate the number of discharge points to each receiving water body.

Location of anticipated discharge points: Provide the latitude and longitude of each discharge point. Add points as necessary.

Receiving Water Body Stream Use Designation: Check all appropriate boxes

Antidegradation Categorization: Select from the drop down box one of the following:

Outstanding National Resource Water

Exceptional Water

High Quality Water

Impaired Water

SECTION V – IF THE PERMITTED SITE DISCHARGES TO A MS4 THE FOLLOWING INFORMATION IS REQUIRED

Name of MS4: Provide the name of the MS4 to which the activity will discharge

Number of discharge points to the MS4: Indicate the number of discharge points

Location of each discharge point: Provide the latitude and longitude of each discharge point. Add points as necessary

Date of application/notification to the MS4 for construction site permit coverage: Indicate the date the MS4 has or will be notified.

SECTION VI – CONSTRUCTION ACTIVITIES IN OR ALONG A WATER BODY

Will the project require construction activities in a water body or the riparian zone: Select Yes or No from the drop down box.

If Yes, describe scope of activity: Provide a brief description of the activity (ies) that will take place in the water body or the riparian zone.

Is a Clean Water Act 404 permit required: Select Yes or No from the drop down box.

Is a Clean Water Act 401 Water Quality Certification required: Select Yes or No from the drop down box.

SECTION VII – NOI PREPARER INFORMATION

Provide the name, mailing address, telephone number and eMail address of the person preparing the NOI.

SECTION VIII – Attachments

Attach a USGS topographic map indicating the location of the activity and the proposed discharge points.

SECTION IX – CERTIFICATION

Provide the name, mailing address, telephone number and eMail address of the person who is responsible for the activity

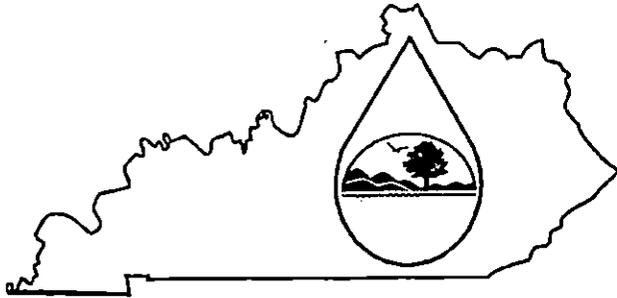
Signature: Provide full name of the responsibility party. This will constitute a signature.

The NOI must be signed as follows:

Corporation: by a principal executive officer of at least the level of vice president

Partnership or sole proprietorship: by a general partner or the proprietor respectively

KPDES FORM NOT-SW

| | |
|---|--|
|  | <p style="text-align: center;">Kentucky Pollutant Discharge Elimination System (KPDES)</p> <p style="text-align: center;">NOTICE OF TERMINATION (NOT) of Coverage Under the KPDES General Permit for Storm Water Discharges Associated with Industrial Activity</p> |
|---|--|

Submission of this Notice of Termination constitutes notice that the party identified in Section II of this form is no longer authorized to discharge storm water associated with industrial activity under the KPDES program.

ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.
(Please see instructions on back before completing this form.)

| |
|--|
| I. PERMIT INFORMATION |
| KPDES Storm Water General Permit Number: |
| Check here if you are no longer the Operator of the Facility: <input type="checkbox"/> |
| Check here if the Storm Water Discharge is Being Terminated: <input type="checkbox"/> |
| II. FACILITY OPERATOR INFORMATION |
| Name: |
| Address: |
| City/State/Zip Code: |
| Telephone Number: |
| III. FACILITY/SITE LOCATION INFORMATION |
| Name: |
| Address: |
| City/State/Zip Code: |

Certification: I certify under penalty of law that all storm water discharges associated with industrial activity from the identified facility that are authorized by a KPDES general permit have been eliminated or that I am no longer the operator of the facility or construction site. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge storm water associated with industrial activity under this general permit, and that discharging pollutants in storm water associated with industrial activity of waters of the Commonwealth is unlawful under the Clean Water Act and Kentucky Regulations where the discharge is not authorized by a KPDES permit. I also understand that the submittal of this Notice of Termination does not release an operator from liability for any violations of this permit or the Kentucky Revised Statutes.

| | |
|----------------------|-------|
| NAME (Print or Type) | TITLE |
| SIGNATURE | DATE |

Revised June 1999

INSTRUCTIONS
NOTICE OF TERMINATION (NOT) OF COVERAGE UNDER THE KPDES GENERAL PERMIT
FOR STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY

Who May File a Notice of Termination (NOT) Form

Permittees who are presently covered under the Kentucky Pollutant Discharge Elimination System (KPDES) General Permit for Storm Water Discharges Associated with Industrial Activity may submit a Notice of Termination (NOT) form when their facilities no longer have any storm water discharges associated with industrial activity as defined in the storm water regulations at 40 CFR 122.26 (b)(14), or when they are no longer the operator of the facilities.

For construction activities, elimination of all storm water discharges associated with industrial activity occurs when disturbed soils at the construction site have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time, or that all storm water discharges associated with industrial activity from the construction site that are authorized by a KPDES general permit have otherwise been eliminated. Final stabilization means that all soil-disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

Where to File NOT Form

Send this form to the following address:

Section Supervisor
Inventory & Data Management Section
KPDES Branch, Division of Water
14 Reilly Road, Frankfort Office Park
Frankfort, KY 40601

Completing the Form

Type or print legibly in the appropriate areas and according to the instructions given for each section. If you have questions about this form, call the Storm Water Contact, Industrial Section, at (502) 564-3410.

Section I - Permit Information

Enter the existing KPDES Storm Water General Permit number assigned to the facility or site identified in Section III. If you do not know the permit number, call the Storm Water Contact, Industrial Section at (502) 564-3410.

Indicate your reason for submitting this Notice of Termination by checking the appropriate box:

If there has been a change of operator and you are no longer the operator of the facility or site identified in Section III, check the corresponding box.

If all storm water discharges at the facility or site identified in Section III have been terminated, check the corresponding box.

Section II - Facility Operator Information

Give the legal name of the person, firm, public organization, or any other entity that operates the facility or site described in this application. The name of the operator may or may not be the same name as the facility. The operator of the facility is the legal entity which controls the facility's operation, rather than the plant or site manager. Do not use a colloquial name. Enter the complete address and telephone number of the operator.

Section III - Facility/Site Location Information

Enter the facility's or site's official or legal name and complete address, including city, state and ZIP code. If the facility lacks a street address, indicate the state, the latitude and longitude of the facility to the nearest 15 seconds, or the quarter, section, township, and range (to the nearest quarter section) of the approximate center of the site.

Section IV - Certification

Federal statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means: (i) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor; or

For a municipality, State, Federal, or other public facility: by either a principal executive

Revised June 1999

LFUCG LAND DISTURBANCE PERMIT APPLICATION AND ESC PLAN CHECKLIST

OWNER / DEVELOPER Name: _____ Date: _____ Zone: _____
 Address: _____ City: _____ State: _____ Zip: _____
 Contractor Name and Address: _____ Reg #: _____
 Contact Name, Phone/ FAX/Email: _____

| ITEM DESCRIPTION | Y | N | N/A | PAGE # | NOTES |
|--|--------------------------|--------------------------|--------------------------|--------|--|
| I. Permits: | | | | | |
| KY Construction Permit (KYR10 or Indvid) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| USCOE 404 Permit | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| KYDOW 401 Water Quality Cert. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| KY Stream Construction Permit | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| FEMA LOMR or CLOMR | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| II. BMPS: | | | | | |
| Site Preparation: | | | | | |
| Phasing plan for large projects | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Maximum disturbed area = 25 acres |
| Limits of disturbance, clearly marked | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | 25 foot undisturbed buffer strip along streams |
| Construction Entrance/ Exit Pad | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | No. 2 stone w/ filter fabric, min. 50 ft long (100' where practical) |
| Temporary Diversion (Berm or Ditch) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Offsite (clean) water routed around disturbed area |
| Stream Crossings | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Not allowed without US Army Corps 404 permit |
| Concrete Washout Area | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | One washout pit for every 40 lots |
| Soil Stabilization: | | | | | |
| Seeding/sodding schedule/timing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Applied within 14 days of reaching final grade or suspending work |
| Slope Protection: | | | | | |
| Silt Fence downslope of bare areas | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| Silt Fence installed along contour | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| Erosion Control Blankets on slopes | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Conforms with Fig. 11-1 in LFUCG Stormwater Manual |
| Drainage System Control: | | | | | |
| Inlets Protected | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| Pipe Outfall Erosion Prevention | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| Channel Lining | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Sodding or seed w/ blankets/mats immediately after construction |
| Check Dams | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Max drainage area = 10 acres |
| Sediment Basins and Traps: | | | | | |
| Sediment Traps (drainage area < 5 ac) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Minimum volume = 2yr-24hr runoff volume |
| Sediment Basins (drainage area = > 5 ac) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Minimum volume = 2yr-24hr runoff volume |
| Good Housekeeping: | | | | | |
| Material storage addressed | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| Spill Prevention and Control addressed | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| Dust control addressed | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| Dewatering operations are filtered | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| Narrative: | | | | | |
| Schedule/sequence for BMP installation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| BMP Inspection Requirement | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Every 7 days, or every 14 days and after 0.5" of rainfall |
| BMP Maintenance Requirement | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |
| Roadway Cleaning | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | |

LFUCG USE ONLY: Review Date: _____ Status: In Compliance: Y N Additional Info Needed: Y N
 Reviewed By: _____ Department: _____

Comments / Items Missing or Incomplete:

Kentucky Best Management Practices Plan • Construction Site Inspection Report

| | | |
|--|--------------------------------|----------------------------------|
| Company: | Site: | County: |
| Site Operator: | | Date: |
| Receiving Water: | Total Site Area (acres): | # Disturbed Acres: |
| Inspector Name: | Inspector Qualifications: | |
| Inspection Type: Weekly or ½ Inch Rain | Days Since Last Rainfall _____ | # Inches of Last Rainfall: _____ |

Field Inspection Observations

| BMP Category | Compliance | | | Field Indicators for Compliance |
|---------------------------------|------------|----|-----|---|
| | Yes | No | N/A | |
| Project Operations | | | | Notice of Intent (KPDES permit) and other local/state permits on file BMP Plan on site and available for review Project timing/schedule and activities following BMP Plan Weekly inspection and rain-event reports on BMPs available for review Diversions, silt checks/traps/basins, and silt fences/barriers installed prior to clearing Grading and clearing conducted in phases to minimize exposed soil areas No vegetation removal or operations in stream or sinkhole buffer area (25-50 ft min) Rock pad in place on all construction site exits leading to paved roads No sediment, mud, or rock on paved public roads in project area Dust control if needed when working in residential areas during dry conditions |
| Drainage Management | | | | Upland runoff diverted around bare soil areas with vegetated/lined ditches/berms Drainage channels exiting the site are lined with grass/blanket/rock and stabilized Discharges from dewatering operations cleaned in silt fence enclosure or other filter No muddy runoff leaving site after rains up to 1½ inches |
| Erosion Protection | | | | Exposed soil seeded/mulched after 2 weeks if no work is planned for the next 7 days Soils on steep slopes seeded/mulched/blanketed as needed to prevent rutting |
| Sediment Barriers | | | | Silt fence, rock filter, or other sediment barrier below all bare soil areas on slopes Barrier installed across slope on the contour, trenched in, posts on downhill side Multiple sediment barriers at least 125 ft apart on unseeded slopes steeper than 4:1 J-hook interceptors along silt fence where heavy muddy flows run along fencing No visible undercutting or bypassing or blowout of sediment barrier Accumulated sediment is less than halfway to the top of sediment barrier |
| Slope Protection | | | | Slopes tracked, disked, or conditioned after final grade is established Slopes seeded, mulched, or blanketed within 21 days, no unmanaged rills or gullying Heavy downslope flows controlled by lined down drain channels or slope drain pipes No muddy runoff from slopes into streams, rivers, lakes, or wetlands |
| Inlet Protection | | | | Inlet dam/device or filtration unit placed at all inlets receiving muddy flows No visible undercutting, bypassing, or blowout of inlet protection dam or device Accumulated sediment is less than halfway to the top of the inlet protection dam/device |
| Outlet Protection | | | | High flow discharges have rock or other flow dissipaters of adequate sizing at outlet Culvert outlets show no visible signs of erosion/scour, bank failure, or collapse |
| Ditch and Channel Stabilization | | | | No unmanaged channel bank erosion or bottom scouring visible within or below site Ditches with slopes more than 3% have check dams spaced as needed, if not grassed Ditch check dams tied in to banks, with center 4" lower than sides, and no bypassing Ditches with slopes of up to 5% are thickly seeded with grass (minimum requirement) Ditches 5% to 15% are lined with thick grass and erosion control blankets as needed Ditches 15% to 33% are lined with thick grass and matting or other approved product Ditches exceeding 33% are paved or lined with rock or other approved product |

CONTRACTOR AND SUBCONTRACTOR CERTIFICATIONS

a) SWPPP Files, Updates, and Amendments

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

Stormwater Pollution Prevention Plan Certification

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

Signed: _____ Date: _____

Title: _____

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

Subcontractor Certification

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

Signed: _____ Date: _____

Title: _____

Signed: _____ Date: _____

Title: _____

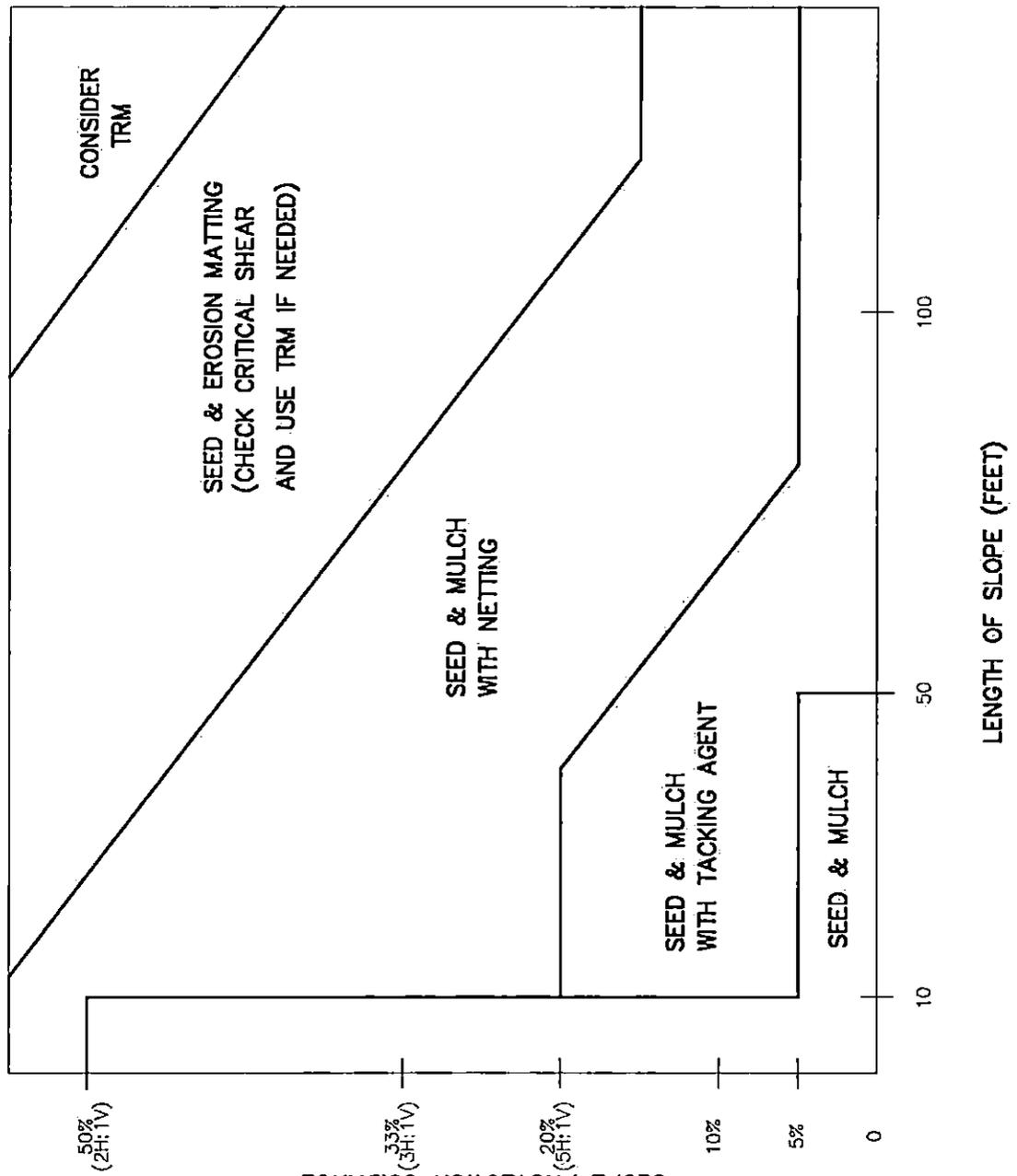
Signed: _____ Date: _____

Title: _____



STORMWATER MANUAL

FIGURE 11-1
SLOPE PROTECTION GUIDANCE
(EFFECTIVE DATE 1/13/2011)



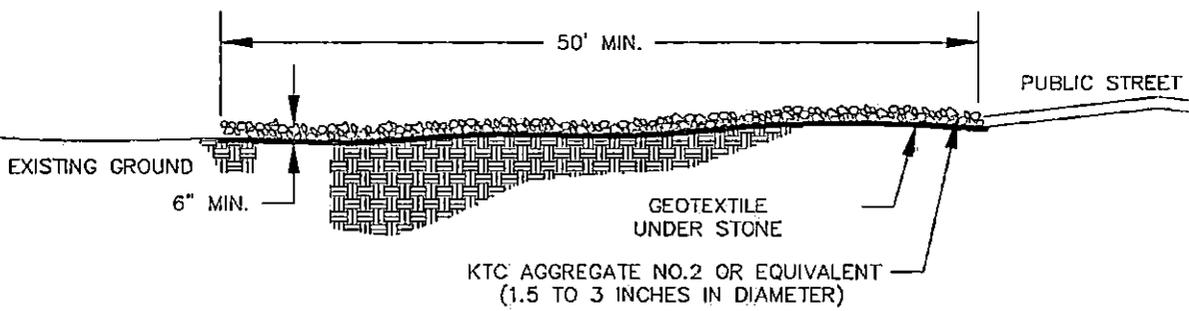
SLOPE PROTECTION GUIDANCE

NOTE: IF A SIMILAR DETAIL IS PROVIDED IN THE CONSTRUCTION DRAWINGS, THE CONSTRUCTION DRAWINGS DETAIL SHALL SUPERCEDE THIS DRAWING.

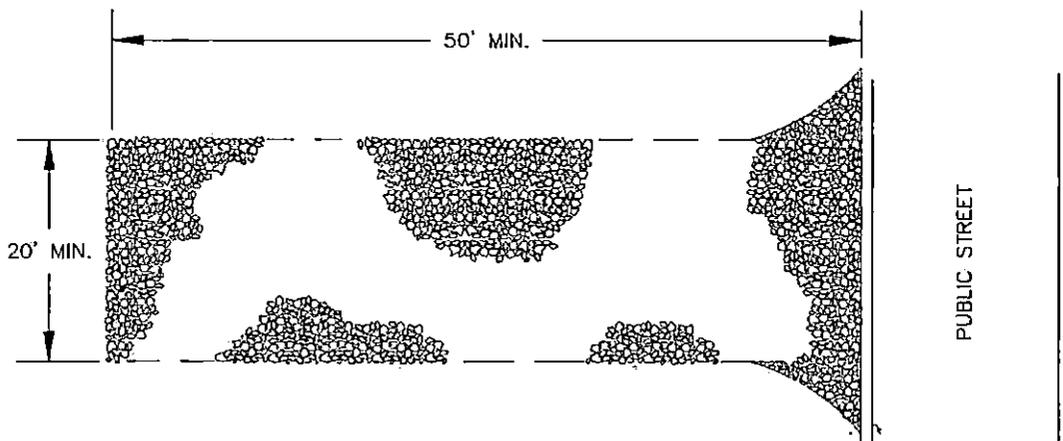


STORMWATER MANUAL

FIGURE 11-3
CONSTRUCTION ENTRANCE
(EFFECTIVE DATE 1/13/2011)



CROSS SECTION



PLAN VIEW

NOTE: IF A SIMILAR DETAIL IS PROVIDED IN THE CONSTRUCTION DRAWINGS,
THE CONSTRUCTION DRAWINGS DETAIL SHALL SUPERCEDE THIS DRAWING.



STORMWATER MANUAL

FIGURE 11-4
CONSTRUCTION ENTRANCE
NOTES AND SPECIFICATIONS
(EFFECTIVE DATE 1/13/2011)

SPECIFICATIONS FOR GEOTEXTILE FABRIC

| | |
|-----------------------|--|
| GRAB TENSILE STRENGTH | 220 LBS. (MIN.) (ASTM D1682) |
| ELONGATION FAILURE | 60% (MIN.) (ASTM D1682) |
| MULLEN BURST STRENGTH | 430 LBS. (MIN.) (ASTM D3768) |
| PUNCTURE STRENGTH | 125 LBS. (MIN.) (ASTM D751) (MODIFIED) |
| EQUIVALENT OPENING | SIZE 40-80 (US STD SIEVE) (CW-02215) |

NOTES

1. A STABILIZED ENTRANCE PAD OF CRUSHED STONE SHALL BE LOCATED WHERE TRAFFIC WILL ENTER OR LEAVE THE CONSTRUCTION SITE ONTO A PUBLIC STREET.
2. SOIL STABILIZATION FABRIC SHALL BE USED AS A BASE FOR THE CONSTRUCTION ENTRANCE.
3. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC STREETS OR EXISTING PAVEMENT. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS WARRANT AND REPAIR OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
4. ANY SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC STREETS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
5. WHEN APPROPRIATE, WHEELS MUST BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTERING A PUBLIC STREET. WHEN WASHING IS REQUIRED, IT SHALL BE DONE IN AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN.

NOTE: IF A SIMILAR DETAIL IS PROVIDED IN THE CONSTRUCTION DRAWINGS,
THE CONSTRUCTION DRAWINGS DETAIL SHALL SUPERCEDE THIS DRAWING.

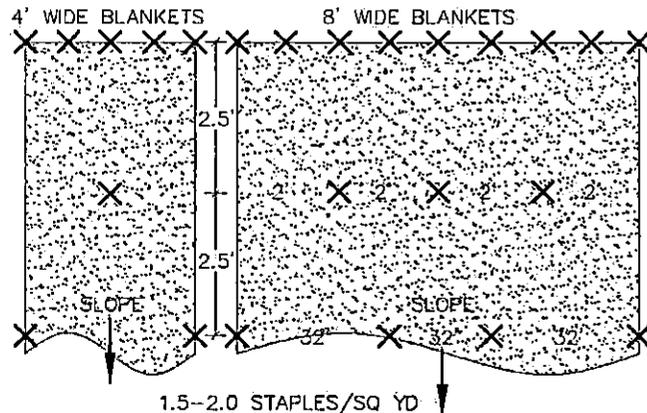


STORMWATER MANUAL

FIGURE 11-5
**STAPLE PATTERN FOR STRAW
 OR EXCELSIOR MATS**
 (EFFECTIVE DATE 1/13/2011)

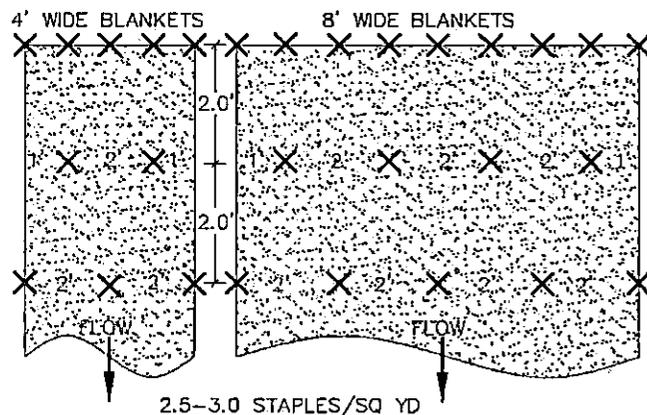
SLOPES UP TO 1.5H:1V

- INSTALL BLANKET VERTICALLY OR HORIZONTALLY
 - USE 12" STAPLE SPACING ON STARTER ROW.
- COHESIVE SOILS:
- NO OVERLAP REQUIRED ON SIDE SEAMS
 - USE 6" STAPLE LENGTH
- NON-COHESIVE SOILS:
- USE 6" SIDE SEAM OVERLAP
 - USE 8" STAPLE LENGTH
 - USE 6" ANCHOR TRENCH AT TOP OF SLOPE



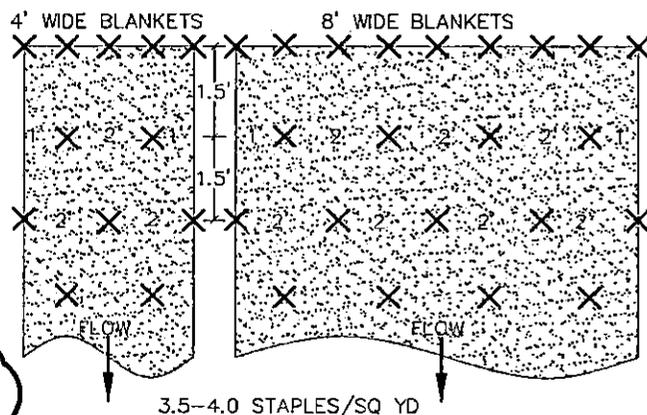
CHANNELS IN COHESIVE SOILS

- USE 6" SIDE SEAM OVERLAP
 - USE 6" STAPLE LENGTH
 - USE 6" TRANSVERSE ANCHOR TRENCH AT 100-FT. INTERVALS
- USE 12" STAPLE SPACING ON STARTER ROW.
 - UPSTREAM BLANKET SHOULD OVERLAP DOWNSTREAM BLANKET A DISTANCE OF 12" IN A "SHINGLE" FASHION AND BURY THE FINISHED TOE AT LEAST 6".



CHANNELS IN NON-COHESIVE SOILS

- USE 6" SIDE SEAM OVERLAP
 - USE 8" STAPLE LENGTH
 - USE 6" TRANSVERSE ANCHOR TRENCH AT 50-FT. INTERVALS
- USE 12" STAPLE SPACING ON STARTER ROW.
 - UPSTREAM BLANKET SHOULD OVERLAP DOWNSTREAM BLANKET A DISTANCE OF 12" IN A "SHINGLE" FASHION AND BURY THE FINISHED TOE AT LEAST 6".

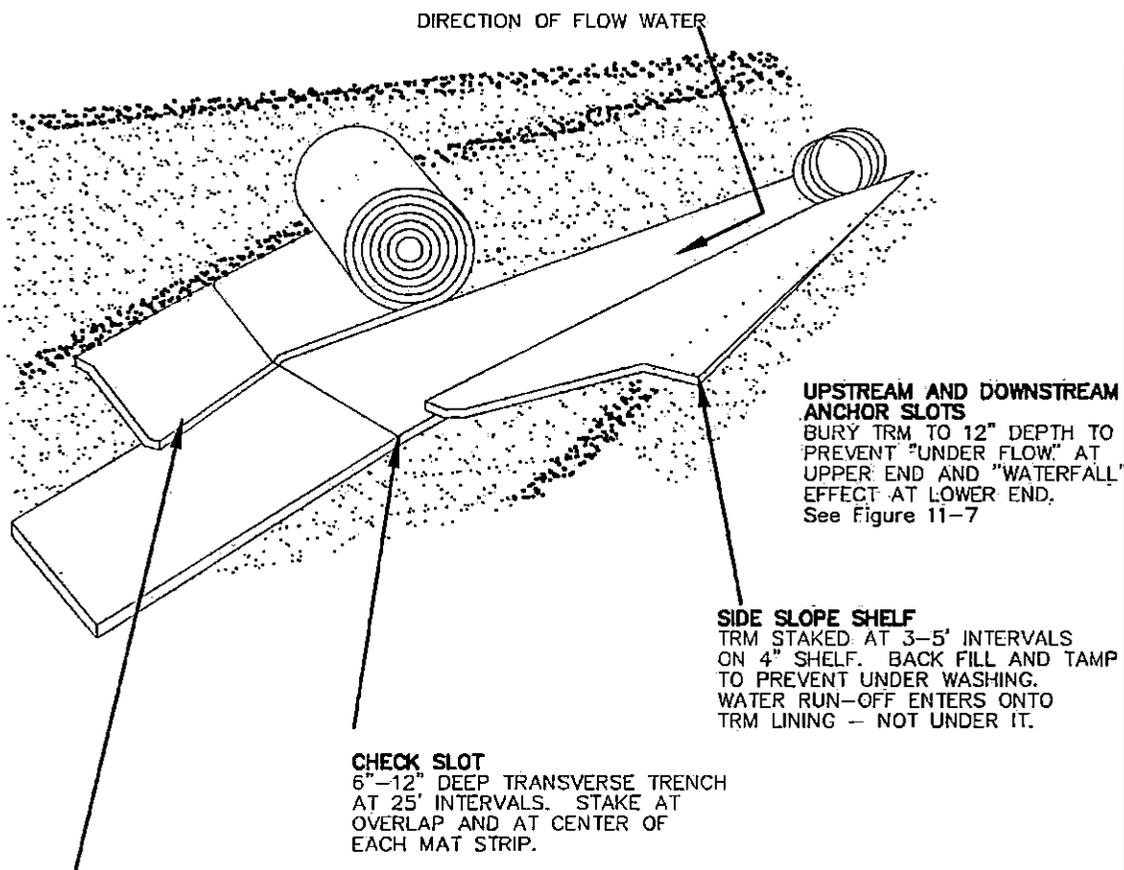


NOTE: IF A SIMILAR DETAIL IS PROVIDED IN THE CONSTRUCTION DRAWINGS, THE CONSTRUCTION DRAWINGS DETAIL SHALL SUPERCEDE THIS DRAWING.



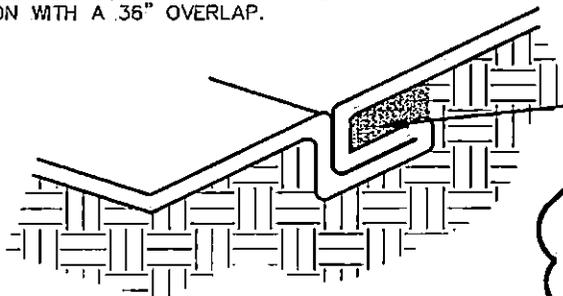
STORMWATER MANUAL

FIGURE 11-6
PLACEMENT OF TRM IN CHANNEL
(EFFECTIVE DATE 1/13/2011)



OVERLAP IN A SHINGLE FASHION
3" OVERLAP STAKED AT 3-5' INTERVALS

WHEN ROLL TERMINATES, IT IS STAKED OVER THE ROLL WHICH EXTENDS DOWNSTREAM IN A SHINGLE FASHION WITH A 36" OVERLAP.



CHECK SLOT DETAIL
STAKE AND BACK FILL IN CHECK SLOT BEFORE CONTINUING TO PLACE UPSLOPE

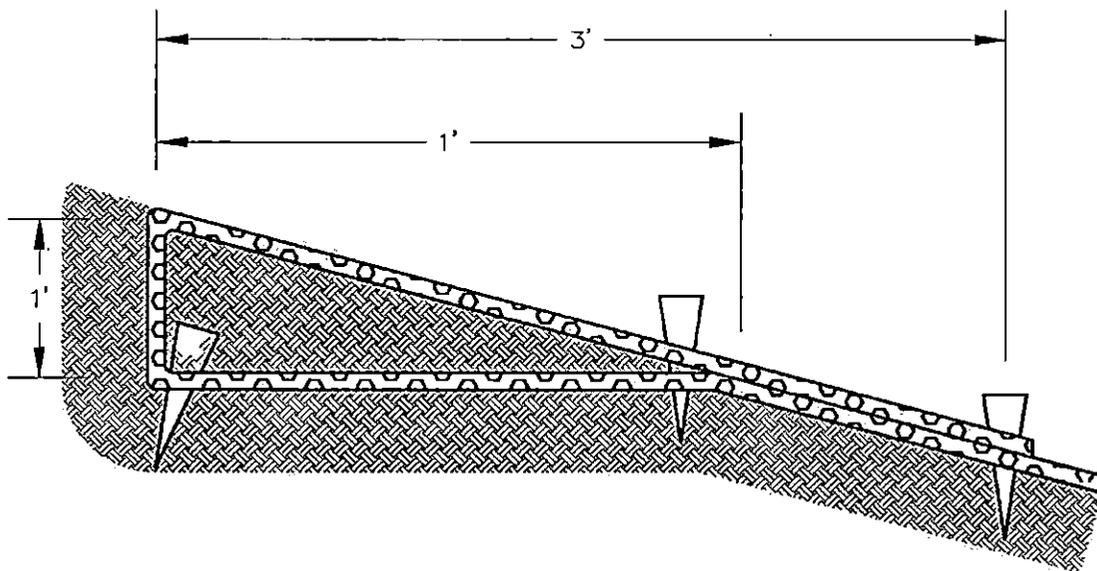
NOTE: IF A SIMILAR DETAIL IS PROVIDED IN THE CONSTRUCTION DRAWINGS, THE CONSTRUCTION DRAWINGS DETAIL SHALL SUPERCEDE THIS DRAWING.



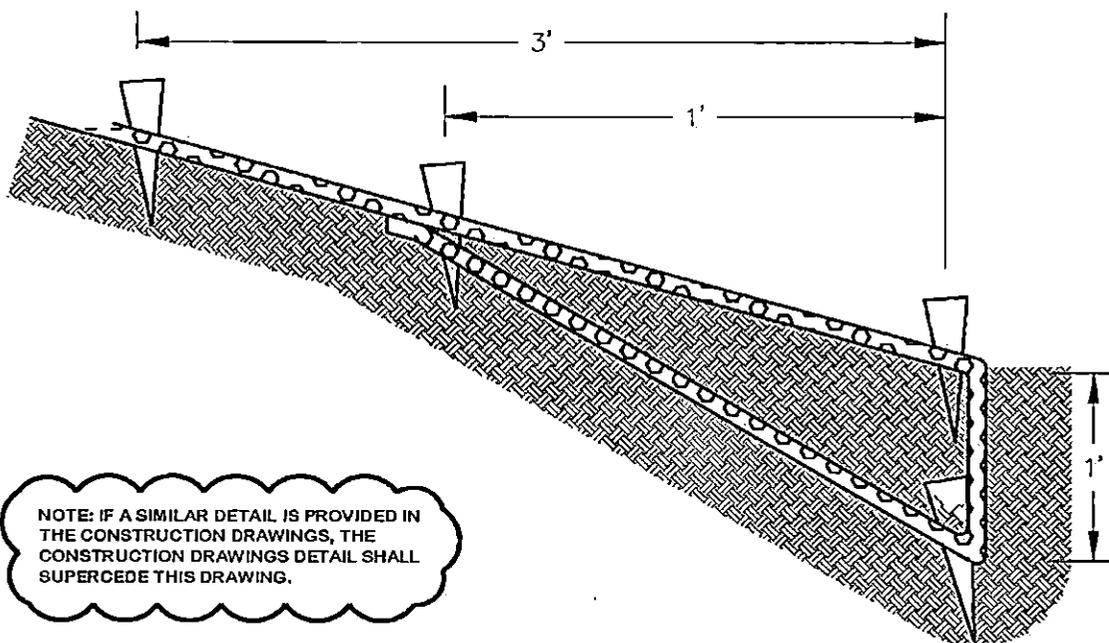
STORMWATER MANUAL

FIGURE 11-7
ANCHOR SLOT DETAILS FOR TRM
(EFFECTIVE DATE 1/13/2011)

UPSTREAM ANCHOR SLOT DETAIL



DOWNSTREAM ANCHOR SLOT DETAIL

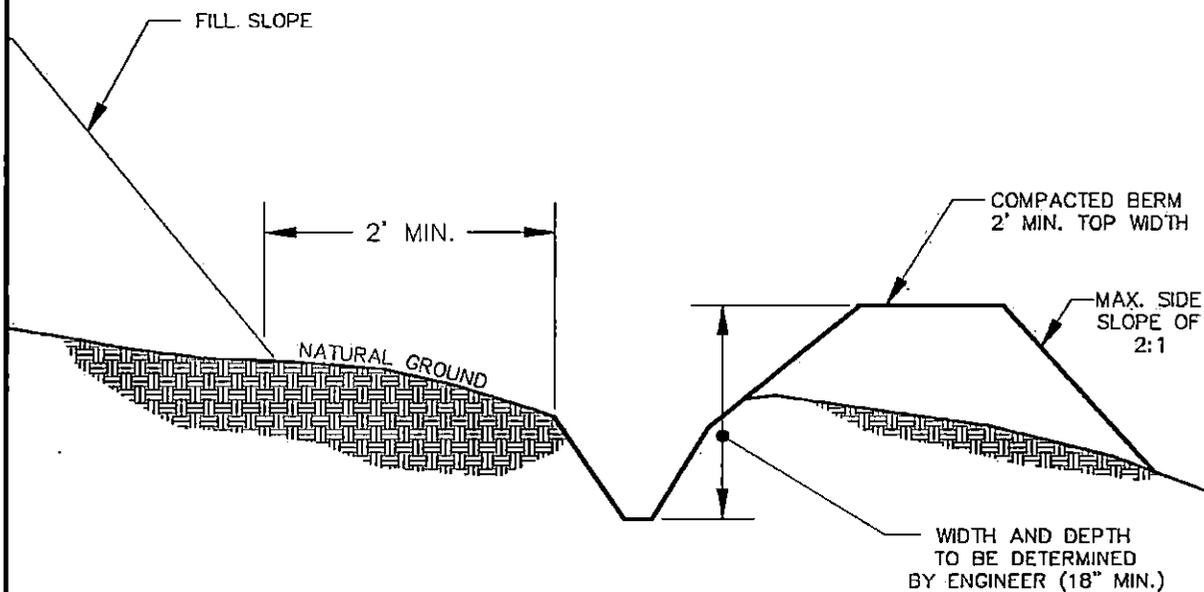


NOTE: IF A SIMILAR DETAIL IS PROVIDED IN THE CONSTRUCTION DRAWINGS, THE CONSTRUCTION DRAWINGS DETAIL SHALL SUPERCEDE THIS DRAWING.



STORMWATER MANUAL

FIGURE 11-12
TEMPORARY DIVERSION DITCH
(EFFECTIVE DATE 1/13/2011)



NOTE: IF A SIMILAR DETAIL IS PROVIDED IN THE CONSTRUCTION DRAWINGS, THE CONSTRUCTION DRAWINGS DETAIL SHALL SUPERCEDE THIS DRAWING.

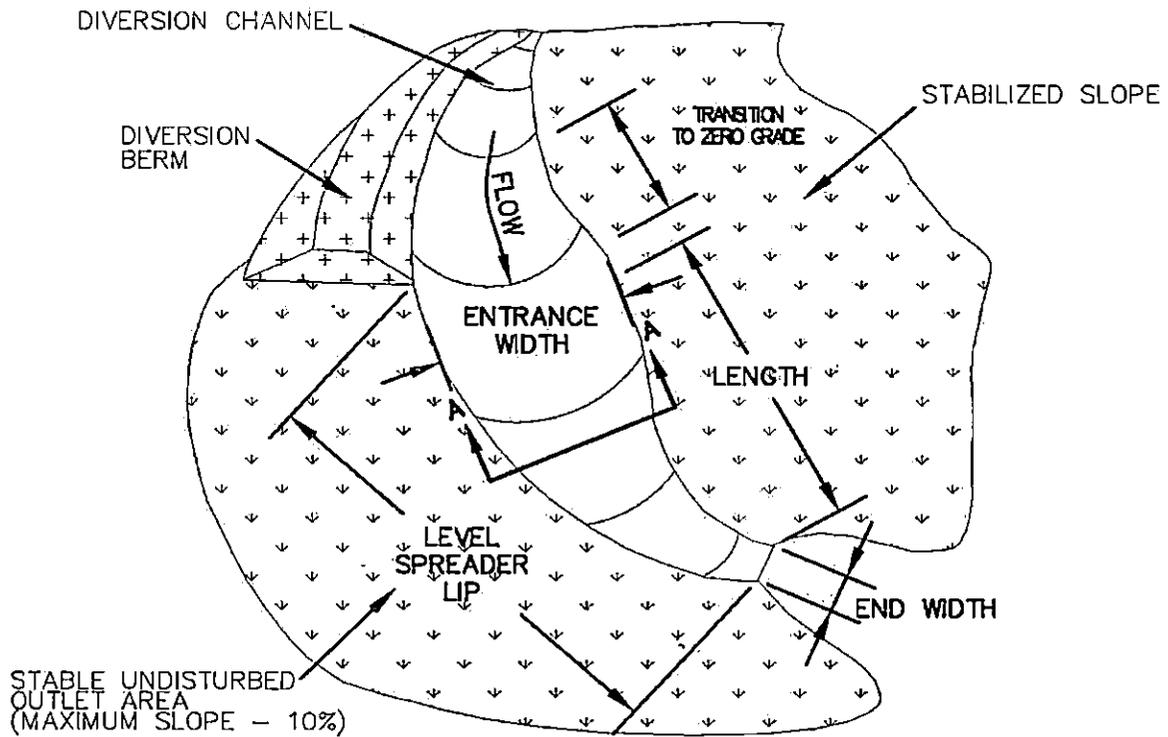


STORMWATER MANUAL

FIGURE 11-13

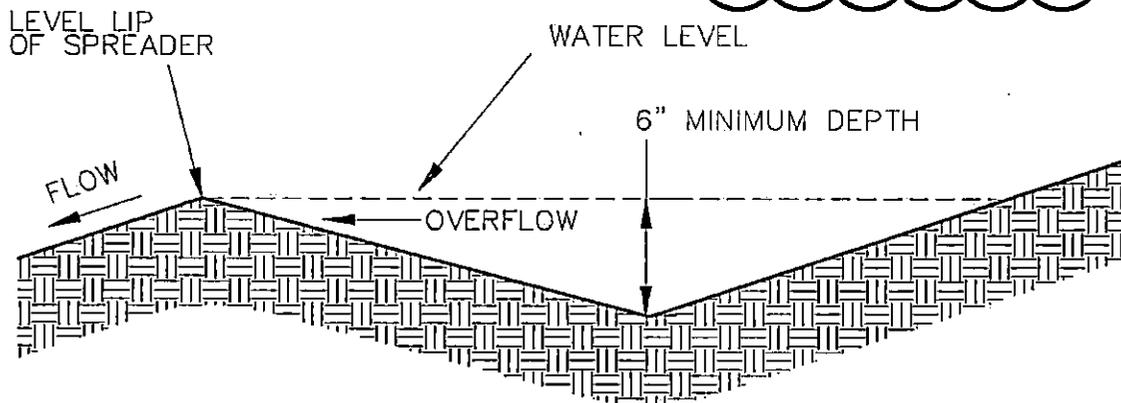
LEVEL SPREADER

(EFFECTIVE DATE 1/13/2011)



PERSPECTIVE

NOTE: IF A SIMILAR DETAIL IS PROVIDED IN THE CONSTRUCTION DRAWINGS, THE CONSTRUCTION DRAWINGS DETAIL SHALL SUPERCEDE THIS DRAWING.

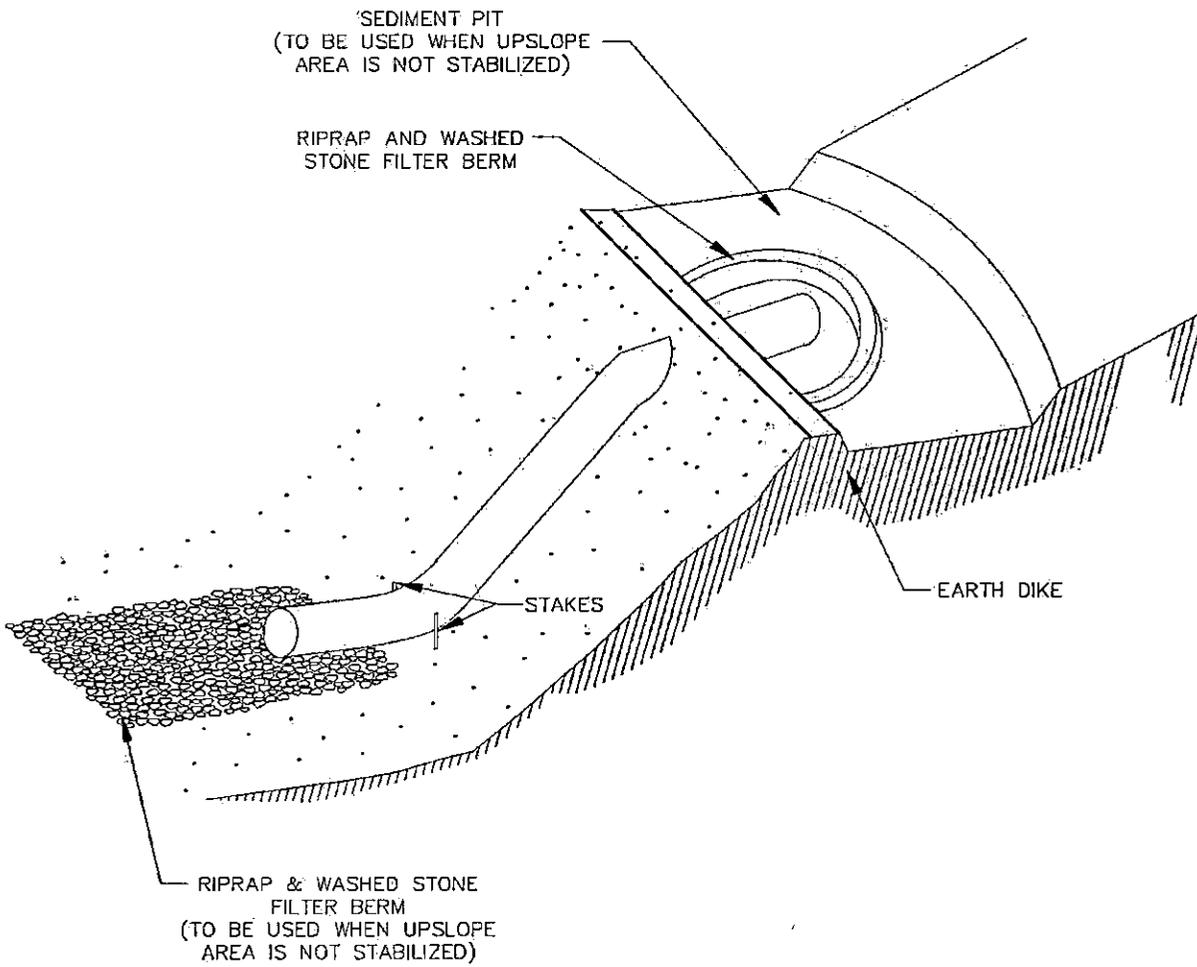


SECTION A-A



STORMWATER MANUAL

FIGURE 11-14
FLEXIBLE PIPE SLOPE DRAIN
(EFFECTIVE DATE 1/13/2011)

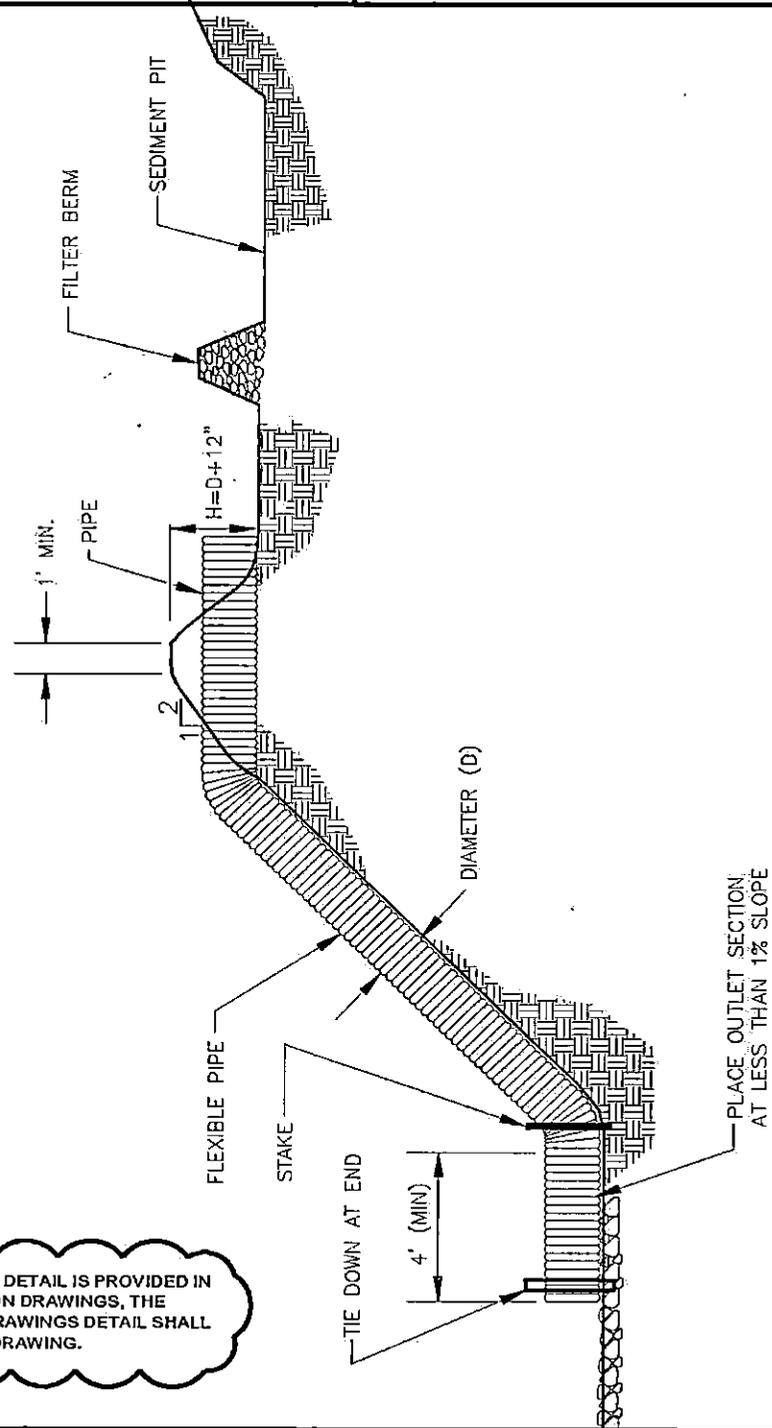


NOTE: IF A SIMILAR DETAIL IS PROVIDED IN
THE CONSTRUCTION DRAWINGS, THE
CONSTRUCTION DRAWINGS DETAIL SHALL
SUPERCEDE THIS DRAWING.



STORMWATER MANUAL

FIGURE 11-15
SLOPE DRAIN - PROFILE
(EFFECTIVE DATE 1/13/2011)

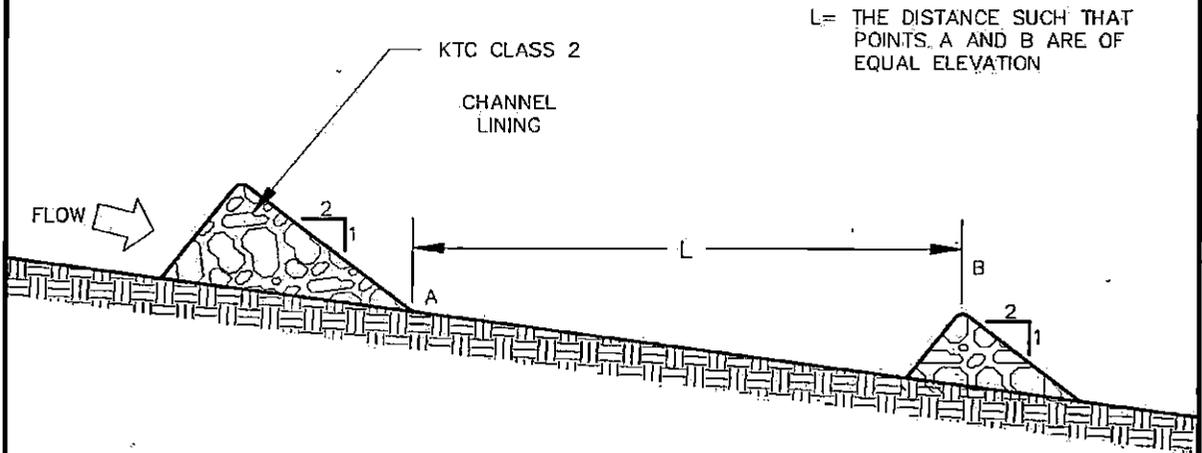


NOTE: IF A SIMILAR DETAIL IS PROVIDED IN THE CONSTRUCTION DRAWINGS, THE CONSTRUCTION DRAWINGS DETAIL SHALL SUPERCEDE THIS DRAWING.



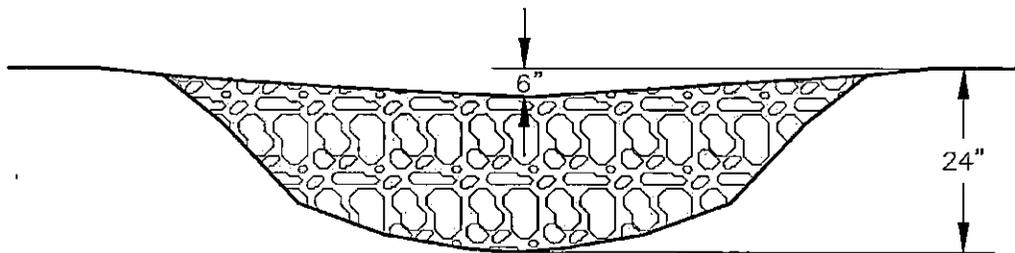
STORMWATER MANUAL

FIGURE 11-16
ROCK CHECK DAM
(EFFECTIVE DATE 1/13/2011)



L = THE DISTANCE SUCH THAT
POINTS A AND B ARE OF
EQUAL ELEVATION

LONGITUDINAL SECTION SHOWING
SPACING BETWEEN CHECK DAMS



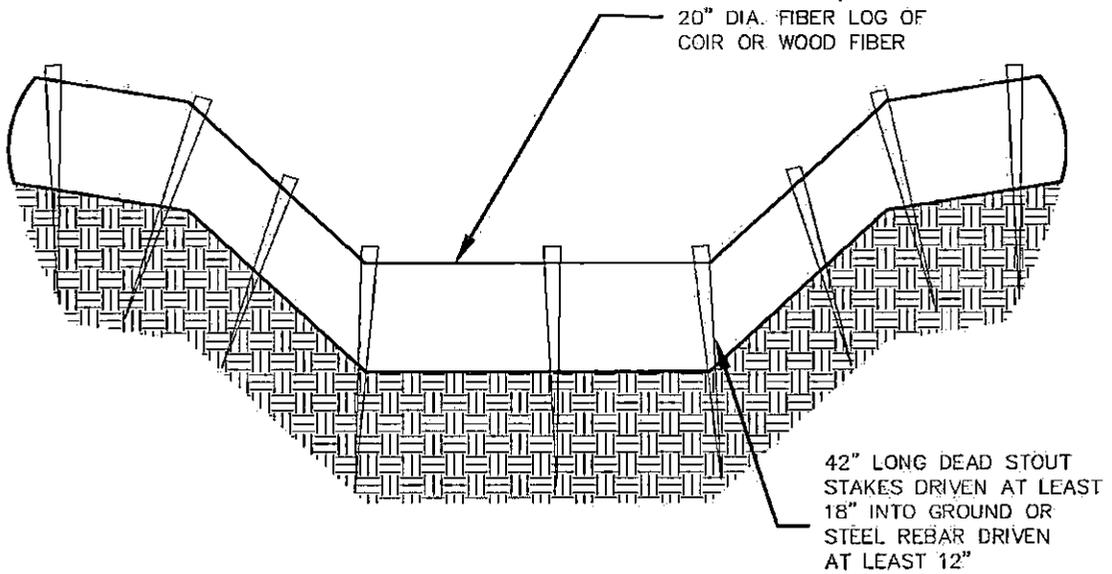
SECTION ACROSS CHANNEL

NOTE: IF A SIMILAR DETAIL IS PROVIDED IN
THE CONSTRUCTION DRAWINGS, THE
CONSTRUCTION DRAWINGS DETAIL SHALL
SUPERCEDE THIS DRAWING.



STORMWATER MANUAL

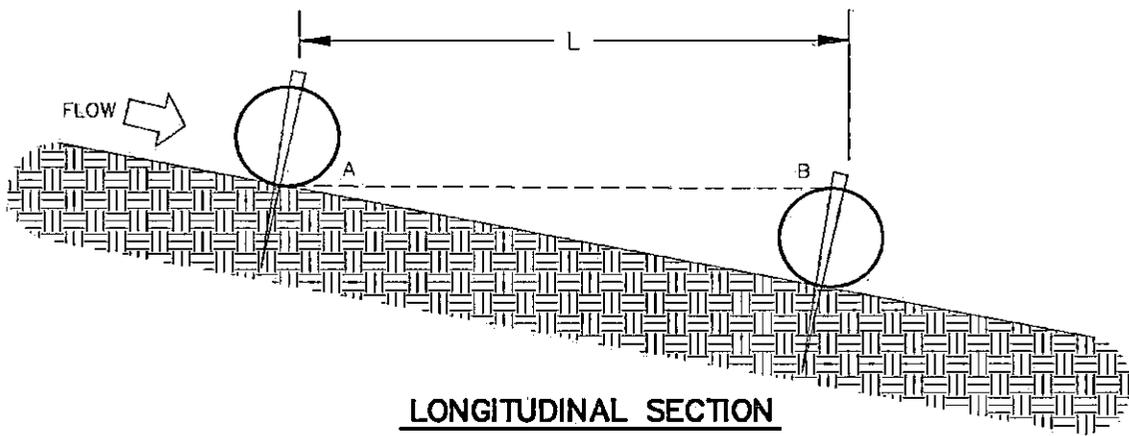
FIGURE 11-17
FIBER LOG CHECK DAM
(EFFECTIVE DATE 1/01/09)



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.

NOTE: IF A SIMILAR DETAIL IS PROVIDED IN THE CONSTRUCTION DRAWINGS, THE CONSTRUCTION DRAWINGS DETAIL SHALL SUPERCEDE THIS DRAWING.



LONGITUDINAL SECTION

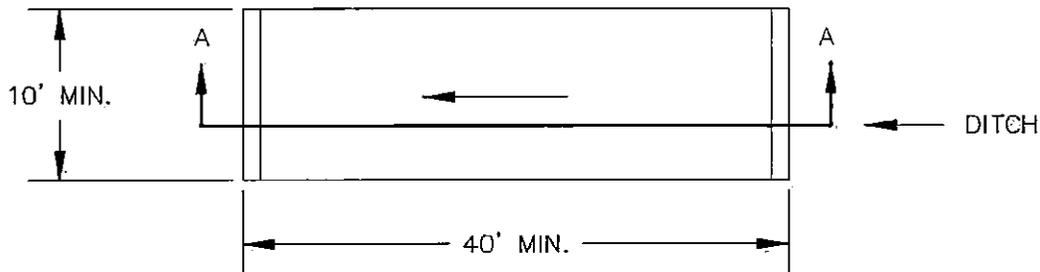
L = DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION



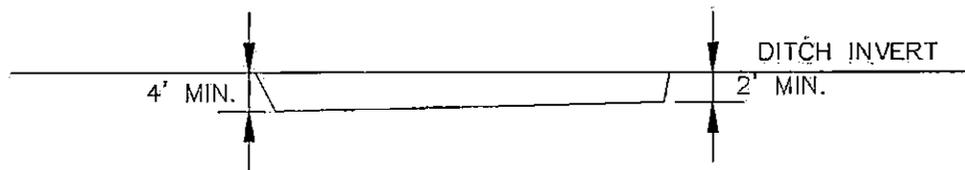
STORMWATER MANUAL

FIGURE 11-18
SEDIMENT TRAP

(EFFECTIVE DATE 1/13/2011)



PLAN VIEW



SECTION A-A

NOTE: IF A SIMILAR DETAIL IS PROVIDED IN THE CONSTRUCTION DRAWINGS, THE CONSTRUCTION DRAWINGS DETAIL SHALL SUPERCEDE THIS DRAWING.

NOTES:

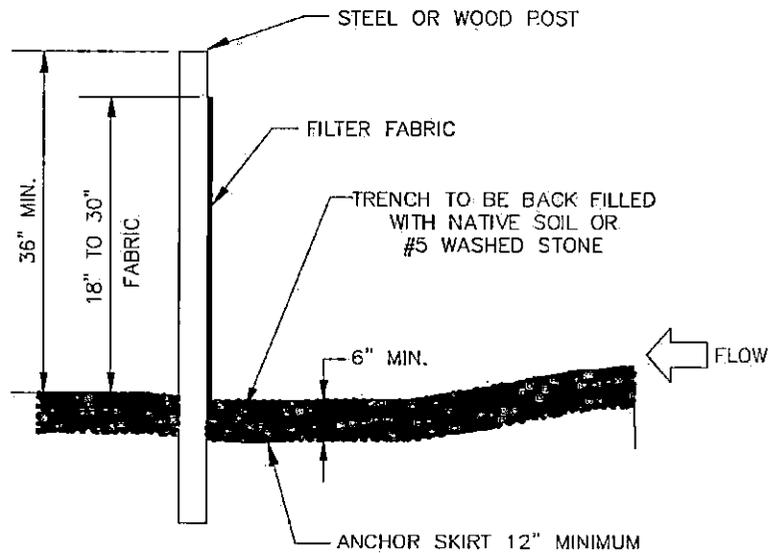
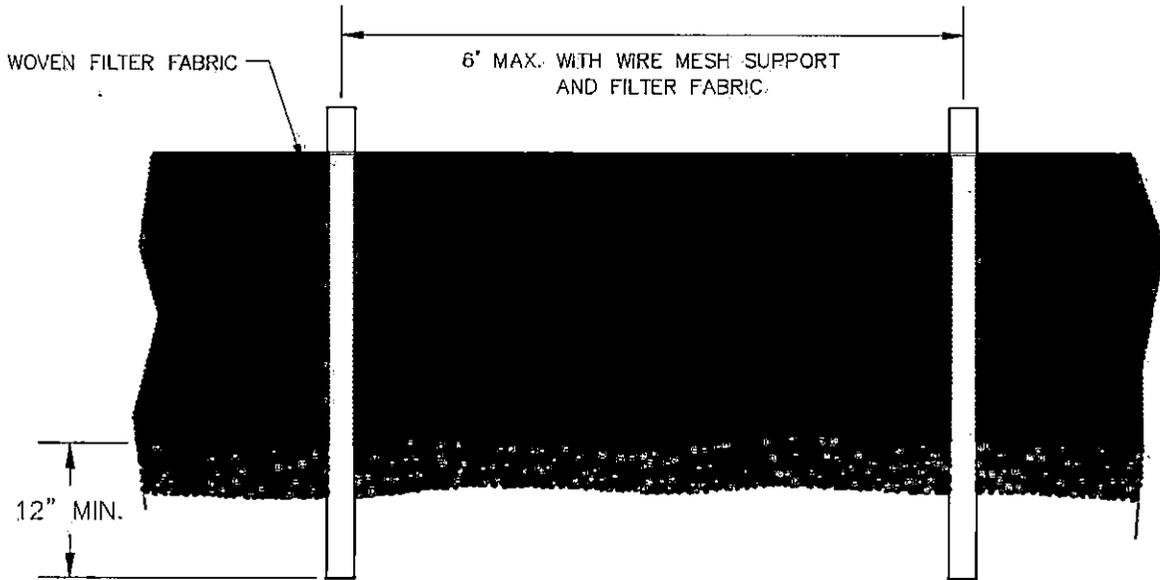
- 1) THE SIZE, SHAPE AND LOCATION OF TRAP MAY BE ADJUSTED FROM THAT SHOWN IN THE CONSTRUCTION PLANS, AS DIRECTED BY THE ENGINEER.
- 2) THE SEDIMENT TRAP MAY BE CONSTRUCTED AS DIRECTED BY THE ENGINEER AS LONG AS THE AREA AND DEPTH IS AT LEAST AS THAT INDICATED ON THE PLANS.
- 3) SEDIMENT TRAP SHALL BE 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 11-21
TEMPORARY SILT FENCE
(EFFECTIVE DATE 1/13/2011)

NOTE: IF A SIMILAR DETAIL IS PROVIDED IN THE CONSTRUCTION DRAWINGS, THE CONSTRUCTION DRAWINGS DETAIL SHALL SUPERCEDE THIS DRAWING.





STORMWATER MANUAL

FIGURE 11-22
TEMPORARY SILT FENCE
GENERAL NOTES
(EFFECTIVE DATE 1/13/2011)

GENERAL NOTES

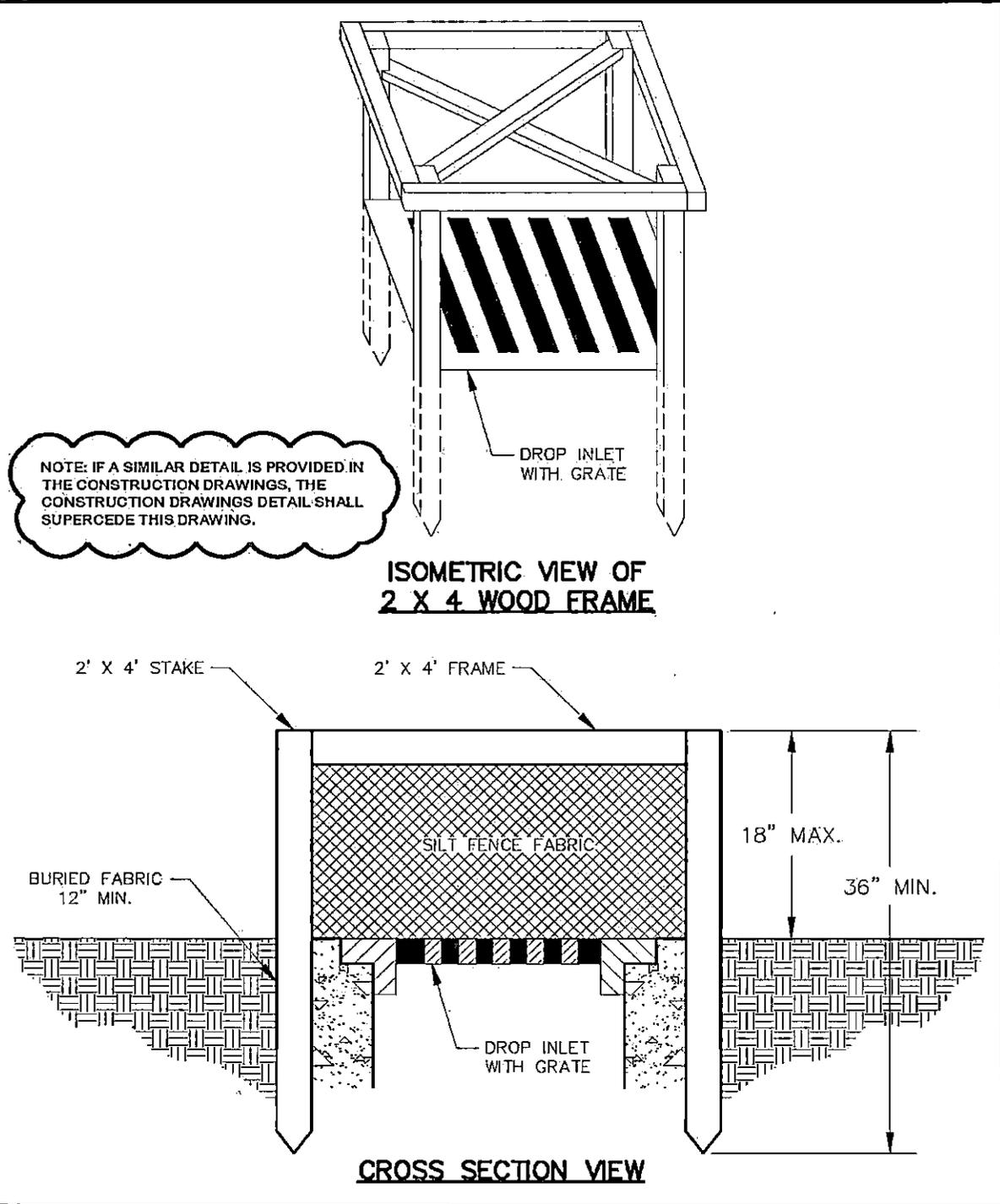
1. FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL AND CUT TO THE LENGTH OF THE BARRIER. WHEN JOINTS CANNOT BE AVOIDED, FILTER FABRIC SHALL BE SPLICED TOGETHER ONLY AT A POST WITH 3 FOOT MIN. OVERLAP, AND SECURELY SEALED.
2. POSTS SHALL BE SPACED AT 6 FOOT INTERVALS IN AREAS OF RAPID RUNOFF.
3. 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.

NOTE: IF A SIMILAR DETAIL IS PROVIDED IN THE CONSTRUCTION DRAWINGS, THE CONSTRUCTION DRAWINGS DETAIL SHALL SUPERCEDE THIS DRAWING.



STORMWATER MANUAL

FIGURE 11-23
DROP INLET PROTECTION
USING SILT FENCE
(EFFECTIVE DATE 1/13/2011)

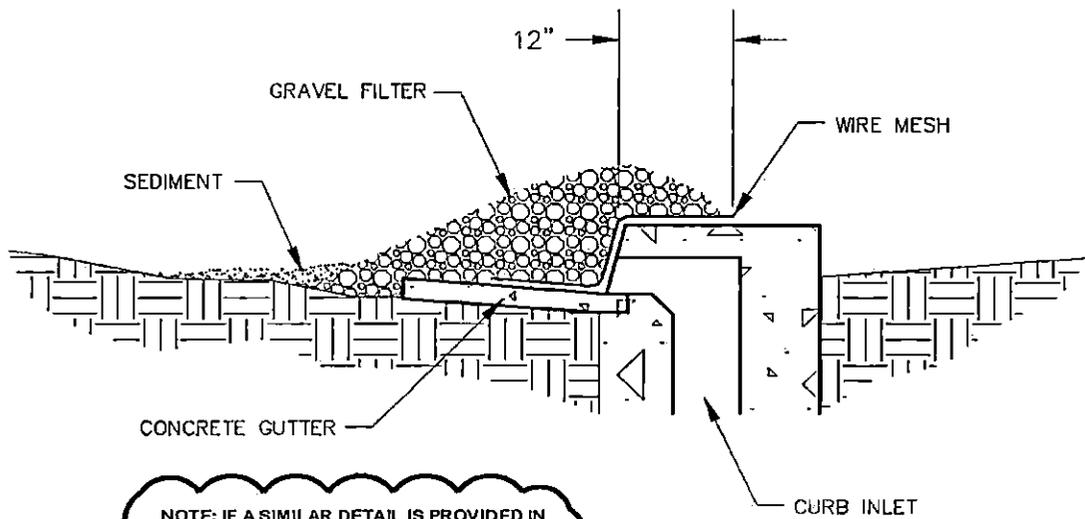
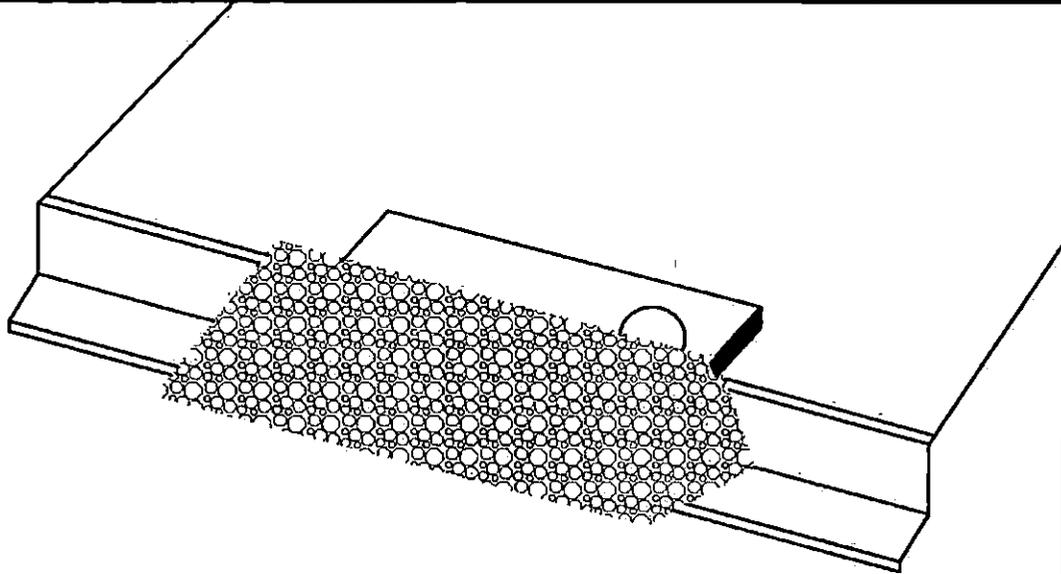




STORMWATER MANUAL

FIGURE 11-24
GRAVEL CURB INLET SEDIMENT FILTER

(EFFECTIVE DATE 1/13/2011)



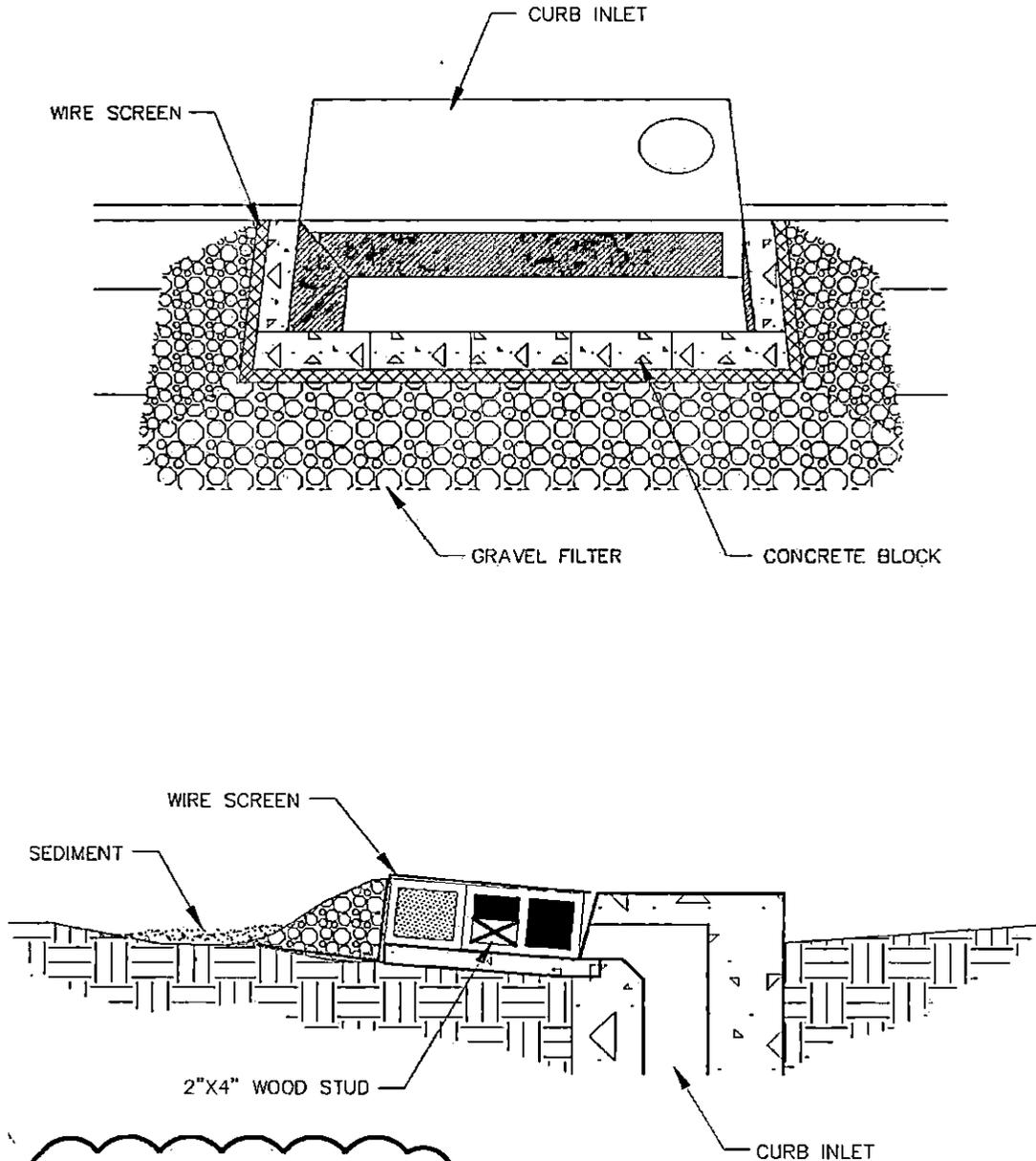
NOTE: IF A SIMILAR DETAIL IS PROVIDED IN THE CONSTRUCTION DRAWINGS, THE CONSTRUCTION DRAWINGS DETAIL SHALL SUPERCEDE THIS DRAWING.



STORMWATER MANUAL

FIGURE 11-25
BLOCK AND GRAVEL CURB INLET
SEDIMENT FILTER

(EFFECTIVE DATE 1/13/2011)

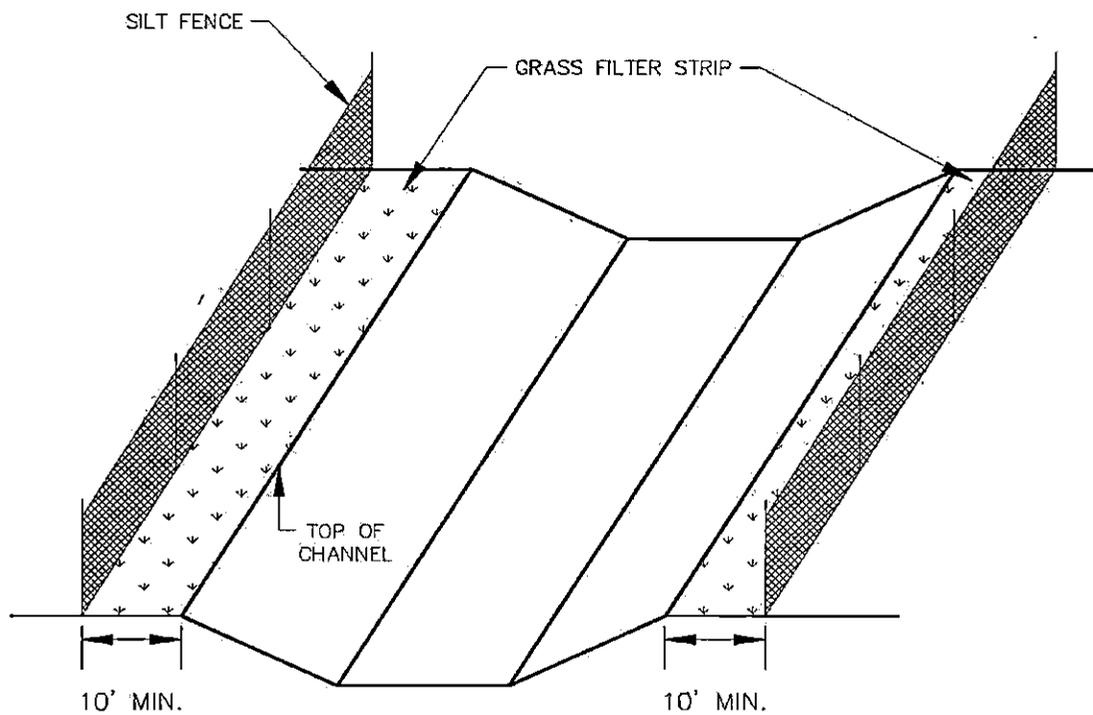


NOTE: IF A SIMILAR DETAIL IS PROVIDED IN THE CONSTRUCTION DRAWINGS, THE CONSTRUCTION DRAWINGS DETAIL SHALL SUPERCEDE THIS DRAWING.



STORMWATER MANUAL

FIGURE 11-26
FILTER STRIP FOR
CONSTRUCTED CHANNEL
(EFFECTIVE DATE 1/13/2011)

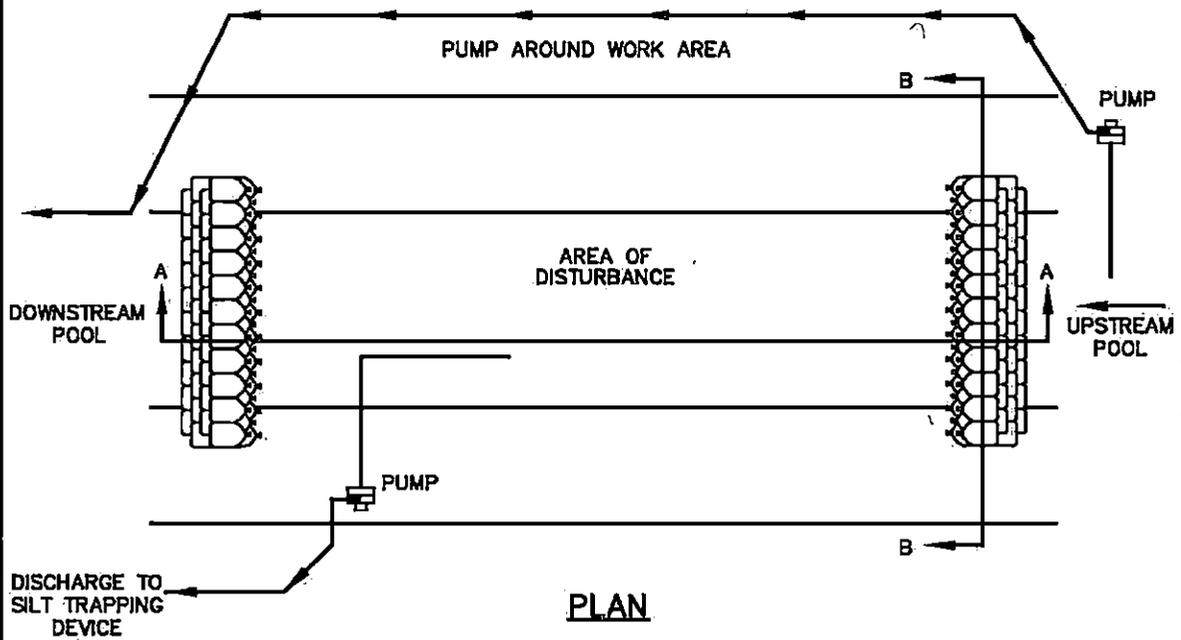


NOTE: IF A SIMILAR DETAIL IS PROVIDED IN
THE CONSTRUCTION DRAWINGS, THE
CONSTRUCTION DRAWINGS DETAIL SHALL
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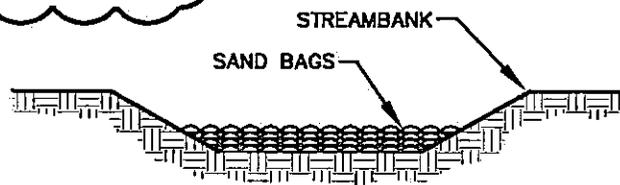


STORMWATER MANUAL

FIGURE 11-27
PUMP-AROUND FLOW DIVERSION
(EFFECTIVE DATE 1/13/2011)



NOTE: IF A SIMILAR DETAIL IS PROVIDED IN THE CONSTRUCTION DRAWINGS, THE CONSTRUCTION DRAWINGS DETAIL SHALL SUPERCEDE THIS DRAWING.



TECHNICAL SPECIFICATIONS

SECTION 18 – CRUSHED LIMESTONE

18.1 AGGREGATE FOR NO. 2 and NO. 9 CRUSHED LIMESTONE

Aggregate for no. 2 and no. 9 Crushed Limestone shall be limestone meeting the general requirements of Section 805 of the Kentucky Transportation Cabinet/ Department of Highways Standard Specifications for Road and Bridge Construction. This material shall be produced by using a crusher, grizzly, or sieve with openings to produce appropriate gradation. Gradation shall be as per Gradation charts in section 805 of the KDOH standard specifications.

18.2 METHOD OF PAYMENT

The Owner will make payment for the completed and accepted quantities under the following:

| <u>Pay Item</u> | <u>Pay Unit</u> |
|-------------------------|-----------------|
| NO. 2 Crushed Limestone | Ton |
| NO. 9 Crushed Limestone | Ton |

TECHNICAL SPECIFICATIONS

SECTION 19 – PROJECT SIGN

19.1 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.

19.2 BASIS OF PAYMENT

Payment for project signs shall be per sign, properly prepared, installed and removed upon completion of the project. Contractor shall install two sign at the locations identified at the Pre-Construction Meeting.

TECHNICAL SPECIFICATIONS

SECTION 20 – FINAL CLEANUP

20.1 SCOPE

The work will not be considered as completed, 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 material of whatever nature shall be disposed of in waste areas provided by the CONTRACTOR. All property, both public and private, which has been damaged in the execution of the work, shall be replaced or restored in an acceptable manner. All ditches shall be drained and all space shall be left unobstructed and in such condition as acceptable to the ENGINEER.

20.2 BASIS OF PAYMENT

Final Cleanup shall be paid for by Lump Sum.

TECHNICAL SPECIFICATIONS

SECTION 21 - GEOTEXTILE CONSTRUCTION

21.1 SCOPE

Work for this Section shall be in accordance to Kentucky Department of Highways Standard Specifications Sections 214 and 843 (Type I 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, excavation, materials, equipment, and incidentals necessary to complete the work.

21.2 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 excavation shall be incidental to the placement of geotextile fabric (Type I, Type II, Type III or Type IV).

TECHNICAL SPECIFICATIONS

SECTION 22 - GEOGRID CONSTRUCTION

21.1 SCOPE

Work for this Section shall be in accordance to Kentucky Department of Highways Standard Specifications Sections 304 for subgrade and aggregate base courses, current edition and shall include all labor, excavation, materials, equipment, and incidentals necessary to complete the work.

21.2 BASIS OF PAYMENT

Accepted quantities for Geogrid 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 geogrid satisfactorily placed. All labor, materials (other than the geogrid), equipment, and excavation shall be incidental to the placement of geogrid.

TECHNICAL SPECIFICATIONS

SECTION 23 – CLEANING & INTERNAL INSPECTION OF STORM SEWER PIPE: CCTV

23.1 SCOPE

A CLOSED CIRCUIT TELEVISION (CCTV) survey is required for all newly installed sewer pipe and/or any designated existing pipe shall be performed. 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.

23.2 GENERAL

All lines 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.

No later than each Thursday morning, the Contractor's Project Coordinator shall provide the Engineer with a tentative weekly schedule, and shall also provide daily notification of those areas to be investigated.

23.3 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.

23.4 RECOMMENDED METHOD FOR INTERNAL INSPECTION

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.

23.5 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, 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 discernible 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 and the Contractor must supply the LFUCG a readable copy of said software to view these DVD's.

23.6 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-televiser 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.

23.7 BASIS OF PAYMENT

The television survey shall be at the Contractor's expense and is incidental to the installation of the pipe.

TECHNICAL SPECIFICATIONS

SECTION 24 - CLEANING AND INTERNAL INSPECTION OF SANITARY SEWER PIPE: CCTV

24.1 CLEANING:

A. GENERAL INFORMATION:

The intent of sewer line cleaning is to remove foreign materials from the lines and restore the sewer to a minimum of 95% of the original carrying capacity or as required for installation of cured-in-place liners or polyethylene slipline pipe. Since the success of the other phases of work depends a great deal on the cleanliness of the lines, the importance of this phase of the operation is emphasized. It is recognized that there are some conditions such as broken pipe and major blockages that prevent cleaning from being accomplished or where additional damage would result if cleaning were attempted or continued. Should such conditions be encountered, the Contractor will not be required to clean those specific manhole sections. If, however, in the course of normal cleaning operations, damage does result from pre-existing and unforeseen conditions such as broken pipe, the Contractor may be responsible. The Contractor should take every precaution to prevent accidental damage to the sewers being cleaned.

B. METHODS:

The designated sewer manhole sections shall be cleaned using a high-velocity jet. Selection of the equipment used shall be based on the conditions of the sewers at the time the work commences. The equipment and methods selected shall be satisfactory to the Engineer. The equipment shall be capable of removing dirt, grease, rocks, sand, and other materials and obstructions from the sewer lines and manholes. If cleaning of an entire section cannot be successfully performed from one manhole, the equipment shall be set up on the other manhole and cleaning again attempted. Extreme care should be taken to prevent flooding of public/private property. If, again successful cleaning cannot be performed or the equipment fails to traverse the entire manhole section, it will be assumed that a major blockage exists and the cleaning effort shall be abandoned and the Engineer notified.

C. EQUIPMENT:

High-Velocity Jet (Hydrocleaning) Equipment: All high-velocity sewer cleaning equipment shall be constructed for ease and safety of operation. The equipment shall have a selection of two or more high-velocity nozzles. The nozzles shall be capable of producing a scouring action from 15 to 45 degrees in all size lines designated to be cleaned. Equipment shall also include a high-velocity gun for washing and scouring manhole wall and floors. The gun shall be capable of producing flows from a fine spray to a solid stream. The equipment shall have minimum of 500 feet of 1-inch ID high-pressure hose, a minimum capacity of 60 gallons per minute (GPM), and a working pressure of at least 1,200 pounds per square inch (PSI). The equipment shall carry its own water tank capable of holding a minimum of 900 gallons, auxiliary engines, pumps and hydraulically driven hose reel. The equipment may be either truck or trailer mounted as long as it adequately accomplishes the cleaning.

All controls shall be located so that the equipment can be operated above ground with minimal interference to traffic and/or danger to the operator.

D. MECHANICAL ROOT REMOVAL:

Roots shall be removed in the designated sections where root intrusion is a problem. Special attention should be used during the cleaning operation to assure complete removal of roots from joints. Any roots that could prevent the proper installation of cured-in-place liners or polyethylene slipline pipe shall be removed. Procedures shall include the use of mechanical equipment such as root augers, porcupine drags or similar equipment.

The root auger equipment shall be approximately the same diameter as the sewer being cleaned. The auger(s) shall be kept sharp and have an attachment mounted ahead of the cutter that will permit the tool to "ride into" the next length of pipe rather than be stopped by an irregularity or offset in the pipe wall.

The porcupine drag shall be of a smaller diameter than the sewer being cleaned. The porcupine shall have stiff wire bristles that project an adequate distance so as to contact the sewer walls and effectively remove the majority of roots encountered.

E. HEAVY CLEANING:

In the event that the hydraulic cleaning effort for a single line segment requires more than one hour to successfully remove all dirt, grease, rocks, sand, and other materials (excluding roots), the sewer line shall be considered in need of heavy cleaning subject to the approval of the Engineer, and will be paid on that basis.

F. MATERIAL REMOVAL:

All sand, rocks, roots, grease, and other solid or semisolid material resulting from the cleaning operation shall be removed at the downstream manhole of the section being cleaned. Passing material from manhole section to downstream manhole sections could cause line stoppages, accumulations of sand in wet wells, or damage pumping equipment and shall not be permitted.

The Contractor shall furnish all equipment and appurtenances required for removal of the debris from the sewer system. No extra payment will be made for removing or disposing of the debris since this is considered a part of the cleaning scope of work.

All materials shall be removed from the site no less often than at the end of each workday. Under NO circumstances will the Contractor be allowed to accumulate debris, etc., on the site of work except in totally enclosed containers approved by the Engineer.

G. DISPOSAL OF DEBRIS:

Unit prices for cleaning shall include the cost of trapping and removing any and all roots, sediments, and residual wastes from sewer systems and manholes as cleaning progresses. Where a hydraulic jet sewer cleaner is used to scour and flush sewer lines, a vacuum unit or other suitable method as approved by the Engineer shall be used in conjunction with the hydraulic jet cleaner to remove and dewater the suspended matter from the downstream manhole.

The Contractor shall provide for adequate transportation and satisfactory disposal of the debris removed from the system.

H. ACCESSIBILITY OF WATER FOR CLEANING:

The Contractor shall be required to obtain all fresh water necessary for performance of work under this contract. Section 1.19 of these Technical Specifications provides a local telephone number for Kentucky American Water Company to make arrangements for fresh water supplies.

I. PROTRUDING TAP REMOVAL

Protruding taps shall be removed in the designated sections where service lateral pipe intrusion is a problem and specifically requested by the Engineer in writing. A power driven cutting device shall be used to cut the service lateral pipe to a length of ¼ inch or less intrusion. Monitoring of this process through CCTV is necessary to prevent damage to the sewer pipe and/or service lateral pipe. If damage does result from operator negligence, the Contractor will be responsible for making any repairs. The Contractor should take every precaution to prevent accidental damage to the sewer pipe. The CCTV inspection is to be included in the Protruding Tap Removal line item price and the videotape shall be submitted to the Engineer within one week after the repair is completed.

J. FINAL ACCEPTANCE:

Acceptance of this portion of the work shall be made upon the successful completion of the subsequent internal television inspection and shall be to the satisfaction of the Engineer. Where cleaning is not found to be satisfactory, additional cleaning, up to three passes may be required by the Engineer at no cost to the Owner.

If cured-in-place liner is to follow the television inspection, particular attention shall be given to the adequacy of the cleaning to insure that the condition of the host pipe shall be acceptable for liner installation.

24.2 INTERNAL INSPECTION:

A. GENERAL:

All lines designated 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.

After cleaning, the collection pipe shall be visually inspected by means of closed circuit television. The inspection will be done one pipe section at a time and the flow in the section being inspected will be suitably controlled as specified. (See Section 3: SEWER FLOW CONTROL.)

Any structural damage found in the collection pipe 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 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 sanitary 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.

B. EQUIPMENT:

The television camera used for the inspection shall be one specifically designed and constructed for such inspection. The camera shall be small enough to pass through a six (6) inch diameter sewer and should 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 camera shall be operable in 100 percent humidity conditions. The camera, television monitor and other components of the video 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. Videotapes shall be VHS format and shall be recorded at standard speed.

The camera monitor shall be located within a vehicle that will accommodate three people to watch the sewer line inspection. The Engineer and Owner shall have access to view the television monitor at all times.

A skilled technician shall control the operation of the equipment from a control panel located in the vehicle and shall have control of the movement of the television camera at all times. This may be accomplished by means of a self-propelled camera unit, remote-control winches, by telephone or other suitable means of communications between the winches at either end of the line segment being inspected.

C. RECOMMENDED METHOD FOR INTERNAL INSPECTION:

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.

The camera will stop at each service connection and use the pan and rotate controls of the camera to inspect the condition of the service lateral. The camera operator shall perform a 360-degree rotation around each service connection and a full center view down the centerline of the

lateral opening. The minimum time frame spent at each lateral location is 15 seconds. Additional time may be required for defective laterals. This is not a separate pay item.

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.

D. INSPECTION LOGS AND VIDEOTAPES:

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, pipe diameter, pipe material, defects and defect ratings. 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 discernible features will be recorded and a copy of such records in both hard copy and digital format will be supplied to the Engineer on a weekly basis. 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 tape recording shall be to supply a visual and audio record of problem areas of the lines that may be replayed. Videotape recording playback shall be at the same speed that it was recorded. Slow motion or stop-motion playback features may be supplied at the option of the Contractor. Videotapes shall be considered property of the Owner and the Contractor shall possess backup copies of all videotapes until completion of the Contract.

24.3 FINAL ACCEPTANCE:

Acceptance of this portion of work shall be made upon the successful review of the VHS tapes submitted to the LFUCG. If the tapes 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 tape of the line at no additional cost. If a suitable tape 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.

A. MISCELLANEOUS:

No later than each Thursday morning, the Contractor's Project Coordinator shall provide the Engineer with a tentative weekly schedule, and shall also provide daily notification of those areas to be investigated.

B. BASIS OF PAYMENT:

The television survey shall be at the Contractor's expense and is incidental to the installation of the pipe.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

PART 1 - GENERAL

1.01 GENERAL

- A. The Contract Documents include a SWPPP that has been approved by LFUCG Division of Water Quality. This SWPPP shall be used for establishing quantities and a lump sum price for providing the Erosion and Sediment Control Measures.
- B. The Contractor may use this SWPPP to obtain the required permits, i.e. Land Disturbance Permit. If Contractor chooses to use this SWPPP, the Contractor takes sole responsibility for the content of the SWPPP and the implementation of the SWPPP during construction.
- C. Contractor may also choose to prepare its own SWPPP and submit to LFUCG Division of Water Quality for approval. No additional payment will be allowed for the Erosion and Sediment Control and conformance with SWPPP pay item.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

**STORMWATER POLLUTION
PREVENTION PLAN
for
CONSTRUCTION ACTIVITIES
for
MEADOWS – NORTHLAND – ARLINGTON PHASE 6A-1
SITE PUBLIC IMPROVEMENTS LEXINGTON, KENTUCKY 40505**

Prepared for:

CONTRACTOR

CONTRACTOR ADDRESS

LEXINGTON, KY 40505

Prepared by:

Integrated Engineering, PLLC

166 Prosperous Place

Suite 220

Lexington, KY 40509

Phone: 859-368-0145

Fax: 859-904-1538

December 2018

Table of Contents

A. Written Storm Water Pollution Prevention Plan

- Project Name and Location
- Operator's Name and Address
- Engineer's Name and Address
- Contractor's name and Address
- Project Start and End Dates
- Project Description
- Site Area and Disturbed Acreage
- Name of Receiving Waters
- Sequence of Major Activities
- Potential Sources of Pollutants
- Erosion and Sediment Controls
 - Stabilization Practices (Permanent)
 - Stabilization Practices (Temporary)
 - Structural Practices (Permanent)
 - Structural Practices (Temporary)
- Site Runoff Management
- Other Controls
- Compliance with Federal, State, and Local Regulations
- Inspection and Maintenance Procedures
- Inspection and Maintenance Report Forms
- Control of Non-Storm Water Discharges
- Materials Management Plan
 - Materials Covered
 - Material Management Practices
 - Spill Prevention and Response Procedures

B. Site Map

C. Approved Erosion and Sedimentation Control Plan and Details

D. Signed Commonwealth of Kentucky KPDES Notice of Intent (NOI) and Correspondence with USACE Regarding 404 Permit

E. Confirmation of NOI Delivery

F. Copy of Letter (or other documentation) from the NOI Processing Center Authorizing Permit Coverage

PROJECT NAME AND LOCATION

Edgelawn Avenue Public Improvement of Roadway, Sidewalk and Storm Sewers
Edgelawn Avenue
Lexington, Fayette County, Kentucky

A general location map (i.e. USGS quadrangle map) with enough detail to identify the location of the construction site, direction of storm water flow, the receiving waters of the site, location of off-site material, waste, borrow, and equipment storage areas, surface waters and wetlands, storm water discharge locations and other areas as required by the Commonwealth of Kentucky is included in Tab B.

OPERATOR’S NAME AND ADDRESS

Lexington-Fayette Urban County Government
Division of Water Quality
125 Lisle Industrial
Lexington, Kentucky 40511
(859) 425-2400

ENGINEER’S NAME AND ADDRESS

Integrated Engineering, PLLC
Eddie Mesta, PE
166 Prosperous Place, Suite 220
Lexington, Kentucky 40509
(859) 368-0145
eddie@int-engineering.com

CONTRACTOR’S NAME AND ADDRESS

Name:
Contact:
Address:
Phone:
Email:

PROJECT START AND END DATES

Start: February 2019
End: October 2019

ADDITIONAL INFORMATION

The Contract Documents include a SWPPP that has been approved by LFUCG Division of Water Quality. This SWPPP shall be used for establishing quantities and a lump sum price for providing the Erosion and Sediment Control Measures.

The Contractor may use this SWPPP to obtain the required permits, i.e. Land Disturbance Permit. If Contractor chooses to use this SWPPP, the Contractor takes sole responsibility for the content of the SWPPP and the implementation of the SWPPP during construction.

Contractor may also choose to prepare its own SWPPP and submit to Kentucky American Water for approval. No additional payment will be allowed for the Erosion and Sediment Control and conformance with SWPPP pay item.

PROJECT DESCRIPTION

This project will consist of construction activities related to the replacement and upgrading the pavement, storm sewers, sidewalks, and curb and gutter of approximately 860 linear feet of Edgelawn Avenue. The project will be entirely located within the public Right-Of-Ways of Edgelawn Avenue and Guthrie Alley. The improvements will start at the intersection of Edgelawn Avenue and Blue Grass Avenue and proceed for the entire length of Edgelawn Avenue. Pavement will be replaced, and curb and gutter will be added to both sides of the street. Guthrie Alley pavement will be milled and replaced. New sidewalk and concrete entrance aprons for each residence will be installed in addition to ten linear feet of driveway past the sidewalk towards the residences and businesses. The geographic central location of the job is 38°3'35" North 84°28'09" West. The purpose of this project is to replace and upgrade storm sewer pipe, structures and drains as well as portions of sanitary sewer pipe and structures. Storm sewer upgrades will consist of inlet structures either being added or replaced on Edgelawn. All soil that is removed from trenching activities that is deemed unsuitable material for use as fill material will be removed from the site and not allowed to erode on site. All soil that is removed from trenching activities that is deemed suitable for re-using for fill shall be properly stored on site and protected from eroding into streams and sewers.

SITE AREA AND DISTURBED ACREAGE

The project corridor spans an area consisting of an 80-foot width area along Edgelawn Avenue. This area allows for a sufficient area for storm and sanitary sewer installation as well as new sidewalk installation. The disturbed area will also include a 65-linear foot section that is aligned into a detention area owned by LFUCG for new storm sewer and headwall installation. The disturbed area approximates 1.7 acres.

SEQUENCE OF MAJOR ACTIVITIES

The Contractor will be responsible for implementing the following erosion control and storm water management control measures. The Contractor may designate these tasks to certain subcontractors as he sees fit, but the ultimate responsibility for implementing these controls and ensuring their proper functioning remains with the Contractor. The order of activities will be as follows (*refer to the Erosion Control Details, page 15, contained in this SWPPP for details*):

Erosion Control /Construction Phasing

- A. Attend a pre-construction meeting with Owner and Engineer prior to any street disturbance. Contractor shall sign Form A within the SWPPP prior to any street disturbance. A notice of intent shall be issued by the Kentucky Division of Water for a KPDES KYR10 Permit prior to land disturbance.
- B. Place inlet protection (as needed) at designated areas shown on the Construction Drawings and where deemed necessary by the resident project representative prior to construction commencing.
- C. Begin pavement removal.
- D. As the pavement is removed, spoil materials to be loaded into trucks for removal from site.
- E. Begin trench excavation.
- F. As the trench is excavated, spoil materials to be loaded into trucks for removal from site.
- G. Trench to be refilled with rock once pipe replacement is complete.
- H. File Notice of Termination for KPDES KYR10 with the Kentucky Division of Water once stabilization is complete.

NAME OF RECEIVING WATERS

The project will drain into storm sewers that will feed into what is eventually Cane Run Creek. The areas to be disturbed enter the waterbody via sheet flow and concentrated flow. Temporary inlet protection measures will be installed to control sediment runoff into the tributary. The outfalls discharge within the MS4 boundary of LFUCG.

POTENTIAL SOURCES OF POLLUTANTS

Potential sources of pollutants include sediment from pipe installation, oil/fuel/grease from equipment, and trash/debris.

EROSION AND SEDIMENT CONTROLS

All Erosion and Sediment Control details shall be referenced from Section 17 – Erosion and Sediment Control of the Technical Specifications and includes the SWPPP technical requirements and specifications.

Stabilization Practices (Permanent)

- A. Land clearing activities shall be done only in areas where removal, demolition, replacement, or installation will be performed and shall be staged to occur as the as the project progresses.
- B. Restoration of all areas to the prior conditions.
- C. Permanent seeding and mulching of exposed areas as specified on the Construction Drawings.
- D. Vegetation preservation outside the permanent easement.

Stabilization Practices (Temporary)

None

Structural Practices (Permanent)

No permanent structural practices will be installed for this project.

Structural Practices (Temporary)

Structural practices for this site include:

Inlet protection

SITE RUNOFF MANAGEMENT

Sediment will be prevented from leaving the street to the maximum extent practicable. Storm water will be treated using the above described best management practices. Inlet protection shall be installed in accordance with the Construction Drawings. No detention shall be provided due to the nature of the construction.

OTHER CONTROLS

Off-Site Vehicle Tracking

The streets adjacent to the project corridor will be inspected daily and swept as necessary to remove any excess mud, dirt, or rock tracked from trenching activities. Dump trucks hauling material from the construction site will be covered with a tarpaulin. The job site superintendent will be responsible for seeing that these procedures are followed.

Excavation Spoil Materials

Excavation spoil materials are generated during the excavation of the trench. These materials will be loaded into dump trucks and removed from the site. A copy of the receiving site's permit must be included in this SWPPP for spoil materials transported off site.

COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS

The Contractor will obtain copies of any and all local and state regulations which are applicable to storm water management, erosion control, and pollution minimization at this job site and will comply fully with such regulations. The Contractor will submit written evidence of such compliance if requested by the Operator or any agent of a regulatory body. The Contractor will comply with all conditions of the KPDES Construction General Permit, including the conditions related to maintaining the SWPPP and evidence of compliance with the SWPPP at the job site and allowing regulatory personnel access to the job site and to records in order to determine compliance. The selected contractor will be required to submit the Notice of Intent (NOI) to the Kentucky Division of Water (KDOW) prior to construction. The Contractor shall meet all conditions required by the MS4 Operator.

INSPECTION AND MAINTENANCE PROCEDURES

The following inspection and maintenance practices will be used to maintain erosion and sediment controls and stabilization measures.

1. All control measures will be inspected at least every seven (7) calendar days or every 14 days and within 24 hours following a rainfall event of 0.5 inches or greater as specified in this document.
2. All measures will be maintained in good working order; if repairs or other measures are found to be necessary, they will be initiated within 24 hours of report.
3. Built up sediment will be removed from the inlet protection when it reaches one-third the height of the protection. Inspections will be made of the inlet protection measures to ensure that they are in good working order.
4. A maintenance inspection report will be made after each inspection. Copies of the report forms to be completed by the inspector are included in this SWPPP.
5. The job site superintendent will be responsible for selecting and training the individuals who will be responsible for these inspections, maintenance, and repair activities, and filling out inspection reports.
6. Personnel selected for the inspection and maintenance responsibilities will receive training from the job site superintendent. They will be trained in all the inspection and maintenance practices necessary for keeping the sediment controls that are used onsite in good working order. They will also be trained in the completion of, initiation of actions required by, and the filing of the inspection forms. Documentation of this personnel training will be kept onsite with the SWPPP.
7. Disturbed areas will be inspected for evidence of or potential-for pollutants entering stormwater systems.
8. Report to Kentucky Department of Environmental Protection within 24 hours any noncompliance with the SWPPP that will endanger public health or the environment. Follow up with a written report within 5 days of the noncompliance event. The following events require 24-hour reporting: a) any unanticipated bypass which exceeds any effluent limitation in the permit, b) any upset which exceeds any effluent limitation in the permit, and c) a violation of a maximum daily discharge limitation for any of the pollutants listed by the EPA in the permit to be reported within 24 hours. The written submission must contain a description of the noncompliance and its cause; the period of the noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
9. Releases of hazardous substances or oil in excess of reportable quantities (as established under 40 CFR 110, 40 CFR 117, or 40 CFR 302) must be reported. Form G-1 provides further details on the notification and reporting process.

INSPECTION AND MAINTENANCE REPORT FORMS

Once installation of any required or optional erosion control device or measure has been implemented, at least once every seven (7) calendar days or at least once every fourteen (14) days and within 24 hours following a rainfall event of 0.5 inches or greater as specified in KYR10. Inspections for this project shall occur at least once every seven (7) calendar days. If the specified schedule for inspections is changed, a modification report shall be filed. The Modification Reports can be found in this SWPPP. Inspections of each measure shall be performed by a Qualified Inspector. Inspectors shall have training in stormwater construction management such as KEPSC, CEPSC, CPSWQ, TNEPSC, CESSWI, or other similar training. Inspectors to inventory and report the condition of each measure and insure sediment control measures are in good working order, shall use the forms found in this SWPPP.

These report forms shall become an integral part of the SWPPP and shall be made readily accessible to governmental inspection officials, the Operator's Engineer, and the Operator for review upon request during visits to the project site. In addition, copies of the reports shall be provided to any of these persons, upon request, via mail or facsimile transmission. Inspection and maintenance report forms are to be maintained by the permittee for five years following the stabilization of the site.

CONTROL OF NON-STORM WATER DISCHARGES

Certain types of discharges are allowable under the Kentucky Department of Environmental Protection General Permit for construction Activity, and it is the intent of this SWPPP to allow such discharges. These types of discharges will be allowed under the conditions that no pollutants will be allowed to come in contact with the water prior to or after its discharge. The contractor shall ensure that all non-storm water discharge is filtered and/or that sediment and silt from the construction is removed before water enters the receiving water body. The control measures that have been outlined previously in this SWPPP will be strictly enforced to ensure that no contamination of these non-storm water discharges takes place. The following non-storm water discharges are allowed by the Kentucky Department of Environmental Protection and may occur at the job site:

- Discharges from fire-fighting activities
- Fire hydrant flushing
- Waters used for vehicle washing where detergents are not used
- Water used for dust control
- Potable water including uncontaminated water-line flushing
- Routine external building wash down that does not use detergents
- Pavement wash waters where spills or leaks or toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used
- Landscape irrigation
- Clean, non-turbid water-well discharges of groundwater
- Construction dewatering provided the requirements of the KPDES permit are met

MATERIALS MANAGEMENT PLAN

MATERIALS COVERED

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

| | |
|---------------------------|-------------------------------|
| Concrete/Additives/Wastes | Cleaning Solvents |
| Detergents | Petroleum based products |
| Paints/Solvents | Acids |
| Sanitary Wastes | Solid and construction wastes |

MATERIAL MANAGEMENT PRACTICES

The following are in the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff. The job site superintendent will be responsible for ensuring that these procedures are followed.

A. Good Housekeeping

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

1. An effort will be made to store only enough products required to do the job
2. All materials stored onsite will be stored in a neat, orderly manner and, if possible, under a roof or in a containment area. At a minimum, all containers will be stored with their lids on when not in use. Drip pans shall be provided under all dispensers.
3. Products will be kept in their original containers with the original manufacturer's label in

legible condition.

4. Substances will not be mixed with one another unless recommended by the manufacturer.
5. Whenever possible, all of a product will be used up before disposing of the container.
6. Manufacturer's recommendations for proper use and disposal will be followed.
7. The job site superintendent will be responsible for daily inspections to ensure proper use and disposal of materials.

B. Hazardous Products

These practices will be used to reduce the risks associated with hazardous materials. Material Safety Data Sheets (MSDS's) for each substance with hazardous properties that is used on the job site will be obtained and used for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such product is stored and/or used and another copy of each MSDS will be maintained in the SWPPP file at the job site construction trailer office. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

1. Products will be kept in original containers with the original labels in legible condition.
2. Original labels and material safety data sheets (MSDS's) will be procured and used for each material.
3. If surplus product must be disposed of, manufacturer's or local/state/federal recommended methods for proper disposal will be followed.

C. Hazardous Waste

All hazardous waste materials will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. The job site superintendent, who will also be responsible for seeing that these practices are followed, will instruct site personnel in these practices.

D. Product Specific Practices

The following product specific practices will be followed on the job site.

1. Petroleum Products

All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers that are clearly labeled. **Any petroleum storage tanks stored onsite will be located within a containment area that is designed with an impervious surface between the tank and the ground. The secondary containment must be designed to provide a containment volume that is equal to 110% of the volume of the largest tank.** Drip pans shall be provided for all dispensers. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations. The location of any fuel tank(s) and/or equipment storage areas must be identified on the Construction Drawings, Sheets SA-1 through SA-15, by the contractor once the location(s) has been determined.

2. Paints, Paint Solvents, and Cleaning Solvents

All containers will be tightly sealed and stored when not in use. Excess paint and solvents will not be discharged to the storm sewer system but will be properly disposed of according to manufacturer's instructions or state and federal regulations.

E. Sanitary Wastes

All sanitary waste will be collected from the portable units a minimum of three times per week by a licensed portable facility provider in complete compliance with local and state regulations.

All sanitary waste units will be located in an area where the likelihood of the unit contributing to storm water discharges is negligible. If required, additional BMPs must be implemented, such as sandbags around the base, to prevent wastes from contributing to storm water discharges.

F. Contaminated Soils

Any contaminated soils (resulting from spills of materials with hazardous properties) that may result from construction activities will be contained and cleaned up immediately in accordance with the procedures given in the materials Management Plan and in accordance with applicable state and federal regulations.

Spill Prevention and Response Procedures

The Contractor will train all personnel in the proper handling and cleanup of spilled materials. No spilled hazardous materials or hazardous wastes will be allowed to come in contact with storm water discharges. If such contact occurs, the storm water discharge will be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated storm water. It shall be the responsibility of the job site superintendent to properly train all personnel in spill prevention and clean up procedures.

A. In order to minimize the potential for a spill of hazardous materials to come into contact with storm water, the following steps will be implemented:

1. All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, with their lids on, preferably under cover, when not in use.
2. The minimum practical quantity of all such materials will be kept on the job site.
3. A spill control and containment kit (containing, for example, absorbent materials, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.
4. Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be trained regarding these procedures and the location of the information and cleanup supplies.

B. In the event of a spill, the following procedures should be followed

1. All spills will be cleaned up immediately after discovery.
2. The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with the hazardous substances.

3. The project manager and the Engineer of Record will be notified immediately.

Spills of toxic or hazardous materials will be reported to the appropriate federal, state, and/or local government agency, regardless of the size of the spill. Spills of amounts that exceed Reportable Quantities of certain substances specifically mentioned in federal regulations (40 CFR 110, 40 CFR 117, and 40 CFR 302) must be immediately reported to the EPA National Response Center, telephone 1-800-424-8802 and the Kentucky Environmental Response team at 1-800-928-2380.

4. The job site superintendent will be the spill prevention and response coordinator. He will designate the individuals who will receive spill prevention and response training. These individuals will each become responsible for a particular phase of prevention and response. The names of these personnel will be posted in the material storage area and in the office trailer onsite.

SIGNED NOI TO BE PLACED HERE ONCE
COMPLETED BY THE CONTRACTOR

NOI DELIVERY CONFIRMATION TO BE PLACED HERE
ONCE COMPLETED BY THE CONTRACTOR

NOI PERMIT COVERAGE AUTHORIZATION
TO BE PLACED HERE ONCE
RECEIVED BY THE CONTRACTOR

TECHNICAL SPECIFICATIONS

APPENDIX A – STANDARD DRAWINGS

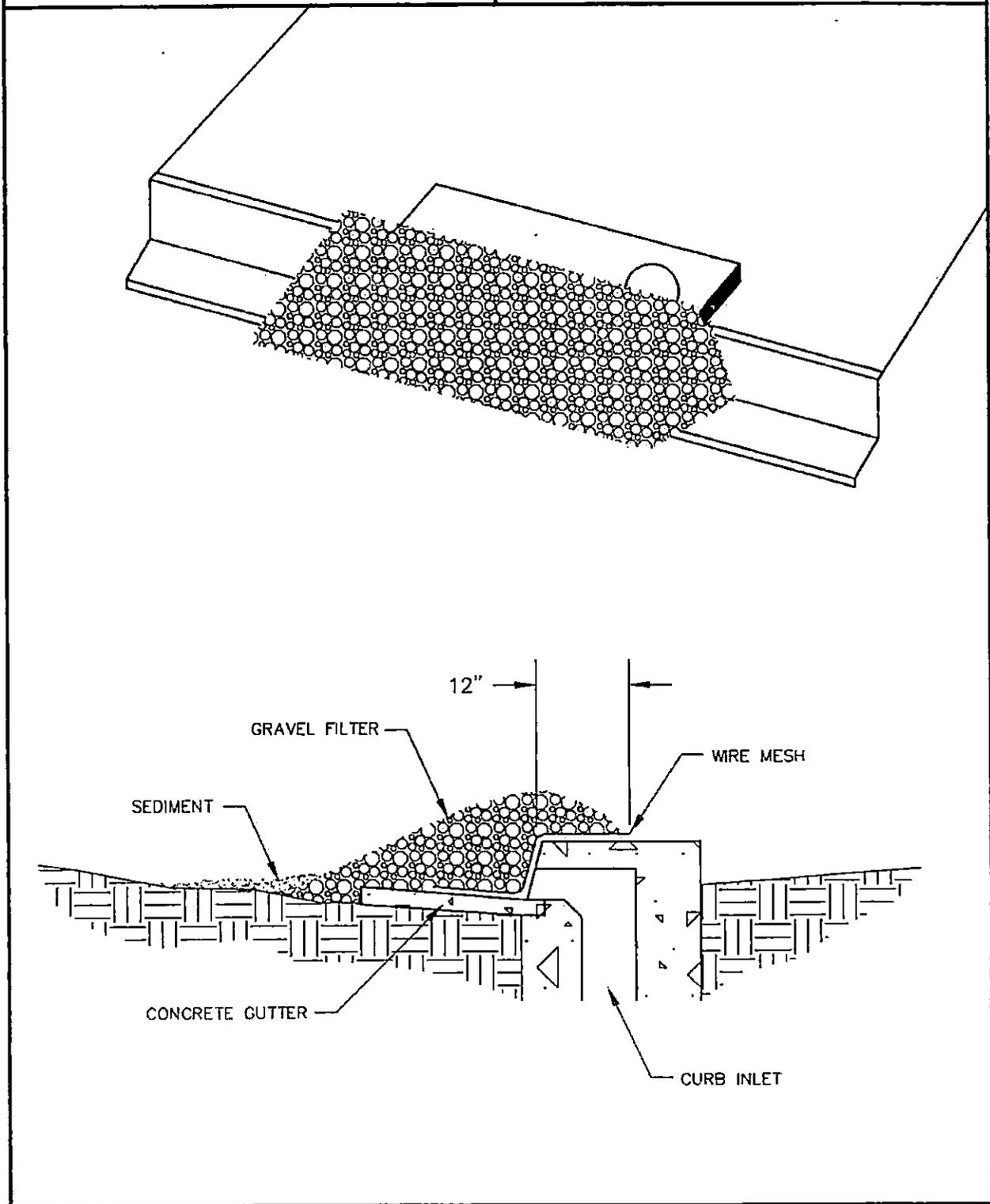


STORMWATER MANUAL

FIGURE 11-24

GRAVEL CURB INLET SEDIMENT FILTER

(EFFECTIVE DATE 8/29/11)

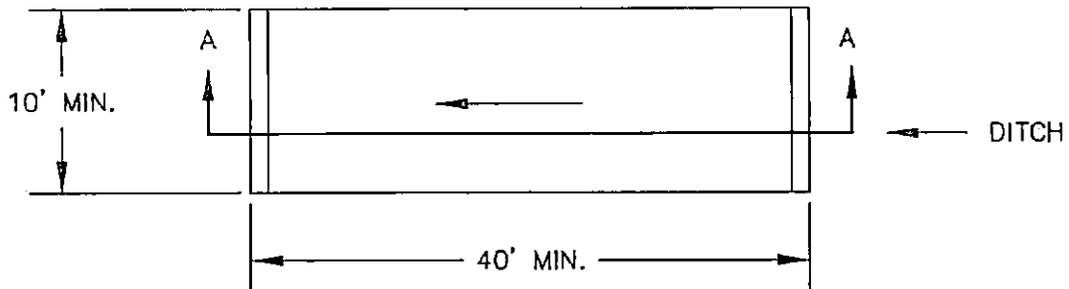




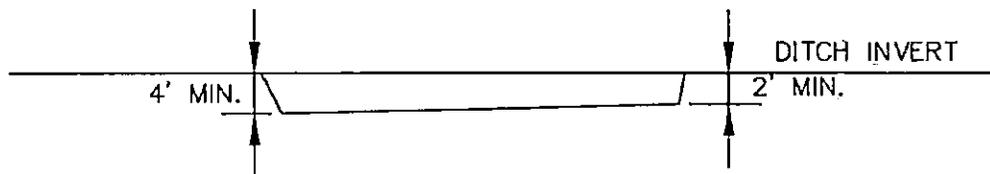
STORMWATER MANUAL

FIGURE 11-18
SEDIMENT TRAP

(EFFECTIVE DATE 8/29/11)



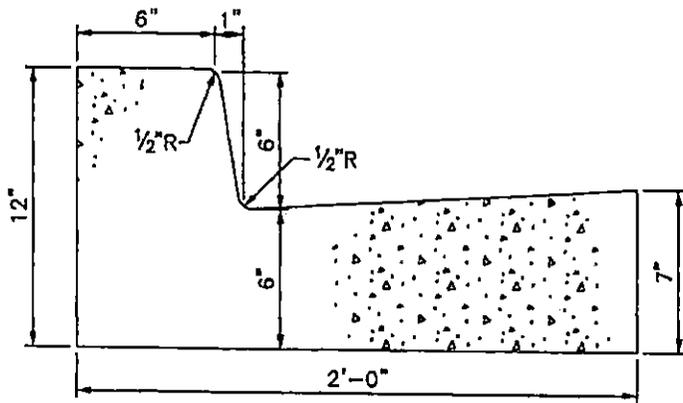
PLAN VIEW



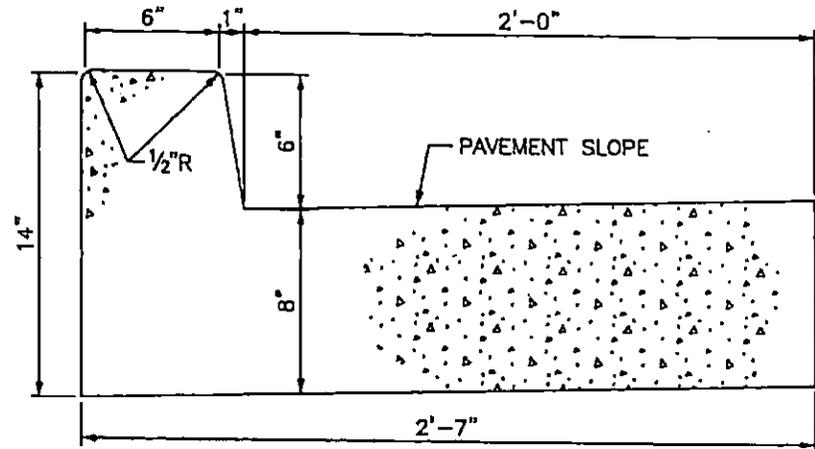
SECTION A-A

NOTES:

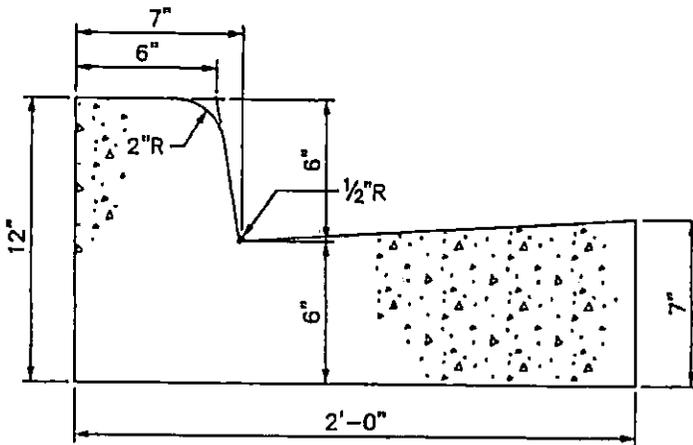
- 1) THE SIZE, SHAPE AND LOCATION OF TRAP MAY BE ADJUSTED FROM THAT SHOWN IN THE CONSTRUCTION PLANS, AS DIRECTED BY THE ENGINEER.
- 2) THE SEDIMENT TRAP MAY BE CONSTRUCTED AS DIRECTED BY THE ENGINEER AS LONG AS THE AREA AND DEPTH IS AT LEAST AS THAT INDICATED ON THE PLANS.
- 3) SEDIMENT TRAP SHALL BE 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.



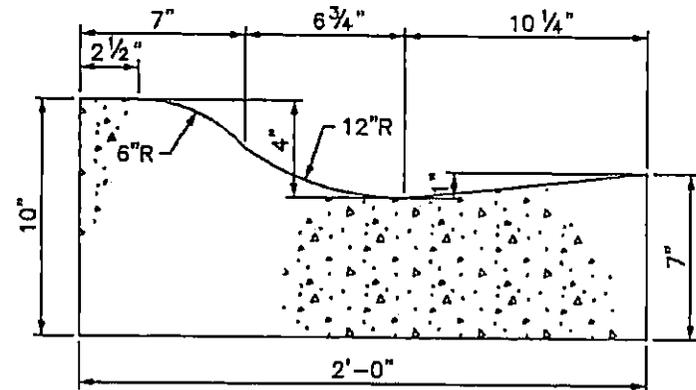
TYPE 1



TYPE 2



TYPE 3



TYPE 4

(RESIDENTIAL LOCAL STREETS ONLY)

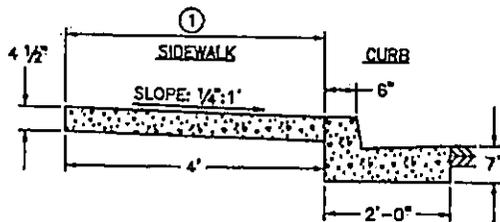
NOTES:

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.

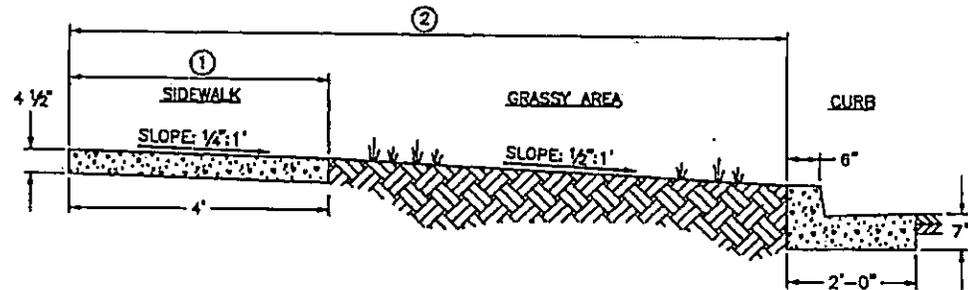
3. EXPANSION JOINTS SHALL BE CONSTRUCTED AT ALL BREAKS IN ALIGNMENT, AT CONTACT WITH NEW OR EXISTING CONCRETE, AT ALL DRAINAGE INLETS, AT THE BEGINNING AND ENDING POINTS OF CURVES, AND NOT TO EXCEED 200' MAXIMUM SPACING FOR SLIP FORM APPLICATION AND 30' MAXIMUM SPACING FOR HAND PLACED.

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 |
| APPROVED: <i>[Signature]</i> | | | sl/lap |
| LEXINGTON COUNTY ENGINEER | | | DATE |
| COMMISSIONER | | | |



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 1/2) 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 (1/4) OF AN INCH TO THE FOOT. CONSTRUCTION IN EXISTING NEIGHBORHOODS SHALL REQUIRE THE CONTRACTOR TO MATCH EXISTING GRADE AND SIDEWALK WIDTH UNLESS SPECIFIED OTHERWISE BY THE DIVISION OF ENGINEERING.

SHEET NOTES:

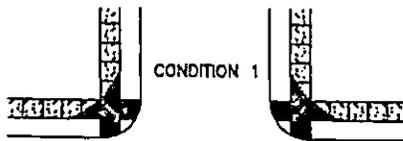
- ① NORMAL SIDEWALK WIDTH SHALL BE 4' UNLESS CHANGE IS AUTHORIZED BY URBAN COUNTY ENGINEER'S OFFICE.
- ② DISTANCE WILL VARY WITH ROAD CROSS-SECTION.

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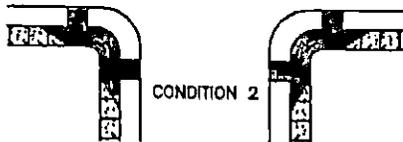
DIVISION OF ENGINEERING

SIDEWALK CONSTRUCTION
SPECIFICATIONS

| | |
|------------------------|--------|
| STANDARD DRAWING NO. | 303 |
| APPROVED | 5/1/08 |
| DESIGN COUNTY ENGINEER | DATE |
| COMMISSIONER | DATE |



CONDITION 1

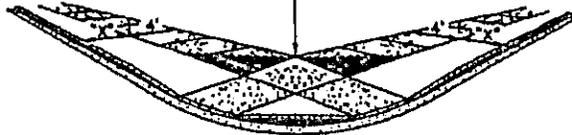


CONDITION 2

RAMP TYPE 1

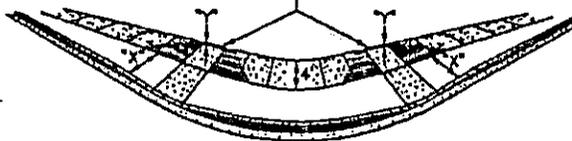
NORMAL TREATMENT FOR ARTERIALS AND SIGNALIZED INTERSECTIONS

DROP BACK OF SIDEWALK AS REQUIRED TO PROVIDE MAXIMUM 1":1' RAMP SLOPE. EXTEND RAMP WITHIN SIDEWALK AS REQUIRED. REFER TO CHART ON THIS SHEET.

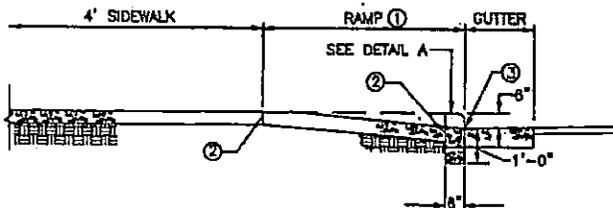


RAMP TYPE 1 CONDITION 1

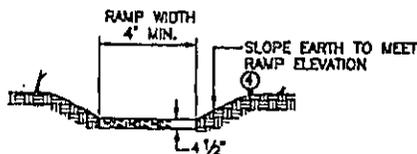
DROP BACK OF SIDEWALK AS REQUIRED TO PROVIDE MAXIMUM 1":1' RAMP SLOPE. EXTEND RAMP WITHIN SIDEWALK AS REQUIRED. REFER TO CHART ON THIS SHEET.



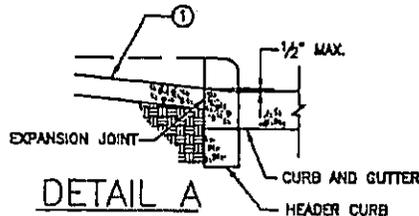
RAMP TYPE 1 CONDITION 2



PROFILE RAMP TYPE 1



CROSS SECTION RAMP TYPE 1



DETAIL A

NOTE:
FOR USE WITH 6" HEADER CURB OR 6" CURB AND GUTTER

| UTILITY STRIP WIDTH "X" | BACK OF 4' SIDEWALK DROP FROM NORMAL "Y" |
|----------------------------|--|
| ① 0 | ② 3" |
| 1 | 2 1/2" |
| 2 | 2" |
| 3 | 1 1/2" |
| 4 | 1" |
| 5 | 1/2" |
| ≥ 6 | 0 |

① 1/2":1' CROSS SLOPE ② 1/4":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® TRANSCO 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 1/2" 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.

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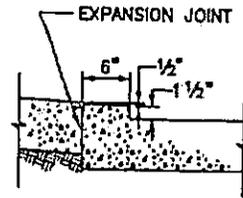
DIVISION OF ENGINEERING

SIDEWALK
RAMP TYPE 1

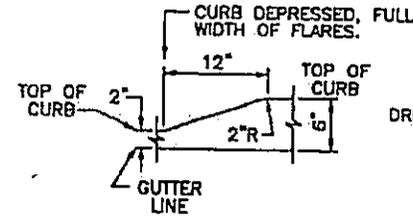
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| STANDARD DRAWING NO. | 304 |
| APPROVAL | 5/1/08 |
| DESIGN COUNTY ENGINEER | DATE |
| COMMISSIONER | DATE |

MAXIMUM ALLOWABLE APRON AND DRIVEWAY WIDTHS

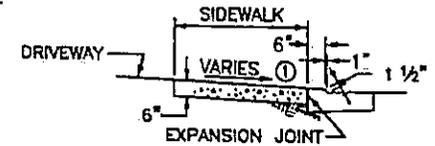
| CLASSIFICATION | DRIVEWAY | APRON |
|-----------------------------|----------|-------|
| SINGLE RESIDENTIAL | 12' | 18' |
| DOUBLE OR JOINT RESIDENTIAL | 20' | 28' |



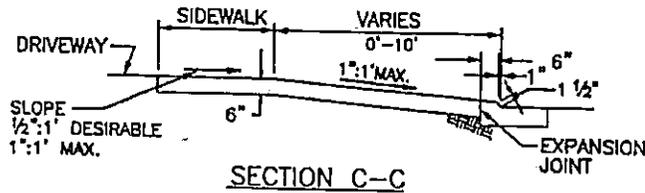
SECTION A-A



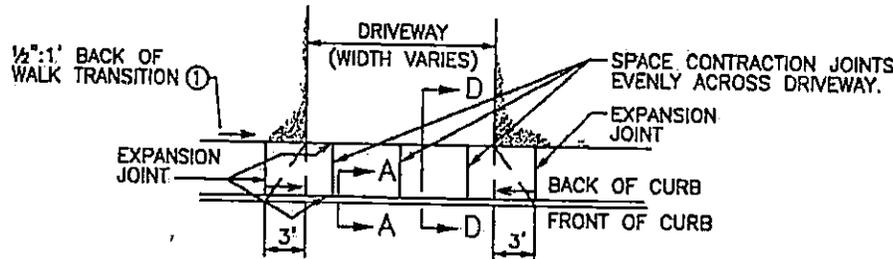
SECTION B-B



SECTION D-D



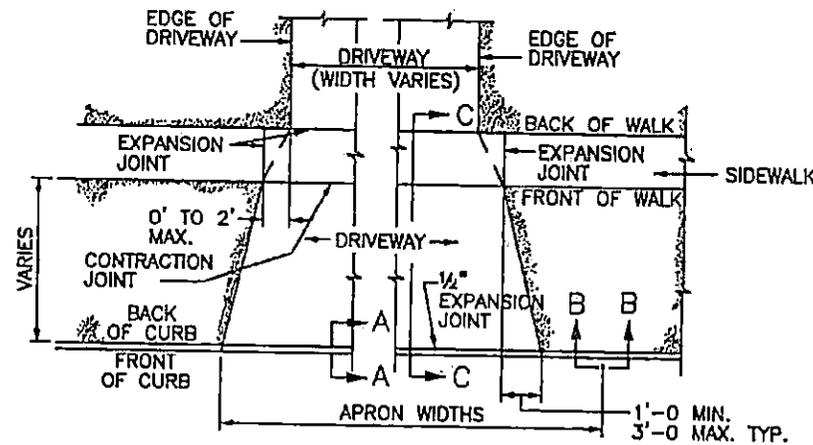
SECTION C-C



ENTRANCE WITHOUT UTILITY STRIP

STREET WITH PARKING LANE

STREET WITHOUT PARKING LANE



ENTRANCE WITH UTILITY STRIP

NOTES:

- ① DROP BACK OF SIDEWALK GRADE 1 1/2" OVER 3' TO PROVIDE A MAXIMUM SLOPE OF 1":1'.
- PROVIDE A SAWED JOINT ALONG CENTER LINE OF APRON.
- MAXIMUM DROP AT BACK OF SIDEWALK SHALL NOT EXCEED 1 1/2".
- MAXIMUM CROSS SLOPE ON SIDEWALK SHALL NOT EXCEED 1":1' (8.3%).
- MAXIMUM SLOPE ON APRON SHALL NOT EXCEED 1":1' (8.3%).
- ENTIRE APRON FROM BACK OF CURB TO BACK OF SIDEWALK SHALL BE CONSTRUCTED WITH A SINGLE POUR.

NOTE:
FOR USE WITH 6" HEADER CURB OR 6" CURB AND GUTTER

| UTILITY STRIP WIDTH | DROP BACK OF 4' SIDEWALK | SIDEWALK SLOPE | SLOPE ON APRON |
|---------------------|--------------------------|----------------|----------------|
| 0' | 1 1/2" | 7.29% | N/A |
| 2' | 1 1/2" | 5.21% | 8.33% |
| 4' | 1 1/2" | 3.12% | 8.33% |
| 5' | 1 1/2" | 2.08% | 8.33% |
| 6' | 1" | 2.08% | 8.33% |
| 8' | 0" | 2.08% | 8.33% |
| 10' | 0" | 2.08% | 7.50% |

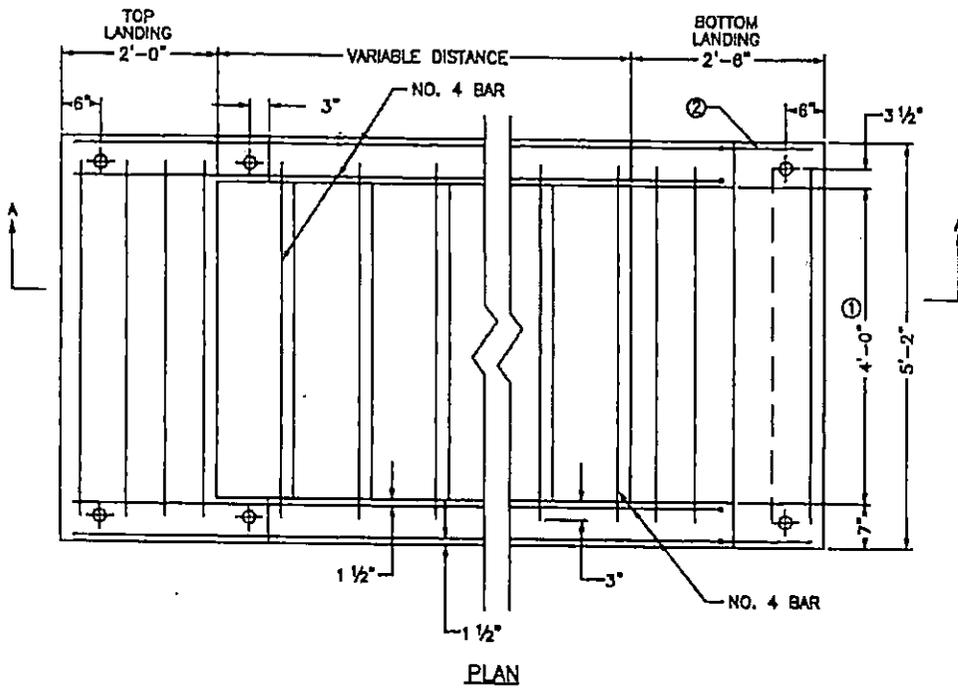
| UTILITY STRIP WIDTH | DROP BACK OF 4' SIDEWALK | SIDEWALK SLOPE | SLOPE ON APRON |
|---------------------|--------------------------|----------------|----------------|
| 0' | 1 1/2" | 7.29% | N/A |
| 2' | 1 1/2" | 4.17% | 8.33% |
| 3' | 1 1/2" | 2.60% | 8.33% |
| 4' | 1" | 2.08% | 8.33% |
| 6' | 0" | 2.08% | 7.64% |
| 8' | 0" | 2.08% | 8.25% |
| 10' | 0" | 2.08% | 5.42% |

| NO. | DATE | REVISION DESCRIPTION | BY |
|-----|------|----------------------|----|
| | | | |
| | | | |
| | | | |

DIVISION OF ENGINEERING

RESIDENTIAL ENTRANCE DETAILS

| | |
|------------------------|--------|
| STANDARD DRAWING NO. | 307 |
| APPROVAL | 5/1/02 |
| DESIGN COUNTY ENGINEER | DATE |
| COMMISSIONER | DATE |



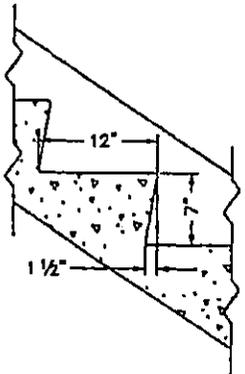
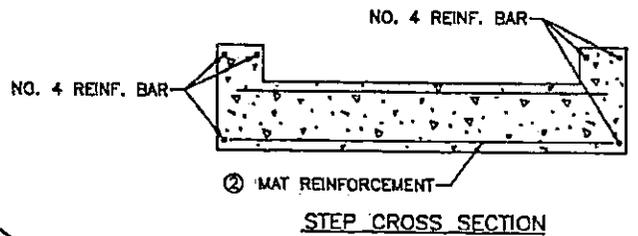
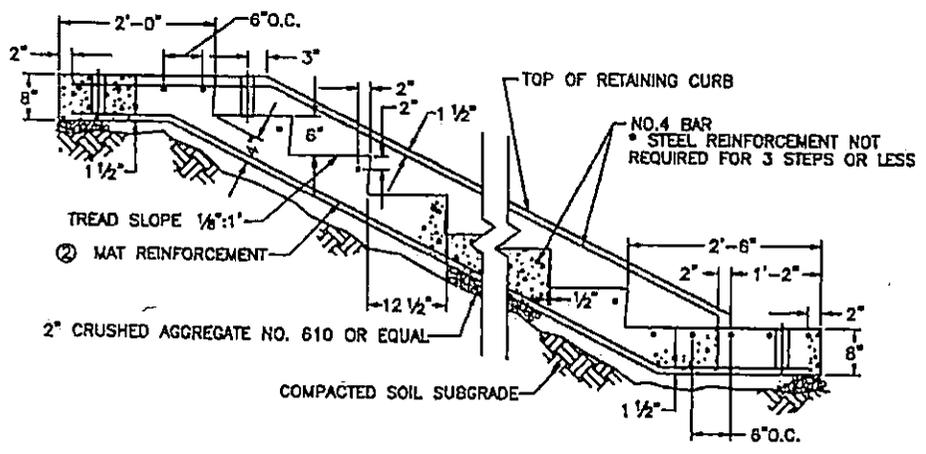
NOTES:

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 1/4" 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.

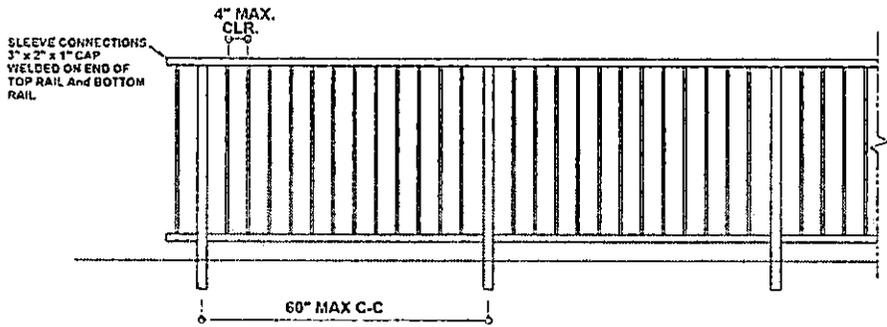
TABLE OF QUANTITIES

| SLOPE | LOCATION | ADDITIONAL NO. 4 BAR REINF. (LBS) | | MAT REINFORCEMENT | | | | CU. YDS. CLASS "A" CONCRETE | |
|---------|-------------------|-----------------------------------|-------|-----------------------|-------|---------------|-------|-----------------------------|-------|
| | | | | WIRE FABRIC (SQ. FT.) | | BAR MAT (LBS) | | | |
| | | 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 |
| 1 1/2:1 | BOTTOM LANDING | 23,603 | 3,340 | 12,602 | 2,542 | 28,613 | 5,400 | 0.38 | 0.082 |
| | INTERMEDIATE STEP | 7,431 | 1,336 | 5,288 | 1,083 | 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 |

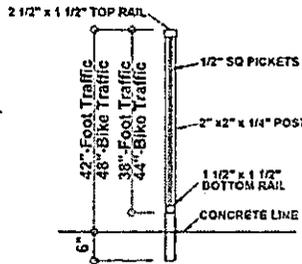
① APPROXIMATE QUANTITY TO ADD FOR EACH ADDITIONAL FOOT OF WIDTH OVER 4'-0".



| NO. | DATE | REVISION DESCRIPTION | BY |
|-------------------------|------|----------------------|--------|
| | | | |
| | | | |
| | | | |
| DIVISION OF ENGINEERING | | | |
| CONCRETE STEPS | | | |
| STANDARD DRAWING NO. | | | 315 |
| APPROVED | | | 5/1/08 |
| LEWIS GRUBBS ENGINEER | | | DATE |
| COMMISSIONER 7 | | | DATE |



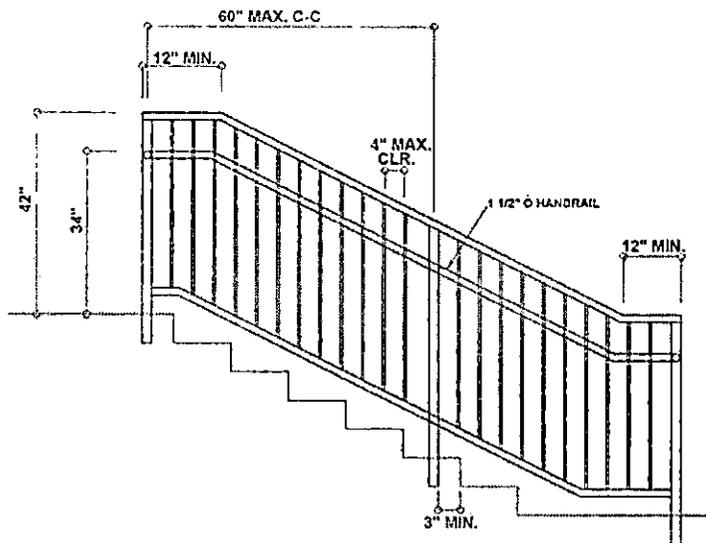
Top Rail For Retaining Walls



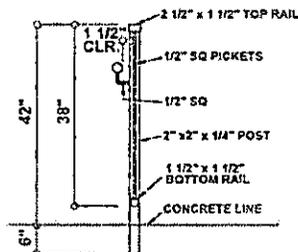
Section

NOTES:

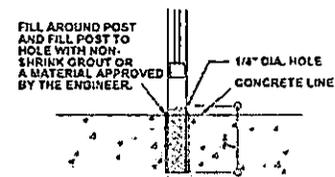
1. Handrails shall be DN 40 schedule 40 aluminum pipe in accordance with ASTM-B221 or B210 alloy 6061-T6.
2. Square bars shall be DN 40 schedule 40 aluminum in accordance with ASTM-B221 or B210 alloy 6061-T6.
3. All metal to be powder coated black in accordance with AAMA 2605.
4. Grout posts to concrete - see Post Setting Detail this sheet.
5. Anchor posts in cored or formed holes.
6. Aluminum surfaces, such as exposed ends, in contact with concrete, grout, or dissimilar metals shall be protected with a coat of bituminous paint.



Handrail For Steps



Section



Post Setting Detail

| | |
|-------|--|
| REV'S | |
| | |
| | |
| | |

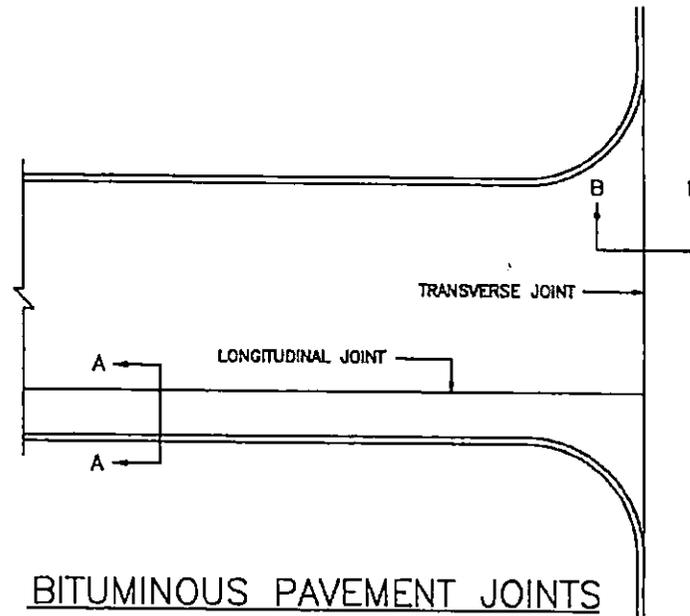
PLANS AND SPECIFICATIONS PREPARED BY:

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT
 DEPT. OF PLANNING, PRESERVATION, DEVELOPMENT
 DIVISION OF ENGINEERING

Top Rail for Retaining Walls
 Handrail for Steps
 Lexington, Fayette County, Kentucky

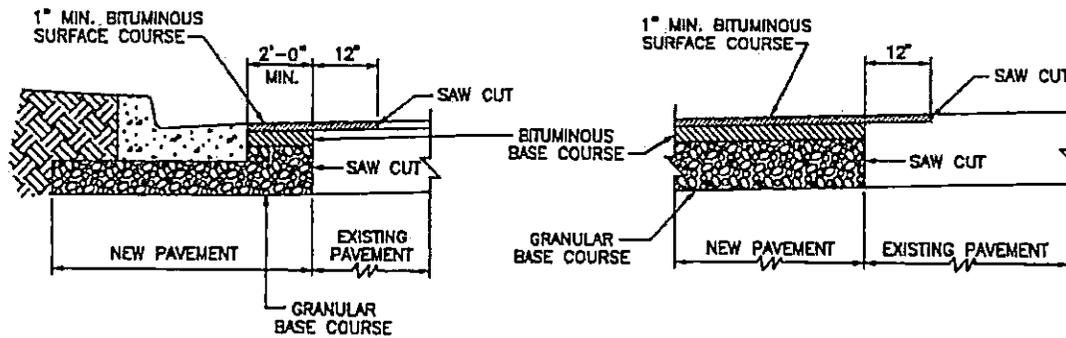
| | |
|------------------|--|
| SCALE: | |
| BD NO.: | |
| CHECKED BY: | |
| APPROVED BY: | |
| DRAWN BY: PW | |
| DATE: 08-12-2019 | |

| | |
|----------|--|
| DWG. NO. | |
| | |
| | |
| | |



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**

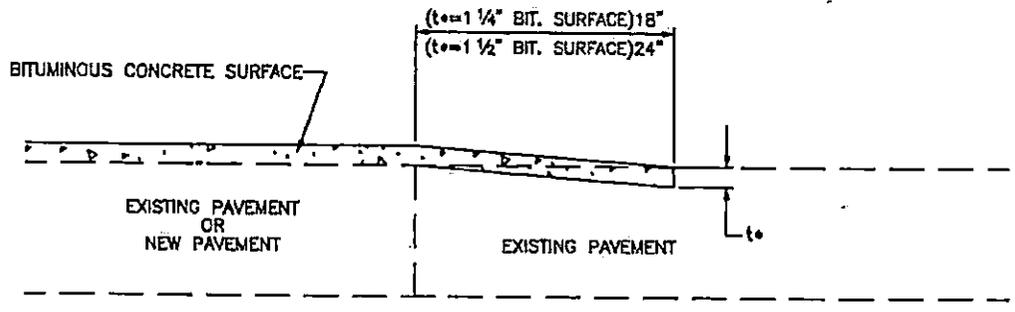
**SECTION B-B
TRANSVERSE EDGE KEY**

| NO. | DATE | REVISION DESCRIPTION | BY |
|-----|------|----------------------|----|
| | | | |
| | | | |
| | | | |

DIVISION OF ENGINEERING

EDGE KEY

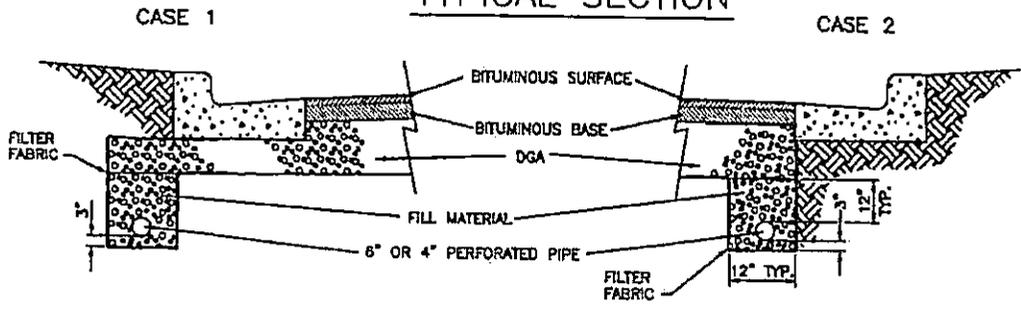
| | |
|----------------------|--------|
| STANDARD DRAWING NO. | 318 |
| APPROVED | 5/1/08 |
| DATE | |
| COMMISSIONER | |



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 <i>[Signature]</i> | | | DATE 5/1/08 |
| URBAN COUNTY ENGINEER <i>[Signature]</i> | | | DATE 5/1/08 |
| COMMISSIONER <i>[Signature]</i> | | | DATE |

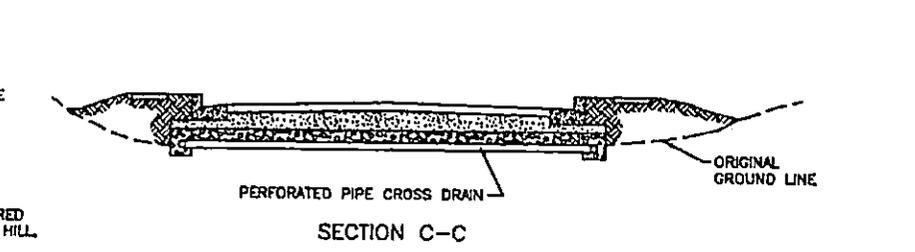
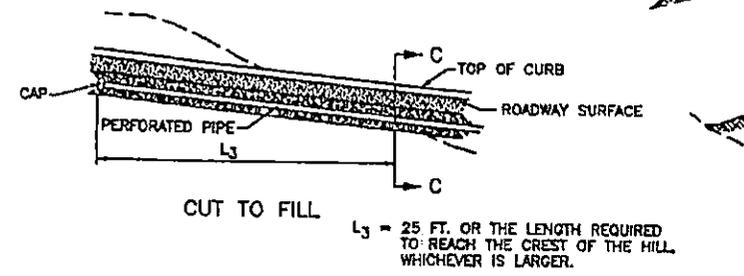
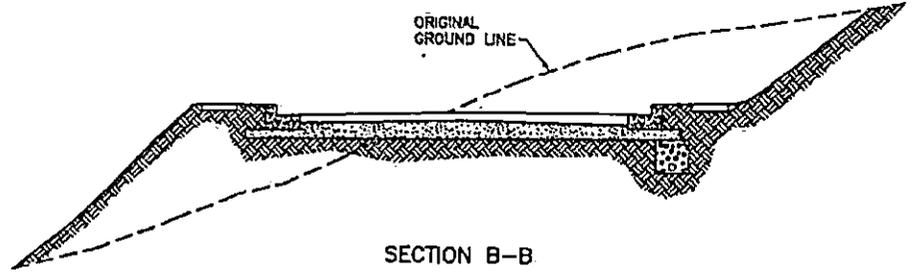
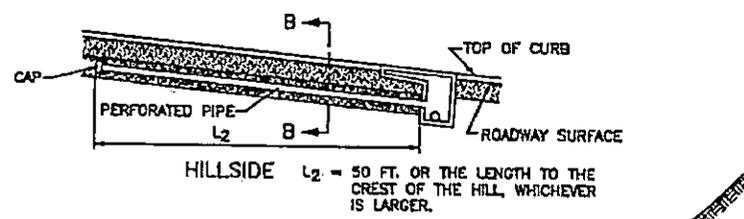
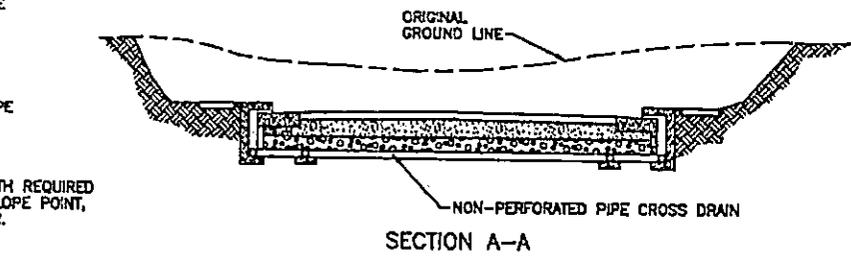
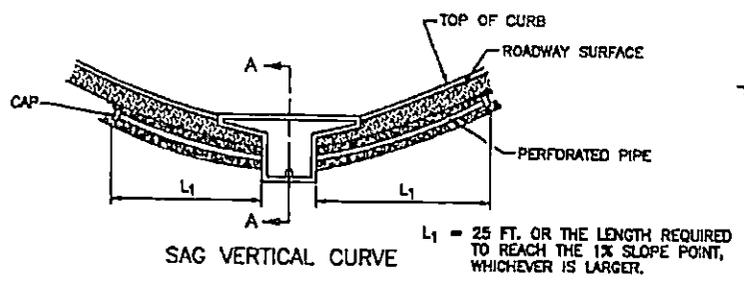
TYPICAL SECTION



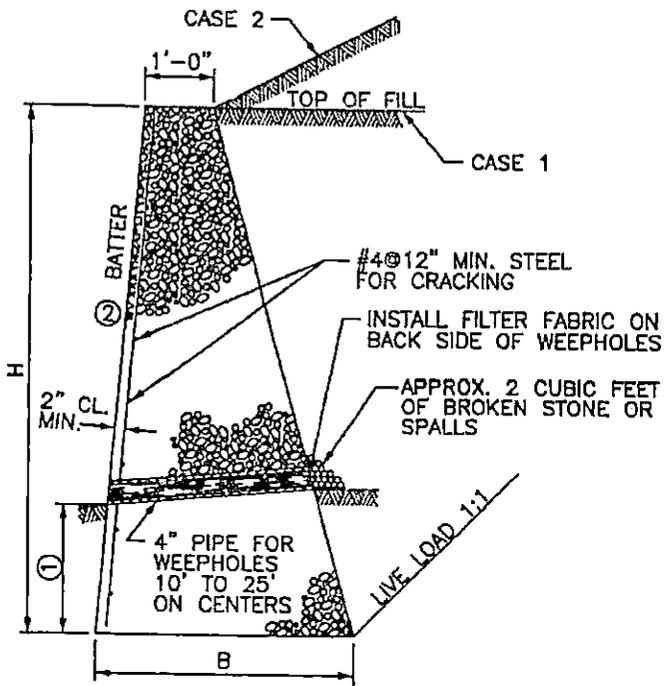
NOTES:

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 8 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.

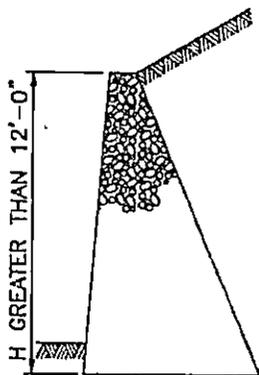
TYPICAL SUBGRADE DRAINAGE LOCATIONS



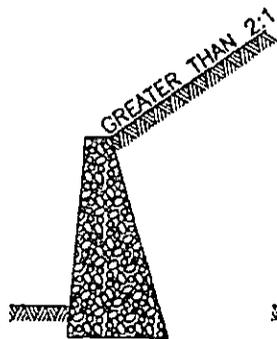
| NO. | DATE | REVISION DESCRIPTION | BY |
|--|------|----------------------|----|
| | | | |
| | | | |
| | | | |
| DIVISION OF ENGINEERING | | | |
| PERFORATED PIPE SUBGRADE DRAINAGE ALONG ROADWAY | | | |
| STANDARD DRAWING NO. | | 320 | |
| APPROVED | | 5/1/08 | |
| LEGAL COUNSEL REVIEW | | DATE | |
| COMMISSIONER | | DATE | |



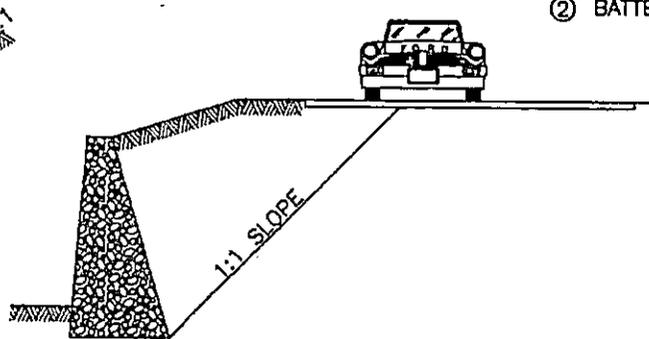
RETAINING WALL



(A)



(B)



(C)

SPECIAL DESIGNS REQUIRED

| H | B | END AREA SQ. FT. | VOLUME C.Y./L.F. |
|-------------|-------|------------------|------------------|
| CASE 1 OR 2 | | | |
| 2'-6" | 1'-3" | 2.8125 | 0.1042 |
| 3'-0" | 1'-6" | 3.7500 | 0.1389 |
| 3'-6" | 1'-9" | 4.8125 | 0.1782 |
| 4'-0" | 2'-0" | 6.0000 | 0.2222 |
| 4'-6" | 2'-3" | 7.3125 | 0.2708 |
| 5'-0" | 2'-6" | 8.7500 | 0.3241 |
| 5'-6" | 2'-9" | 10.3125 | 0.3819 |
| 6'-0" | 3'-0" | 12.0000 | 0.4444 |
| 6'-6" | 3'-3" | 13.8125 | 0.5116 |
| 7'-0" | 3'-6" | 15.7500 | 0.5833 |
| 7'-6" | 3'-9" | 17.8125 | 0.6597 |
| 8'-0" | 4'-0" | 20.0000 | 0.7407 |
| 8'-6" | 4'-3" | 22.3125 | 0.8264 |
| 9'-0" | 4'-6" | 24.7500 | 0.9167 |
| 9'-6" | 4'-9" | 27.3125 | 1.0116 |
| CASE 1 | | | |
| 10'-0" | 5'-0" | 30.0000 | 1.1111 |
| 10'-6" | 5'-3" | 32.8125 | 1.2153 |
| 11'-0" | 5'-6" | 35.7500 | 1.3241 |
| 11'-6" | 5'-9" | 38.8125 | 1.4375 |
| 12'-0" | 6'-0" | 42.0000 | 1.5556 |
| CASE 2 | | | |
| 10'-0" | 6'-0" | 35.0000 | 1.2963 |
| 10'-6" | 6'-3" | 38.0625 | 1.4097 |
| 11'-0" | 6'-6" | 41.2500 | 1.5278 |
| 11'-6" | 6'-9" | 44.5625 | 1.6505 |
| 12'-0" | 7'-0" | 48.0000 | 1.7778 |

NOTES:

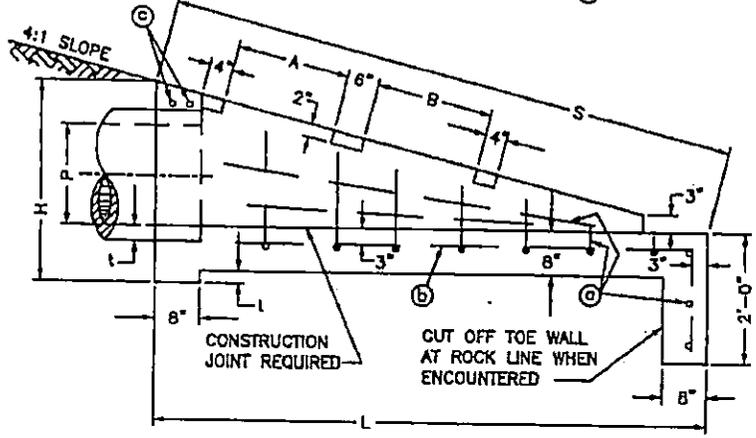
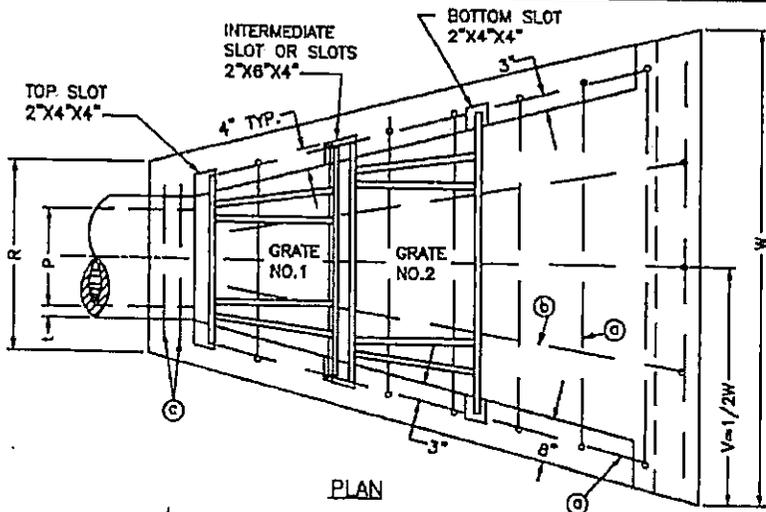
- THE RETAINING WALL DEPICTED ON THIS DRAWING SHALL BE USED WHEN THE HEIGHT ("H" DIMENSION) OF THE WALL IS 2'-6" TO 12'-0" PROVIDED THE FILL COMPLIES WITH THE FOLLOWING CONDITIONS:
CASE 1 - TOP OF FILL IS LEVEL WITH TOP OF WALL.
CASE 2 - WALL IS SURCHARGED WITH DEAD LOAD FILL SLOPES OF 2:1 OR LESS.
- AREAS AND VOLUMES HAVE BEEN COMPUTED WITHOUT DEDUCTING FOR BEVELED EDGES OR PIPE DRAINS. WHEN A RETAINING WALL VARIES IN HEIGHT, THE PRISMOIDAL FORMULA SHALL BE USED IN COMPUTING VOLUMES.
- GRAVITY TYPE RETAINING WALLS SHALL BE CONSTRUCTED OF CLASS "A" CONCRETE.
- TRANSVERSE EXPANSION JOINTS 1/2 INCH IN WIDTH SHALL BE PLACED AT INTERVALS OF NOT OVER 30 FEET THROUGHOUT THE LENGTH OF RETAINING WALLS AND EXPANSION JOINT MATERIAL SHALL BE PLACED THEREIN. ALL EXPOSED EDGES SHALL BE BEVELED 3/4 INCH. THE WALLS SHALL NOT BE SURCHARGED EXCEPT IN SPECIAL CASES WHEREIN SPECIAL DRAWINGS WILL BE FURNISHED.

SHEET NOTES:

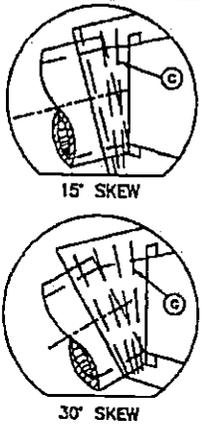
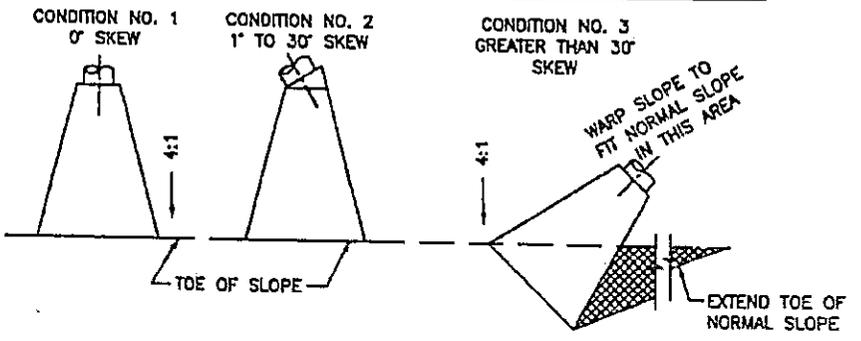
SPECIAL DESIGNS SHALL BE REQUIRED WHEN ANY ONE OF THE FOLLOWING CONDITIONS EXIST:

- WALL HEIGHT IS GREATER THAN 12'-0" (CASE 1 OR CASE 2 FILL).
- WALL IS SURCHARGED WITH DEAD LOAD FILL SLOPES GREATER THAN 2:1.
- WALL IS SURCHARGED WITH A LIVE LOAD WITHIN THE LIMITS OF A 1:1 SLOPE EXTENDING FROM THE BASE OF THE WALL.
- MINIMUM VALUE FOR FIRM SOIL IS 2'-0".
- BATTER: H=3'-0" TO LESS THAN 5'-0" (VERTICAL)
H=5'-0" TO LESS THAN 10'-0" (1":1)
H=10'-0" TO 12'-0" (2":1)

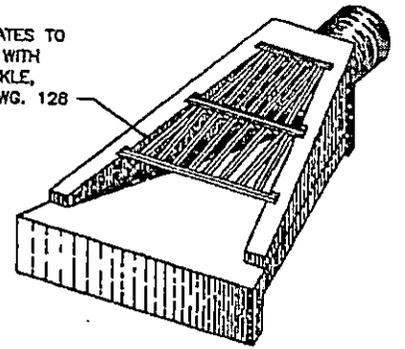
| NO. | DATE | REVISION DESCRIPTION | BY |
|--------------------------------|------|----------------------|--------|
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| | | | |
| DIVISION OF ENGINEERING | | | |
| RETAINING WALL GRAVITY TYPE | | | |
| STANDARD DRAWING NO. | | | 180 |
| APPROVED: <i>[Signature]</i> | | | 5/1/08 |
| DESIGNED: <i>[Signature]</i> | | | DATE |
| CHECKED: <i>[Signature]</i> | | | DATE |
| COMMISSIONER | | | |



PLAN VIEW OF STRUCTURE LOCATIONS



SECURE GRATES TO STRUCTURE WITH CHAIN SHACKLE, SEE STD. DWG. 128

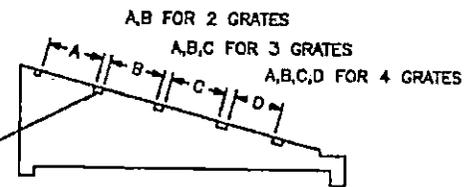


18"-24" TRIMETRIC VIEW

NOTES:

1. THE MINIMUM REQUIREMENT FOR REINFORCING STEEL SHALL BE GRADE 40. FIELD BENDING WILL BE PERMITTED.
2. ONE ADDITIONAL © BAR WILL BE REQUIRED FOR EACH 15° SKEW.
3. t IS CONCRETE PIPE WALL THICKNESS.

DETAIL SHOWING LOCATION OF SLOTS FOR GRATES



SECURE GRATES TO STRUCTURE WITH CHAIN SHACKLE, SEE STD. DWG. 128

SEE STD. DWG. 163 FOR GRATE DETAILS.

DIMENSIONS

| P | H | L | S | R | V | W | A | B | C | D |
|-----|-------|---------|------------|------------|-----------|--------|-------|-------|-------|-------|
| 18" | 3'-0" | 8'-6" | 8'-9 1/8" | 2'-11 1/2" | 3'-7 1/2" | 7'-3" | 1'-9" | 1'-9" | - | - |
| 24" | 3'-7" | 10'-8" | 11'-0" | 3'-6 1/2" | 4'-5 1/2" | 8'-11" | 2'-9" | 2'-9" | - | - |
| 30" | 4'-2" | 12'-10" | 13'-2 3/4" | 4'-1 1/2" | 5'-3 1/2" | 10'-7" | 2'-9" | 2'-9" | 1'-9" | - |
| 36" | 4'-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 | | | | LBS. | CLASS 'A' CONC. CU.YD. |
|--------------------------|-------------|-------------|---|------|------------------------|
| NUMBER-LENGTH AND WEIGHT | | | | | |
| ⓐ | ⓑ | ⓒ | ⓓ | | |
| 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'-8" | 2 AT 3'-10" | | 146 | 3.8 |
| 20 AT 11'-4" | 3 AT 15'-0" | 2 AT 4'-5" | | 187 | 5.1 |

| NO. | DATE | REVISION DESCRIPTION | BY |
|-----|------|----------------------|----|
| | | | |
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| | | | |

DIVISION OF ENGINEERING

SLOPED AND FLARED BOX INLET-OUTLET
18"-24"-30"-36"
ALL SKEWS

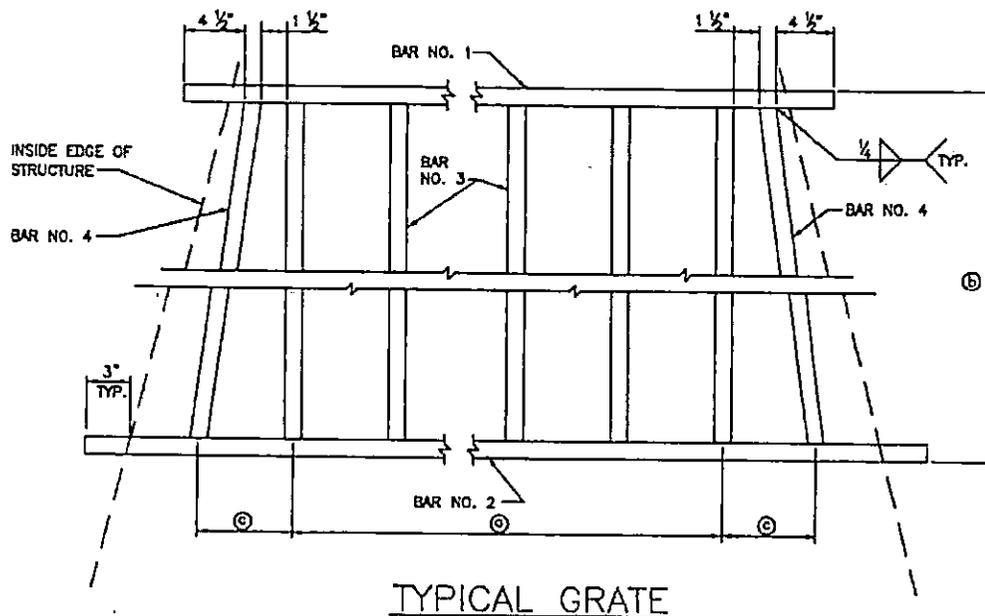
STANDARD DRAWING NO. 162

APPROVED: *[Signature]* 5/1/00

DESIGNED BY: *[Signature]* DATE: 5/1/00

CHECKED BY: *[Signature]* DATE: 5/1/00

| 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'-8 1/2" | 3'-5 7/8" | 4 | 1'-10" | 1'-10 1/4" | 116 | 272 |
| | 2 | 2'-0" | 3'-7 7/8" | 4'-6 7/8" | 6 | 1'-10" | 1'-10 1/4" | 158 | |
| 24" | 1 | 3'-0" | 3'-1 1/2" | 4'-6 3/8" | 5 | 2'-10" | 2'-10 3/8" | 187 | 454 |
| | 2 | 3'-0" | 4'-8 1/2" | 6'-1 5/8" | 8 | 2'-10" | 2'-10 3/8" | 267 | |
| 30" | 1 | 3'-0" | 3'-8 1/2" | 5'-1 1/2" | 6 | 2'-10" | 2'-10 3/8" | 215 | 798 |
| | 2 | 3'-0" | 5'-3 1/2" | 6'-8 3/8" | 9 | 2'-10" | 2'-10 3/8" | 294 | |
| | 3 | 2'-0" | 6'-10 1/2" | 7'-9 3/8" | 13 | 1'-10" | 1'-10 1/4" | 287 | |
| 36" | 1 | 3'-0" | 4'-3 1/2" | 5'-8 1/2" | 7 | 2'-10" | 2'-10 3/8" | 242 | 1218 |
| | 2 | 3'-0" | 5'-10 1/2" | 7'-3 3/8" | 10 | 2'-10" | 2'-10 3/8" | 321 | |
| | 3 | 2'-0" | 7'-5 1/2" | 8'-4 3/8" | 14 | 1'-10" | 1'-10 1/4" | 308 | |
| | 4 | 2'-0" | 8'-8 1/2" | 9'-5 3/8" | 18 | 1'-10" | 1'-10 1/4" | 347 | |



NOTES:

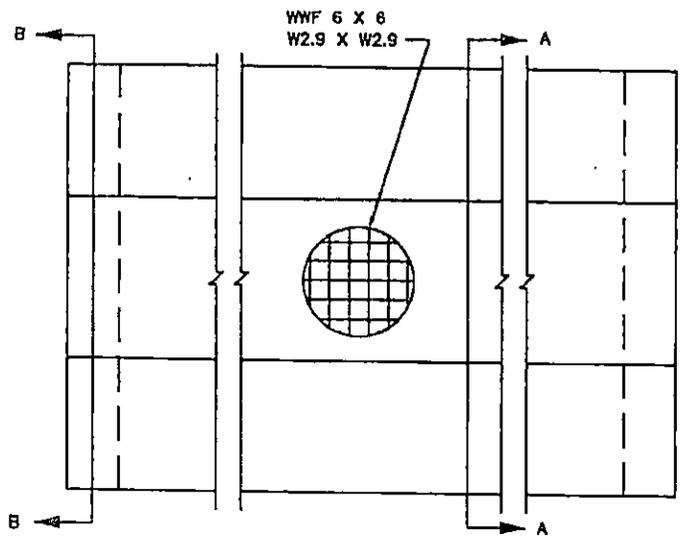
- Ⓐ EQUALLY SPACE BARS NO. 3.
 - Ⓑ SIZE OF GRATE EITHER 2'-0" OR 3'-0".
 - Ⓒ 5 1/2" FOR 2'-0" GRATE, 7" FOR 3'-0" GRATE.
1. ALL COMPONENTS ARE 1" x 2" STRUCTURAL STEEL BARS.
 2. SEE STD. DWG. 182.
 3. SECURE GRATE TO STRUCTURE WITH CHAIN SHACKLE, SEE STD. DWG. 12B.

| NO. | DATE | REVISION DESCRIPTION | BY |
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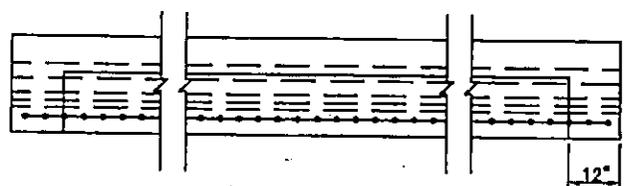
DIVISION OF ENGINEERING

GRATES FOR
SLOPED AND FLARED
BOX INLET-OUTLET

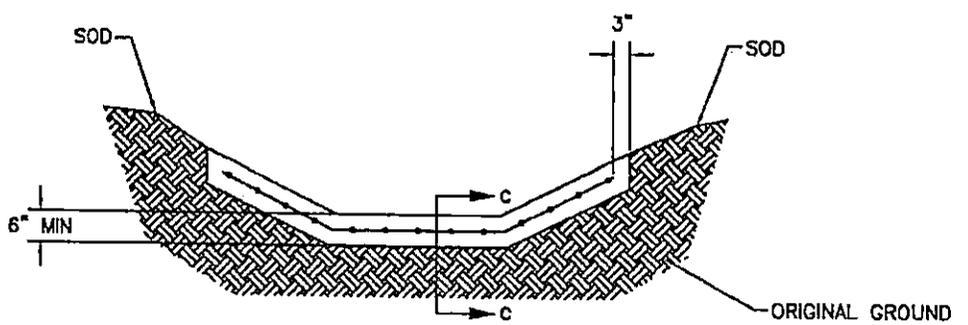
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|----------------------|--------|
| STANDARD DRAWING NO. | 163 |
| APPROVED | 5/1/07 |
| DATE | 5/1/07 |
| DATE | 5/1/07 |



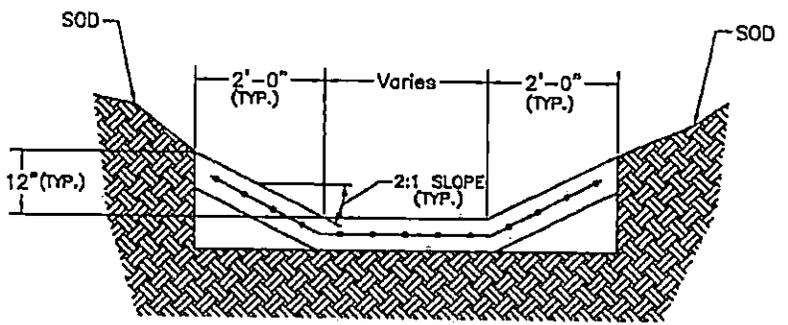
PLAN



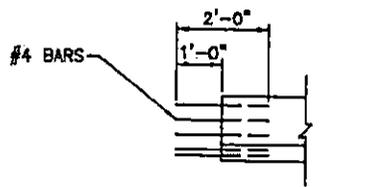
ELEVATION



SECTION A-A



SECTION B-B



SECTION C-C
(@ CONSTRUCTION JOINT)

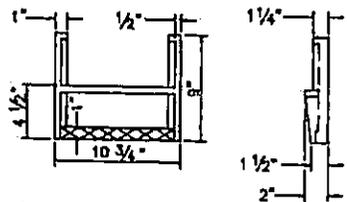
- NOTES:**
1. USE "CLASS A" CONCRETE THROUGHOUT.
 2. COMPACTION, FINISHING AND CURING SHALL BE THE SAME AS REQUIRED FOR CONCRETE SIDEWALK (USE WHITE COMPOUND).
 3. IF THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT IN THE POURING OF THE PAVED DITCH, NO. 4 TIE BARS SPACED 6" O.C. SHALL BE USED (SEE 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 |
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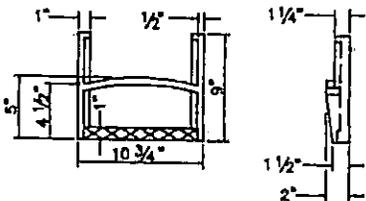
DIVISION OF ENGINEERING

PAVED DITCH

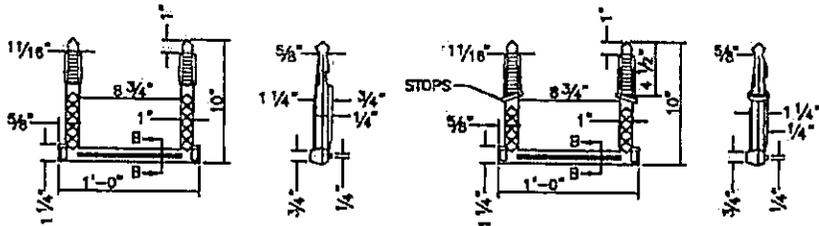
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|----------------------|-------------|
| STANDARD DRAWING NO. | 132 |
| APPROVED | DATE 5/1/08 |
| DESIGNED BY | DATE |
| CHECKED BY | DATE |
| COMMISSIONER | DATE |



STEP TYPE NO. 1



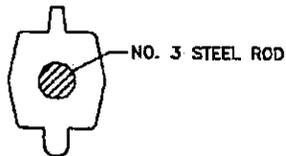
STEP TYPE NO. 2



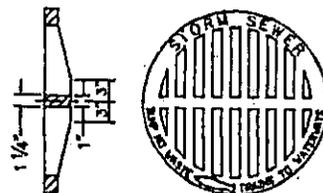
STEP TYPE NO. 3

STEP TYPE NO. 4

MANHOLE STEPS

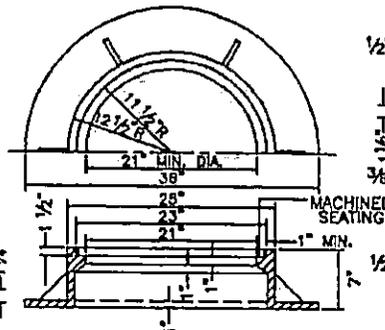


SECTION B-B

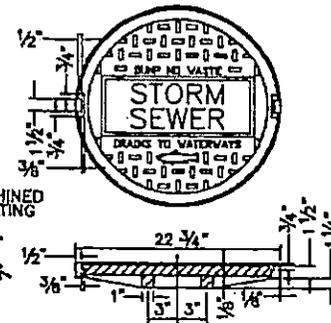


SECTION

GRATING COVER



FRAME



SOLID COVER

MANHOLE FRAME AND COVERS

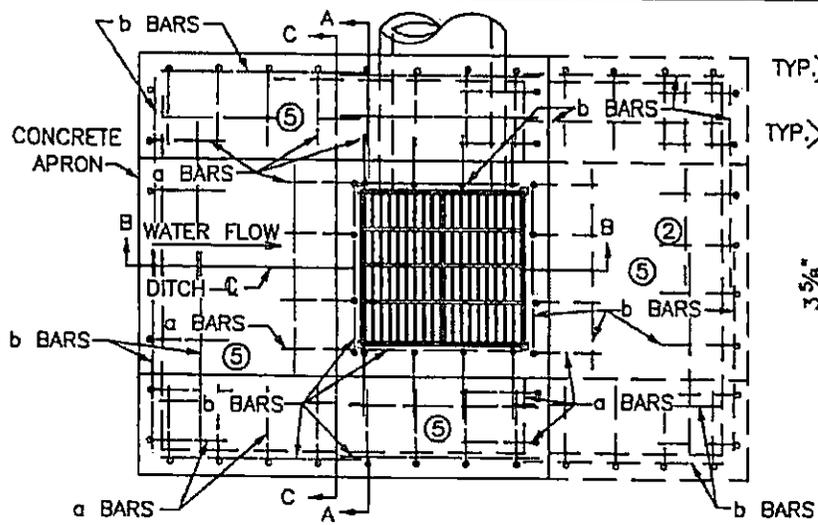
NOTES:

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.

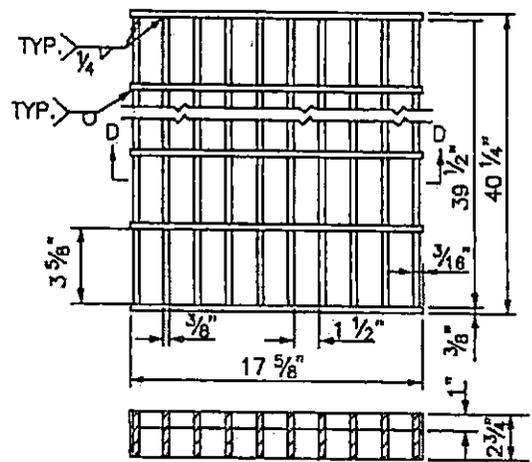
NOTES:

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 |
|------------------------------------|--------------------|----------------------|--------|
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| | | | |
| DIVISION OF ENGINEERING | | | |
| MANHOLE FRAMES, COVERS, & STEPS | | | |
| STANDARD DRAWING NO. | | 103 | |
| APPROVAL | <i>[Signature]</i> | DATE | 5/1/00 |
| DESIGNED | <i>[Signature]</i> | DATE | 5/1/00 |
| CHECKED | <i>[Signature]</i> | DATE | 5/1/00 |

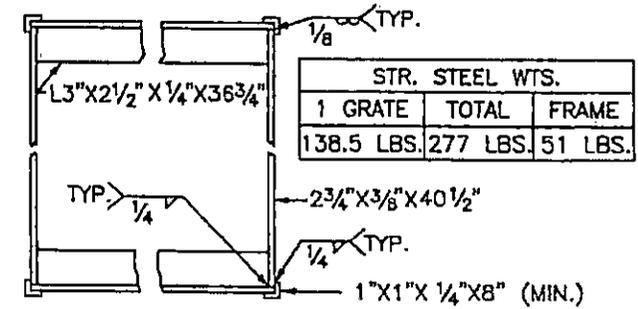


PLAN

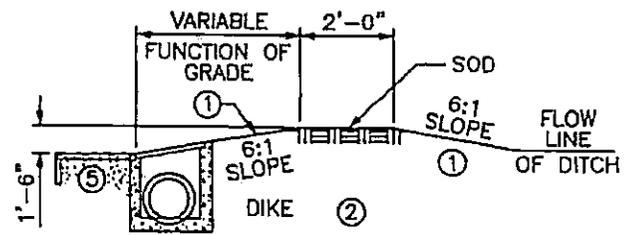


SECTION D-D

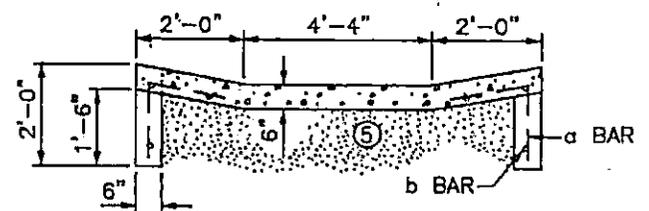
DETAIL OF GRATE (TWO REQUIRED)



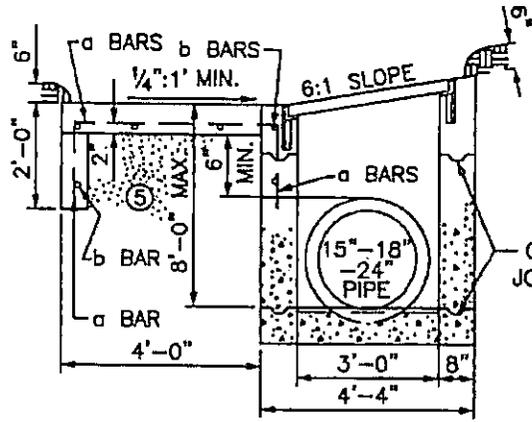
DETAIL OF FRAME



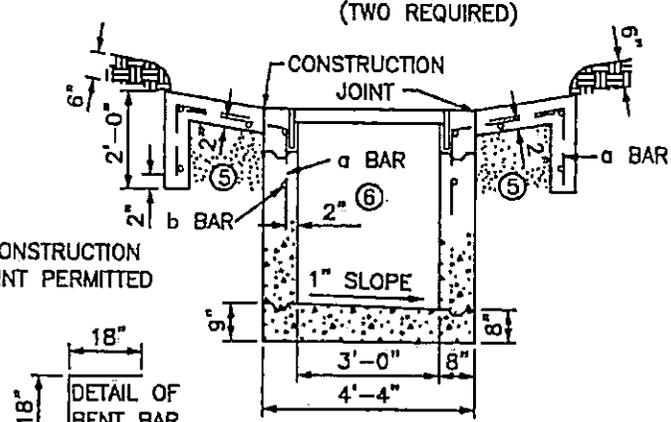
SECTION OF DIKE



SECTION C-C



SECTION B-B



SECTION A-A

- 6 : 1 Slopes are with reference to ditch grade.
- 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.
- Rate of increase or decrease 0.36 cu. yd. per foot in height.
- Deduct approximately 0.1 cu. yd. of concrete per pipe.
- Compact this volume with D.G.A. base or equivalent.
- Steps are required for depths greater than 4' refer to Std. Dwg. 103.

APPROX. QUANTITIES

| TYPE | CONCRETE | REINF. STEEL |
|-----------|---------------|--------------|
| 3'-9" BOX | ③ | |
| 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 |
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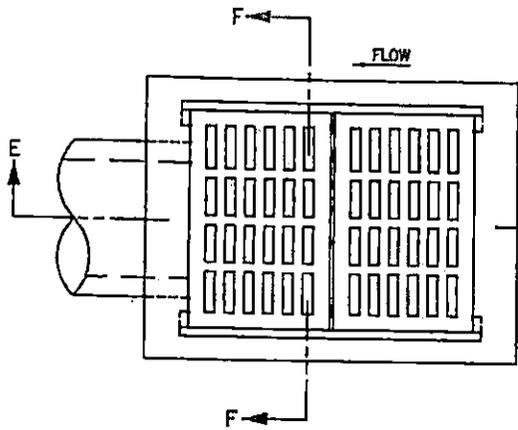
DIVISION OF ENGINEERING

SURFACE INLET TYPE "A"

STANDARD DRAWING NO. 120

APPROVED: *[Signature]* DATE: *[Date]*

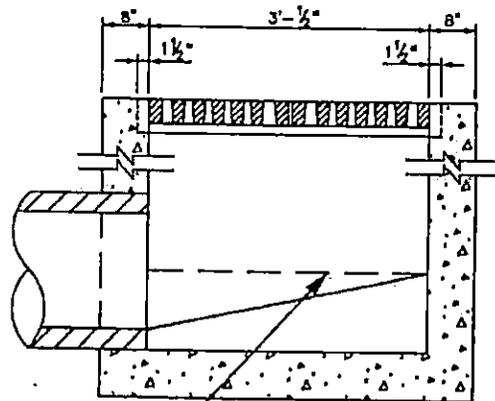
DRAWN BY: *[Signature]* DATE: *[Date]*



PLAN VIEW

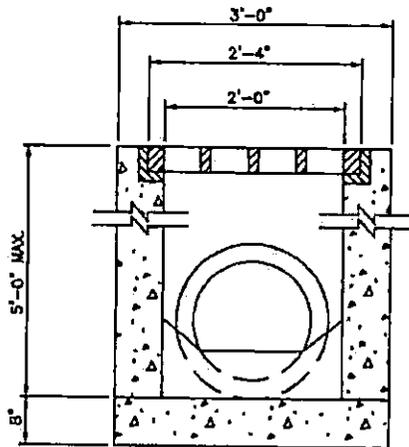
NOTES:

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.



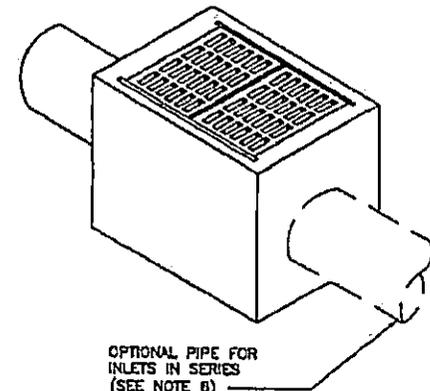
TOP OF CURB IF
PIPE RUNS STRAIGHT
THROUGH INLET

SECTION E-E

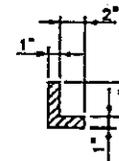
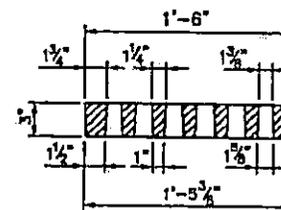
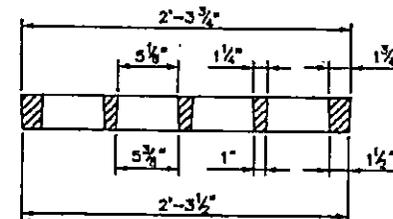


SECTION F-F

ISOMETRIC VIEW

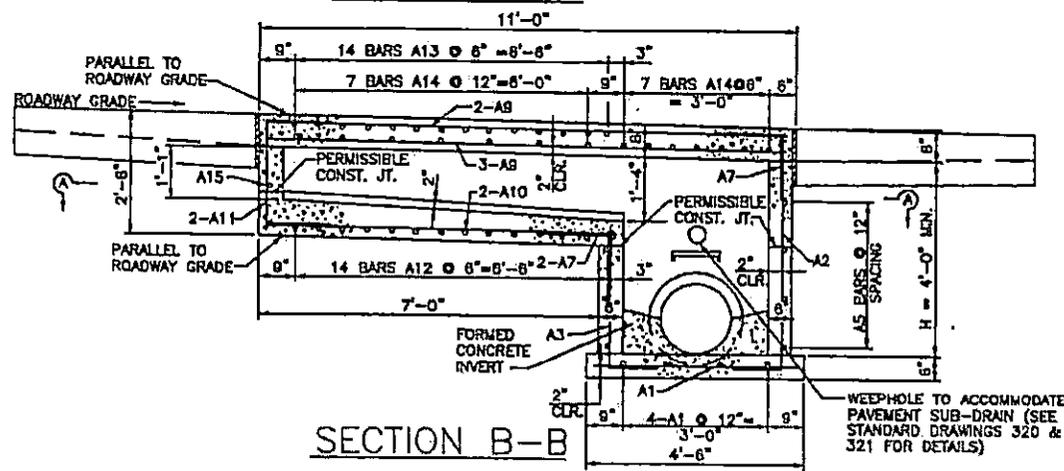
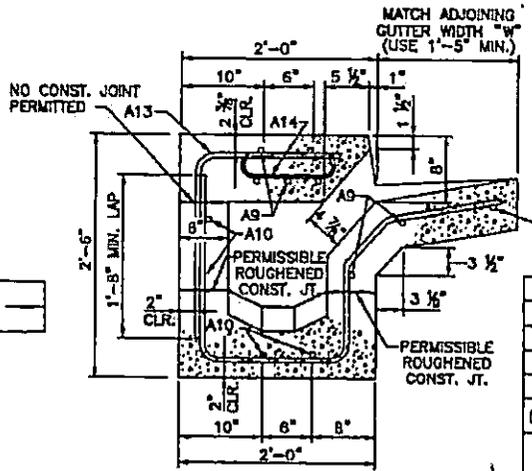
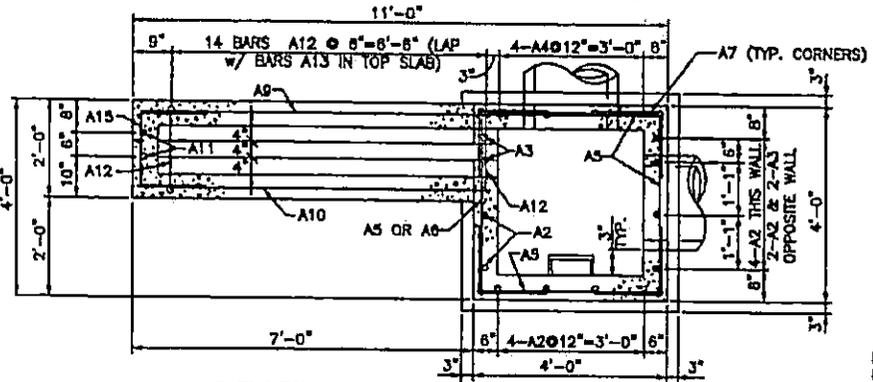
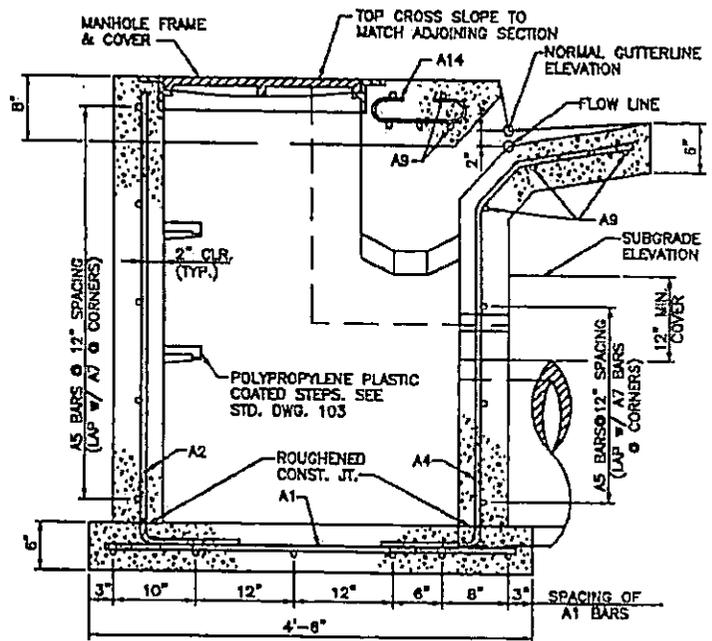
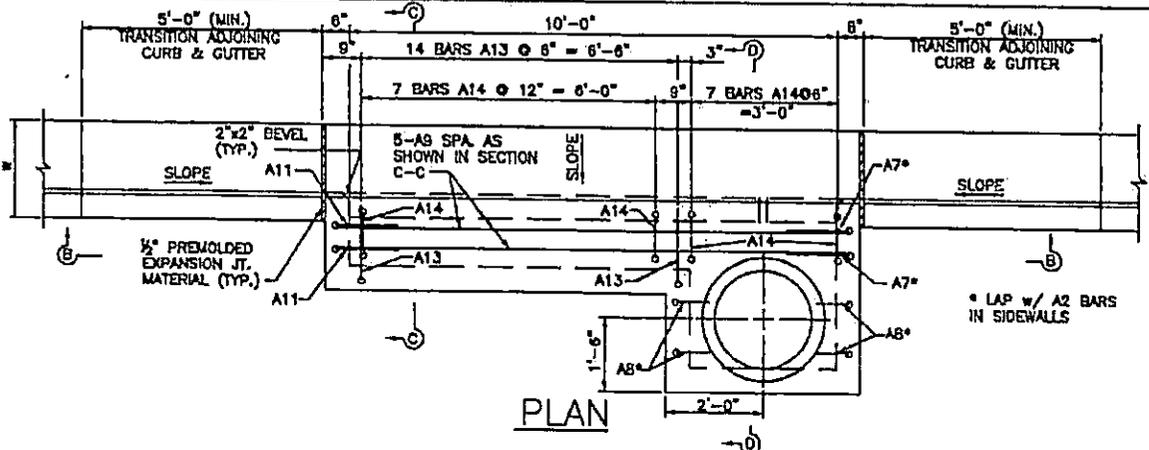


OPTIONAL PIPE FOR
INLETS IN SERIES
(SEE NOTE 6)



GRATE DETAILS

| NO. | DATE | REVISION DESCRIPTION | BY |
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| | | | |
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| | | | |
| DIVISION OF ENGINEERING | | | |
| SURFACE INLET TYPE "B" | | | |
| STANDARD DRAWING NO. | | | 121 |
| APPROVED | | | 5/1/08 |
| DESIGNED BY | | | DATE |
| COMMISSIONER | | | DATE |



SEE STD. DWG. 122-2 FOR BILL OF REINFORCEMENT & ADDITIONAL DETAILS

| NO. | DATE | REVISION DESCRIPTION | BY |
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DIVISION OF ENGINEERING

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

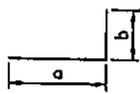
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| STANDARD DRAWING NO. | 122-1 |
| APPROVED | 5/1/02 |
| DESIGNED BY | DATE |
| COMMISSIONER | DATE |

BILL OF REINFORCEMENT

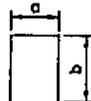
| MARK | TYPE | SIZE | NO. | LENGTH | | LOCATION | a | | b | | c | | d | |
|------|------|------|-----|------------|-----|----------------------|-----|--------|-----------|-----|-----|-----|---|-------|
| | | | | FT. | IN. | | FT. | IN. | FT. | IN. | FT. | IN. | | |
| A1 | STR | #5 | 10 | 4 | 2 | FOOTING | | | | | | | | |
| A2 | 1 | #5 | 10 | H+(1'-10") | | CHAMBER WALLS | 1 | 0 | H+10" | | | | | |
| A3 | 1 | #5 | 2 | H-4" | | CHAMBER WALLS | 1 | 0 | H-(1'-4") | | | | | |
| A4 | 3 | #5 | 4 | H+(2'-4") | | CHAMBER FRONT WALL | | | | | | | | |
| A5 | STR | #5 | 15* | 3 | 8 | CHAMBER WALLS | | | | | | | | |
| A6 | STR | #5 | 2 | 2 | 2 | CHAMBER ABOVE THROAT | | | | | | | | |
| A7 | 1 | #5 | 19* | 2 | 8 | CORNERS | 1 | 4 | 1 | 4 | | | | |
| A8 | 1 | #5 | 4 | 2 | 1 | CHAMBER WALLS & TOP | 1 | 4 | 0 | 9 | | | | |
| A9 | STR | #5 | 8 | 10 | 8 | TOP SLAB & APRON | | | | | | | | |
| A10 | STR | #5 | 4 | 7 | 2 | THROAT | | | | | | | | |
| A11 | 2 | #5 | 2 | 4 | 8 | THROAT | 2 | 1 5/8 | 1 | 4 | | | | |
| A12 | 4 | #5 | 14 | 6 | 1 | THROAT & APRON | | | | | | | | |
| A13 | 1 | #5 | 14 | 3 | 5 | THROAT | 1 | 11 | 1 | 6 | | | | |
| A14 | 5 | #3 | 14 | 1 | 11 | TOP SLAB | 0 | 11 1/2 | 0 | 7 | 0 | 3 | 0 | 8 1/2 |
| A15 | 2 | #5 | 1 | 4 | 2 | END THROAT | 1 | 6 | 1 | 4 | | | | |

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

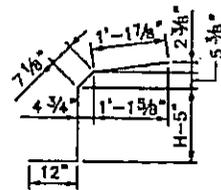
BAR TYPES



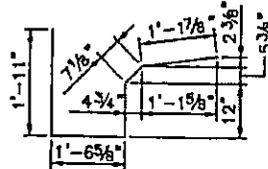
TYPE 1



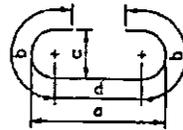
TYPE 2



TYPE 3



TYPE 4

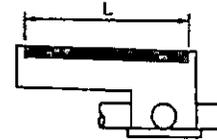


TYPE 5

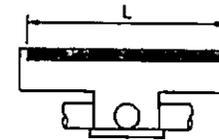
NOTES:

1. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI. STEEL REINFORCEMENT SHALL BE ASTM A-615, GRADE 60. ALL EXPOSED EDGES SHALL BE BEVELED 3/4" UNLESS OTHERWISE SHOWN.
2. THIS DRAWING DEPICTS A CURB BOX INLET IN A GRADE SITUATION. FOR CURB BOX BOX IN SAG SITUATION, DETAILS SHALL BE MODIFIED AS INDICATED IN DETAIL 'A'.
3. THE STANDARD OPENING LENGTH IS 10'-0" AS DETAILED HERE. THIS LENGTH MAY BE INCREASED OR DECREASED BASED ON HYDRAULIC ANALYSIS AND APPROVAL BY THE LEXINGTON-FAYETTE COUNTY URBAN GOVERNMENT ENGINEER. MODIFICATION TO THE OPENING LENGTH WILL REQUIRE MODIFICATION OF LENGTH OF BARS A9 & A10 AND INCREASE OR DECREASE IN NUMBER OF BARS A12, A13 & A14 MAINTAINING THE SAME MAXIMUM SPACING SHOWN ON THIS DRAWING.
4. MAXIMUM "H" FOR APPLICATION OF THIS DRAWING SHALL BE 10 FEET.
5. FIELD BEND OR CUT BARS A2, A4, AND A5 AS NECESSARY WHERE PIPES PENETRATE CHAMBER WALLS.
6. FOR CURB BOX INLET IN CURVE WITH CURB RADIUS OF LESS THAN 25', LONGITUDINAL BARS A9, A10 SHALL BE SHOP FABRICATED RADIALLY.

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



GRADE

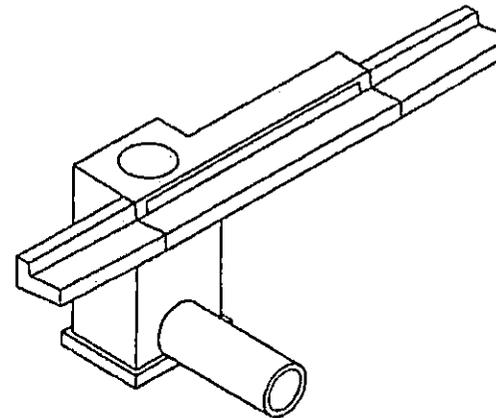


SAG



CURVE LENGTH

DETAIL 'A'
APPLICABLE SITUATIONS



ISOMETRIC VIEW

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

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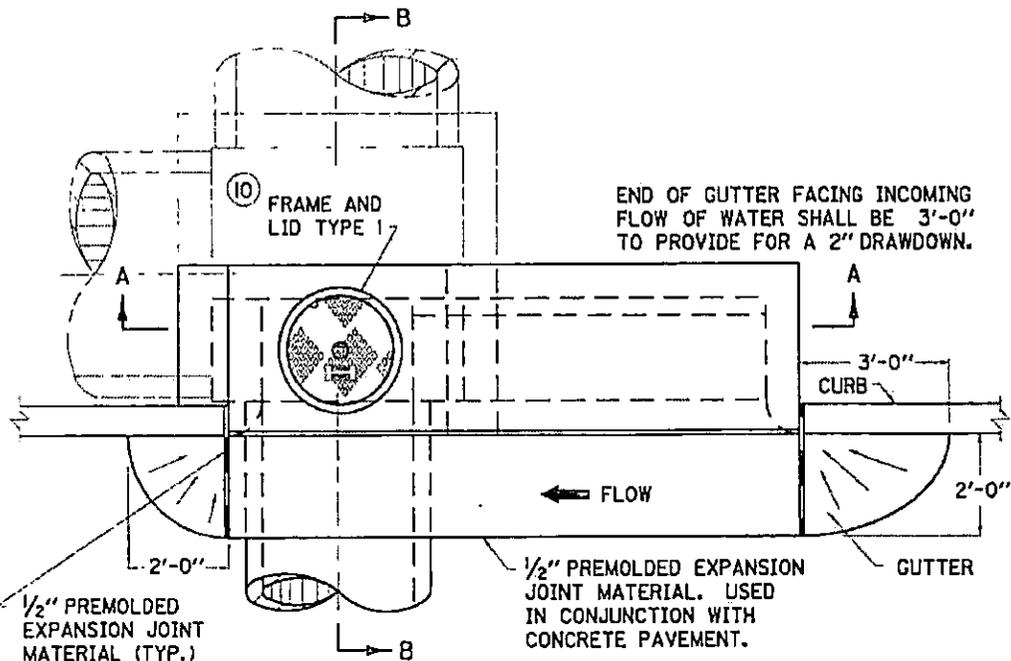
DIVISION OF ENGINEERING

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

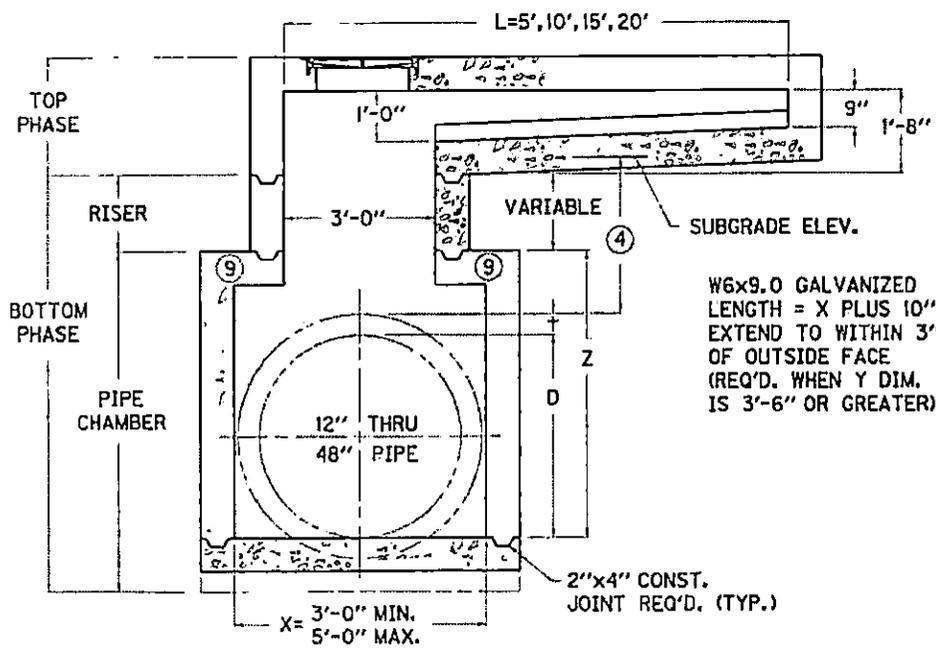
| STANDARD DRAWING NO. | 122-2 |
|----------------------|--------|
| APPROVED | 5/1/01 |
| DATE | 5/1/01 |
| DATE | 5/1/01 |

~ NOTES ~

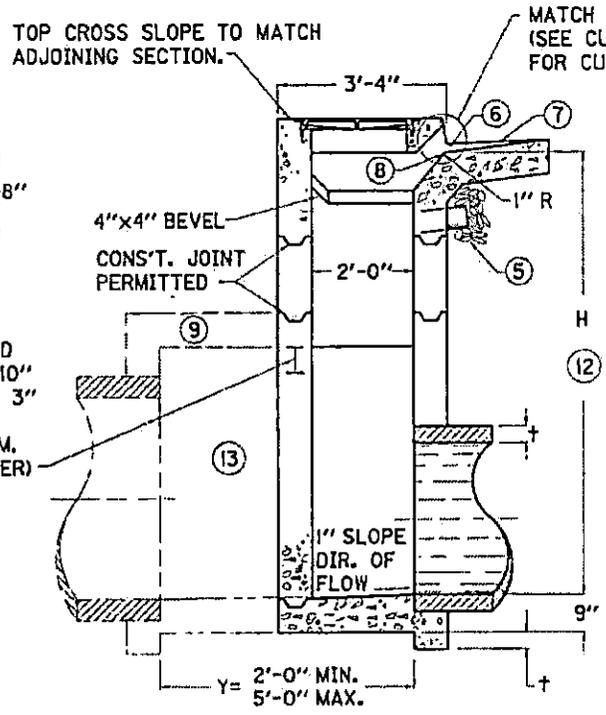
1. INLET SHALL BE CONSTRUCTED IN TWO PHASES (BOTTOM AND TOP) BID ITEM: CURB BOX INLET TYPE A (Δ)
 Δ (B) = BOTTOM PHASE ONLY, Δ (T) = TOP PHASE ONLY
 NO SUFFIX INDICATES COMPLETE INLET.
2. SEE CUR. STD. DWG. RDB-271, RDB-272, RDB-273, RDB-400, RDB-410 AND RDB-420 FOR STEEL PATTERN, DIMENSIONS AND QUANTITIES.
3. ALL WALLS, SLABS AND PATTERS ARE 8" THICK UNLESS OTHERWISE INDICATED.
- ④ 2'-0" DESIRED COVER, 1'-0" MINIMUM COVER.
- ⑤ SPALLS OR CRUSHED STONE AROUND END OF 4" OR 6" PIPE FOR SUBGRADE DRAINAGE.
- ⑥ 2" MINIMUM DRAWDOWN.
- ⑦ GUTTER CROSS SLOPE.
- ⑧ FLOW LINE (2" BELOW NORMAL GUTTERLINE ELEVATION).
- ⑨ LID MAY BE RAISED OR LOWERED IF APPROVED BY THE ENGINEER.
- ⑩ SEE CUR. STD. DWG. RDM-100 FOR FRAME AND LID TYPE I.
- II. NOTE: "+" IS CONCRETE PIPE WALL THICKNESS OR METAL PIPE CORRUGATION DEPTH.
- ⑫ MINIMUM HEIGHTS
 $H = Z + 1'-8"$ FOR STANDARD CURB
 $H = Z + 1'-10"$ FOR ISLAND CURB
 $H = Z + 1'-5"$ FOR BARRIER CURB
- ⑬ CHAMBER MAY BE SHIFTED TO ROADWAY SIDE OF BOX PROVIDED THERE IS 1'-0" MINIMUM COVER BETWEEN SUBGRADE ELEVATION AND TOP OF PIPE.



PLAN VIEW



SECTION A-A



SECTION B-B

| | |
|---------------------------|-----|
| RISER | |
| CU. YD. CONC. PER FT. HT. | 0.3 |

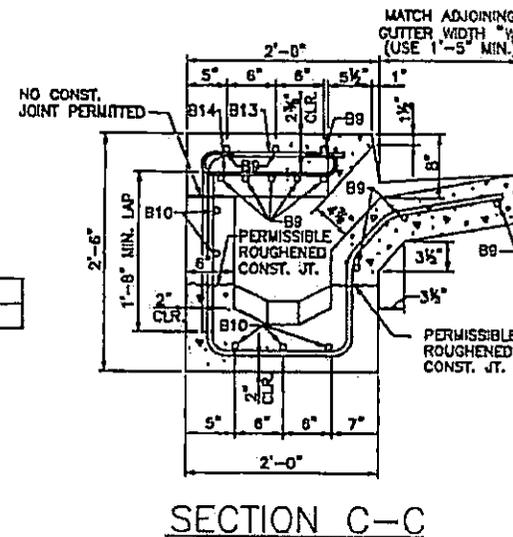
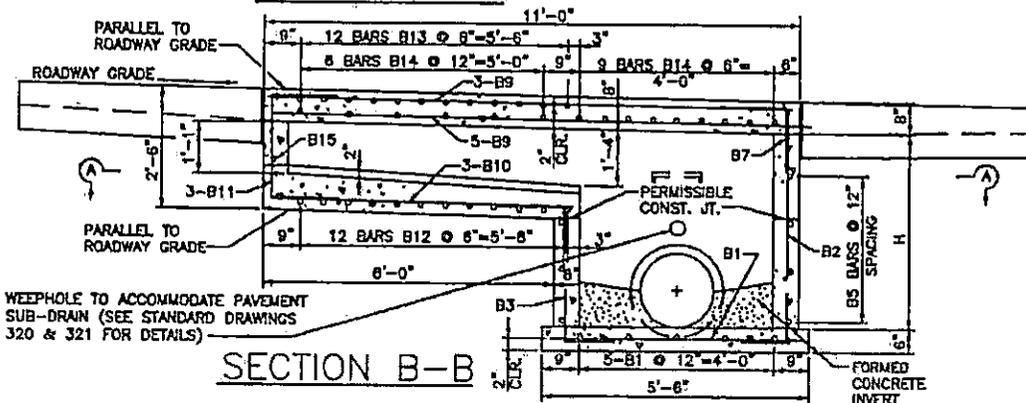
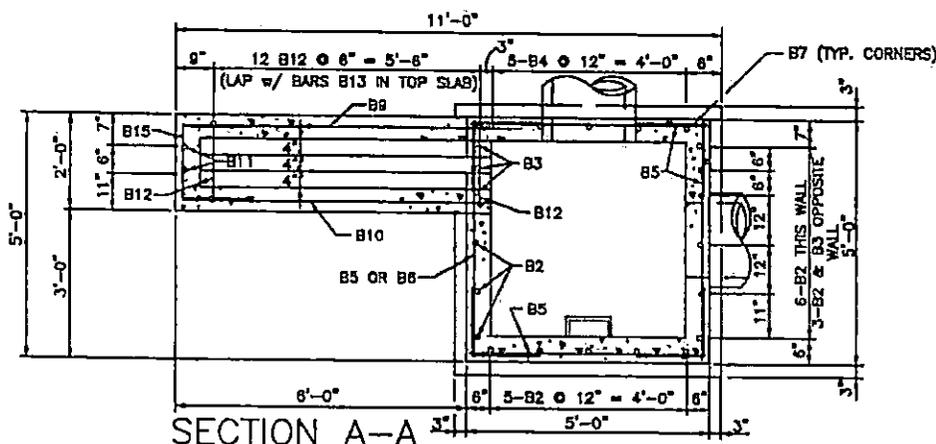
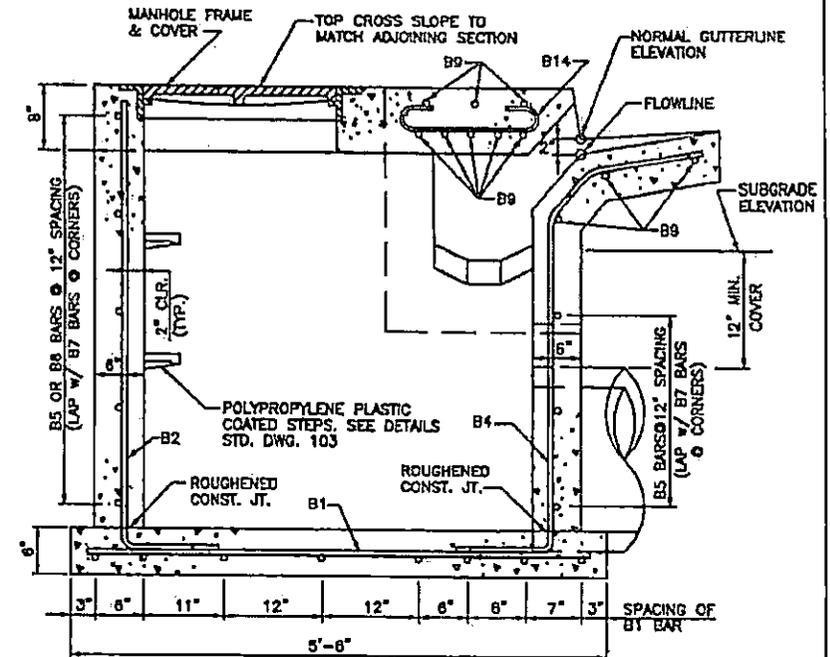
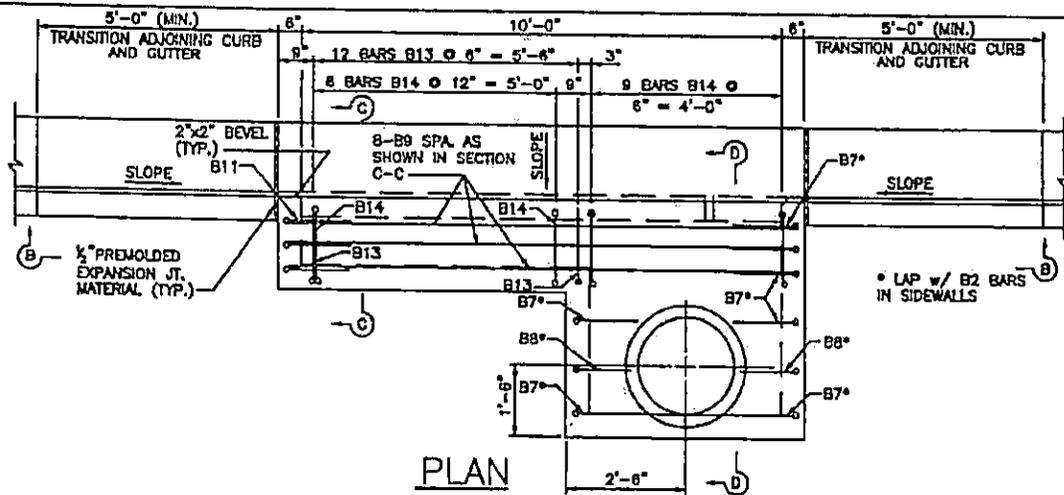
USE WITH CUR. STD. DRAWINGS,
 RDB-271, RDB-272, RDB-273,
 RDB-400, RDB-410, RDB-420
 AND RDM-100.

KENTUCKY
 DEPARTMENT OF HIGHWAYS

**CURB BOX INLET
 TYPE A
 (DETAIL DRAWING)**

STANDARD DRAWING NO. RDB-270-08

APPROVED: *[Signature]* 11-21-07
 11-21-07



SEE STD. DWG. 123-2 FOR BILL OF REINFORCEMENT & ADDITIONAL DETAILS.

| NO. | DATE | REVISION DESCRIPTION | BY |
|-----|------|----------------------|----|
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| | | | |
| | | | |

DIVISION OF ENGINEERING

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

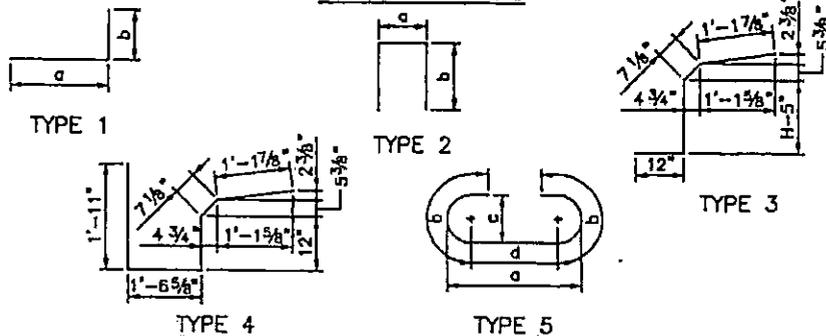
| | |
|----------------------|--------|
| STANDARD DRAWING NO. | 123-1 |
| APPROVED | 5/1/00 |
| DESIGNED | 5/1/00 |
| CHECKED | 5/1/00 |
| DATE | 5/1/00 |

BILL OF REINFORCEMENT

| MARK | TYPE | SIZE | NO. | LENGTH | | LOCATION | a | | b | | c | | d | |
|------|------|------|-----|------------|-----|----------------------|-----|-------|-----------|-----|-----|-----|---|---|
| | | | | FT. | IN. | | FT. | IN. | FT. | IN. | FT. | IN. | | |
| B1 | STR | #5 | 13 | 5 | 2 | FOOTING | | | | | | | | |
| B2 | 1 | #5 | 14 | H+(1'-10") | | CHAMBER WALLS | 1 | 0 | H+10" | | | | | |
| B3 | 1 | #5 | 3 | H-4" | | CHAMBER WALLS | 1 | 0 | H-(1'-4") | | | | | |
| B4 | 3 | #5 | 5 | H+(2'-4") | | CHAMBER FRONT WALL | | | | | | | | |
| B5 | STR | #5 | 15* | 4 | 8 | CHAMBER WALLS | | | | | | | | |
| B6 | STR | #5 | 2 | 3 | 2 | CHAMBER ABOVE THROAT | | | | | | | | |
| B7 | 1 | #5 | 25* | 2 | 8 | CORNERS | 1 | 4 | 1 | 4 | | | | |
| B8 | 1 | #5 | 2 | 2 | 8 | 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



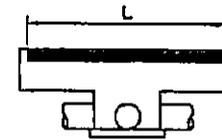
NOTES:

1. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI. STEEL REINFORCEMENT SHALL BE ASTM A-815, 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 IN SAG SITUATION, DETAILS SHALL BE MODIFIED AS INDICATED IN DETAIL 'A'.
3. THE STANDARD OPENING LENGTH IS 10'-0" AS DETAILED HERE. THIS LENGTH MAY BE INCREASED OR DECREASED BASED ON HYDRAULIC ANALYSIS AND APPROVAL BY THE LEXINGTON-FAYETTE COUNTY URBAN GOVERNMENT ENGINEER. MODIFICATION TO THE OPENING LENGTH WILL REQUIRE MODIFICATION OF LENGTH OF BARS B9 & B10 AND INCREASE OR DECREASE IN NUMBER OF BARS B12, B13 & B14 MAINTAINING THE SAME MAXIMUM SPACING SHOWN ON THIS DRAWING.
4. MAXIMUM "H" FOR APPLICATION OF THIS DRAWING SHALL BE 10 FEET.
5. FIELD BEND OR CUT BARS B2, B4, AND B5 AS NECESSARY WHERE PIPES PENETRATE CHAMBER WALLS.
6. FOR CURB BOX INLET IN CURVE WITH CURB RADIUS OF LESS THAN 25', LONGITUDINAL BARS B9, B10 SHALL BE SHOP FABRICATED RADIALLY.
7. 30" PIPE MAY BE APPROVED IF BOTH PIPES ARE INSTALLED ON THE SAME LINE.

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



GRADE

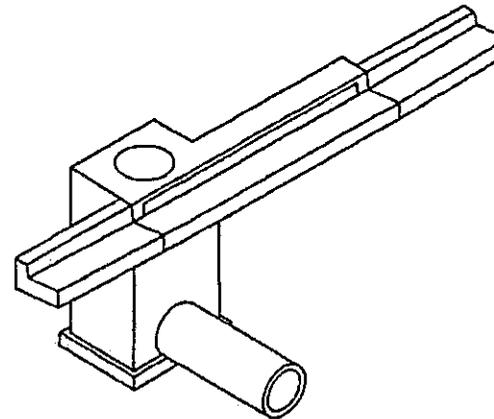


SAG



CURVE LENGTH

DETAIL 'A'
APPLICABLE SITUATIONS



ISOMETRIC VIEW

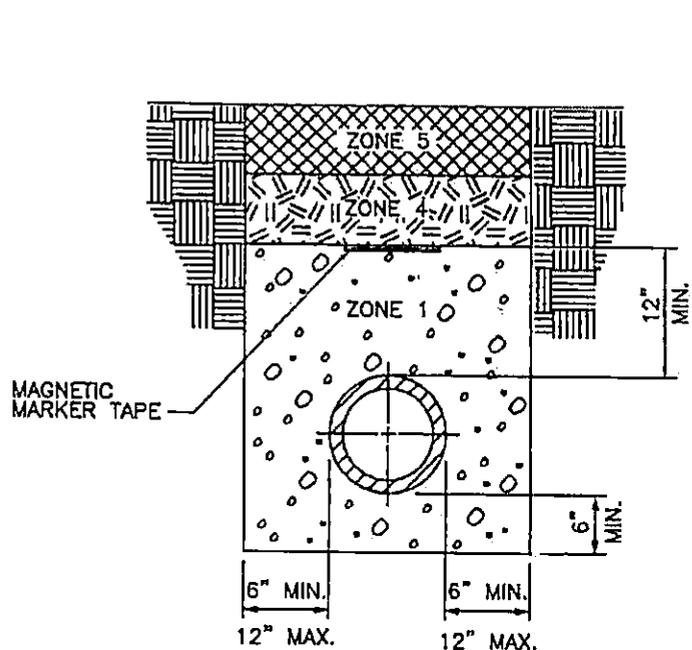
WORK THIS DWG. WITH STD. DWG. 123-1

| NO. | DATE | REVISION DESCRIPTION | BY |
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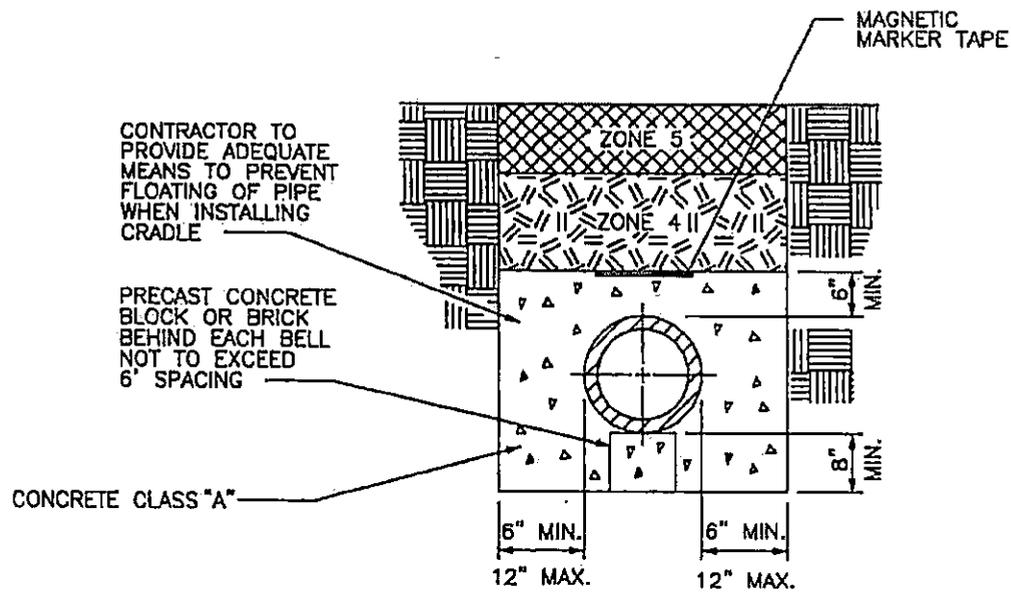
DIVISION OF ENGINEERING

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

| | |
|----------------------|-------|
| STANDARD DRAWING NO. | 123-2 |
| APPROVED | DATE |
| DESIGNED | DATE |
| CHECKED | DATE |



PIPE LAID IN ROCK OR SOIL TRENCH



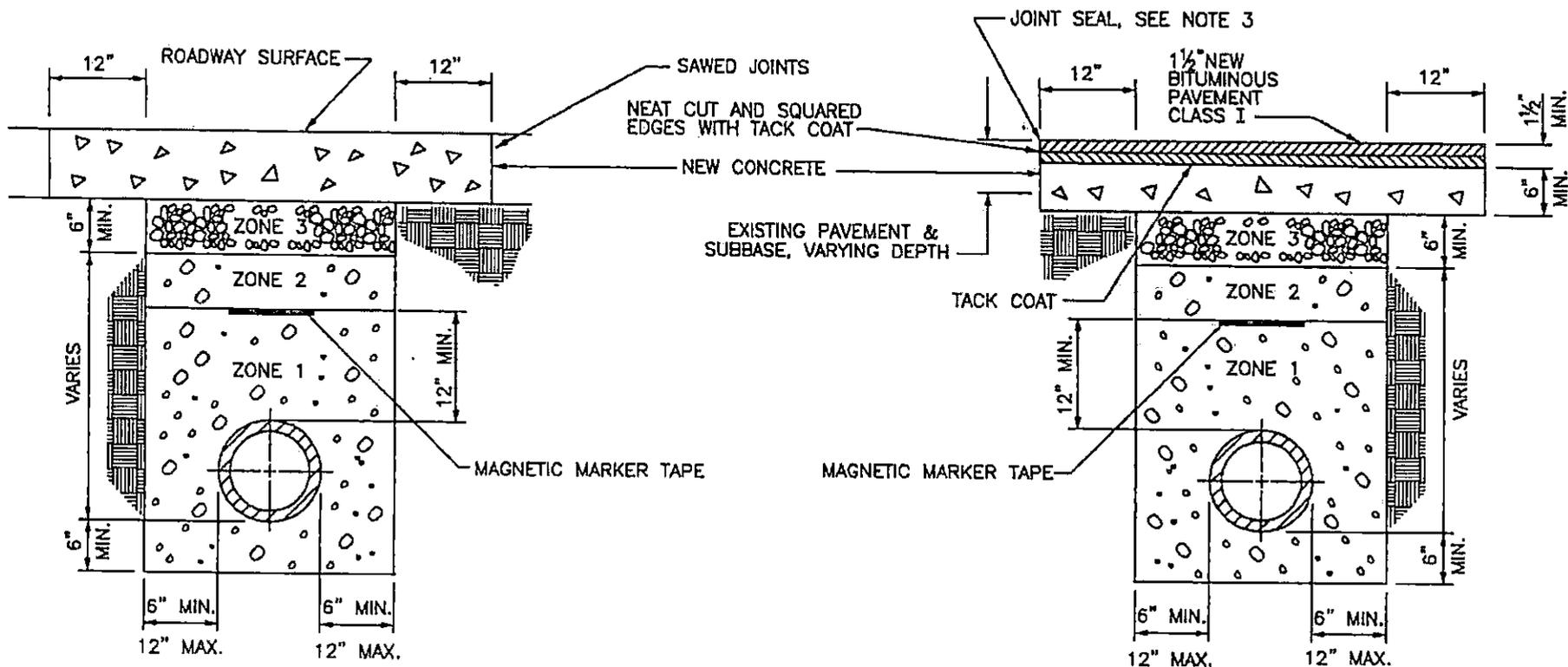
STANDARD CONCRETE ENCASEMENT
(NOTE: AS REQUIRED BY DESIGN)

| 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:

- COVER, UP TO AND INCLUDING ZONE 4 SHALL BE ESTABLISHED BEFORE TRENCH EXCAVATION.
- ALL SANITARY SEWER LINES CONSTRUCTED FROM NON-METALLIC MATERIALS SHALL HAVE MAGNETIC MARKER TAPE INSTALLED IN THE TRENCH ABOVE THE SANITARY SEWER LINE.
- MAGNETIC MARKER TAPE FOR SANITARY SEWER ONLY.

| NO. | DATE | REVISION DESCRIPTION | BY |
|---|--------------------|----------------------|--------|
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| | | | |
| | | | |
| DIVISION OF ENGINEERING | | | |
| TRENCHING, LAYING, BACKFILLING AND BEDDING OUTSIDE R/W LIMITS | | | |
| STANDARD DRAWING NO. | | 200 | |
| APPROVED | <i>[Signature]</i> | DATE | 5/1/00 |
| DESIGNED | <i>[Signature]</i> | DATE | 5/1/00 |
| CHECKED | <i>[Signature]</i> | DATE | |



CONCRETE PAVEMENT

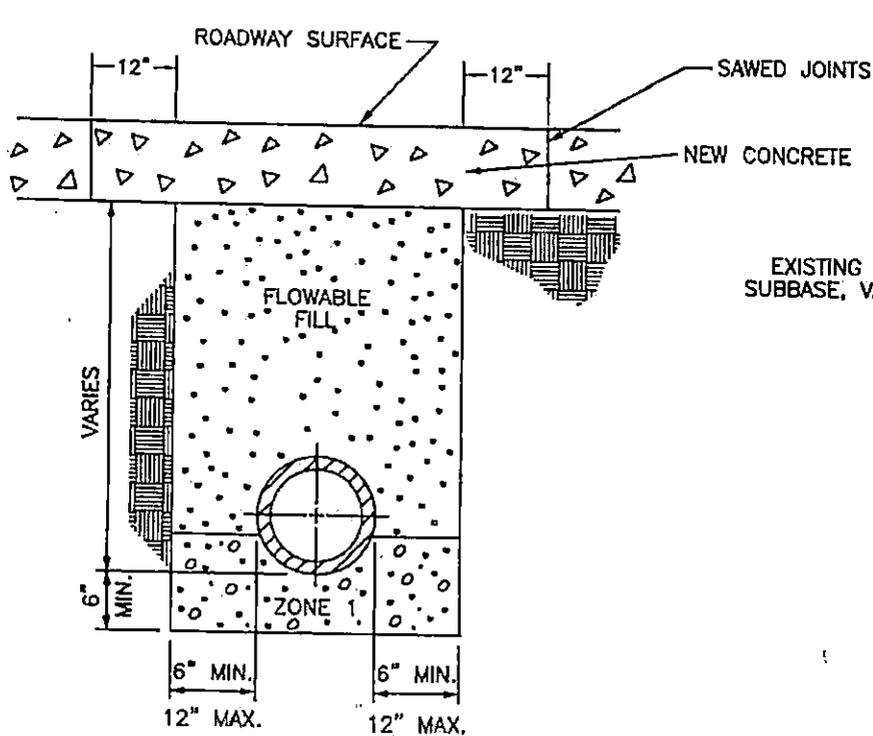
BITUMINOUS PAVEMENT

| PIPE BACKFILL DESCRIPTIONS | |
|----------------------------|---|
| ZONE 1 | NO. 9 STONE |
| ZONE 2 | NO. 9 OR NO. 57 STONE |
| ZONE 3 | COMPACTED DGA |
| ZONE 4 | CONSOLIDATED SOIL, (NO ROCK GREATER THAN 6" DIAMETER), NO. 9, OR NO. 57 STONE |
| ZONE 5 | 12" MAX. TOPSOIL, NO ROCK ALLOWED |

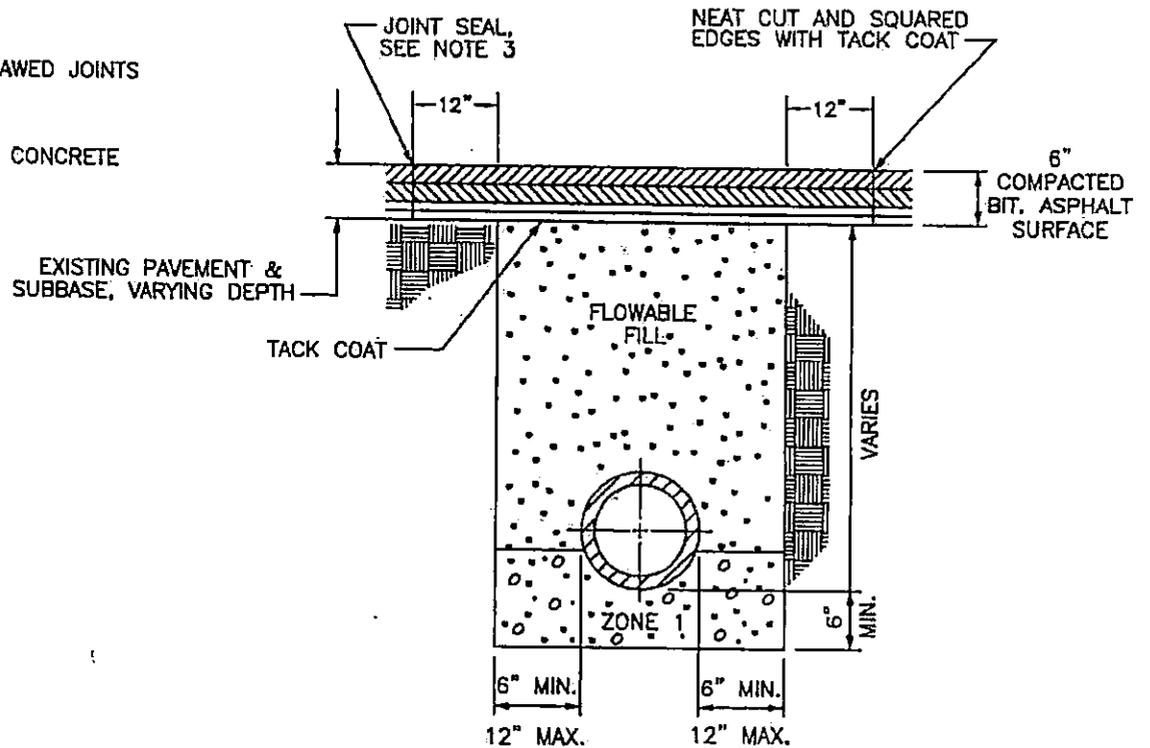
NOTES:

1. 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 | |
| APPROVED: | <i>[Signature]</i> | DATE | 5/1/02 |
| LEXINGTON COUNTY ENGINEER | | DATE | 5/1/02 |
| COMMISSIONER | | DATE | |



CONCRETE PAVEMENT



BITUMINOUS PAVEMENT

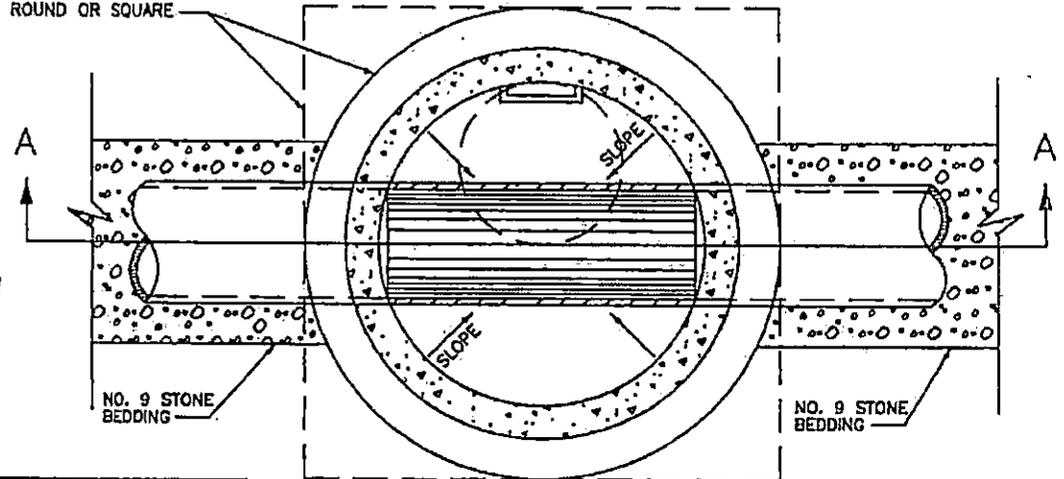
| PIPE BACKFILL DESCRIPTIONS | |
|----------------------------|---|
| ZONE 1 | NO. 9 STONE |
| ZONE 2 | NO. 9 OR NO. 57 STONE |
| ZONE 3 | COMPACTED DGA |
| ZONE 4 | CONSOLIDATED SOIL, (NO ROCK GREATER THAN 6" DIAMETER), NO. 9, OR NO. 57 STONE |
| ZONE 5 | 12" MAX. TOPSOIL, NO ROCK ALLOWED |

NOTES:

1. 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 |
|--|--------------------|----------------------|--------|
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| DIVISION OF ENGINEERING | | | |
| TRENCHING, LAYING, BACKFILLING, AND BEDDING UNDER STREET PAVEMENT USING FLOWABLE FILL | | | |
| STANDARD DRAWING NO. | | 201-2 | |
| APPROVED | <i>[Signature]</i> | DATE | 5/1/08 |
| UPDATING COUNTY SPECIFICATIONS | <i>[Signature]</i> | DATE | 5/1/08 |
| COMMISSIONER | <i>[Signature]</i> | DATE | 5/1/08 |

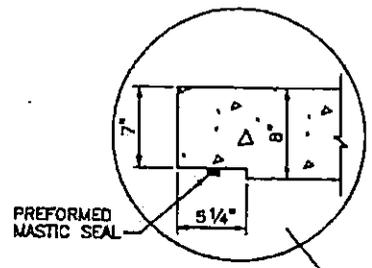
MANHOLE BASE MAY BE EITHER ROUND OR SQUARE



SECTION B-B

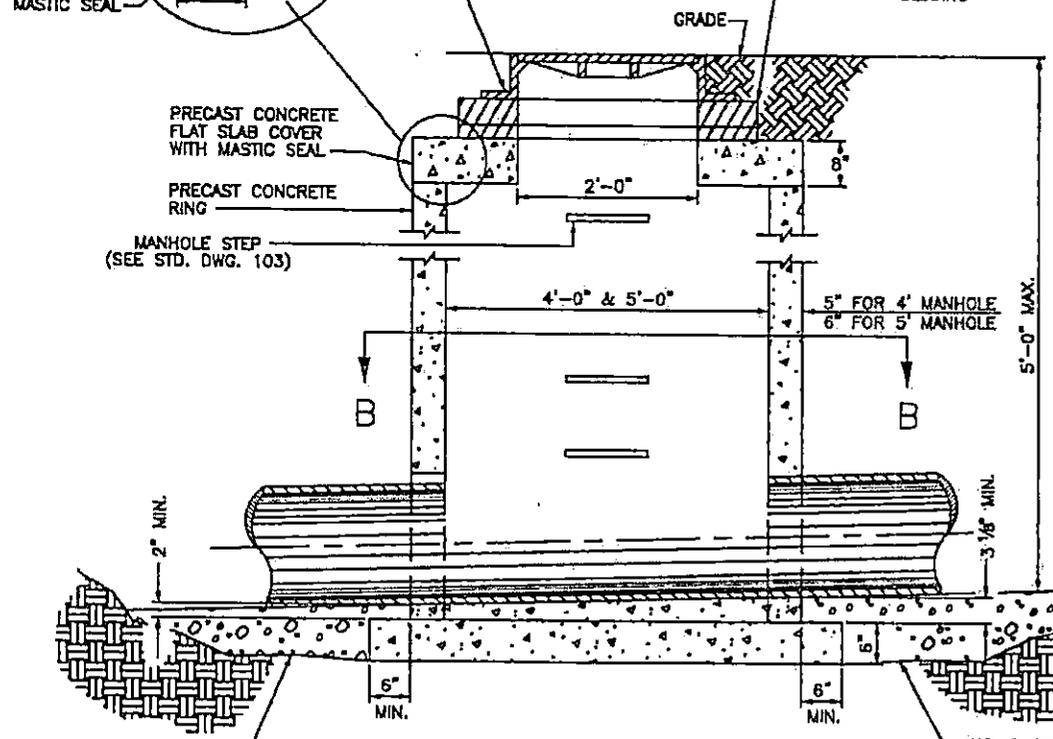
NOTES:

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.



PROVIDE COLLAR OF 6" FOR FUTURE ADJUSTMENT PRECAST CONCRETE RINGS.

SET FRAME CASTING IN FULL MASTIC BED; FOR WATERTIGHT FRAME & LID - SEE APPLICABLE STANDARD DRAWING



SECTION A-A

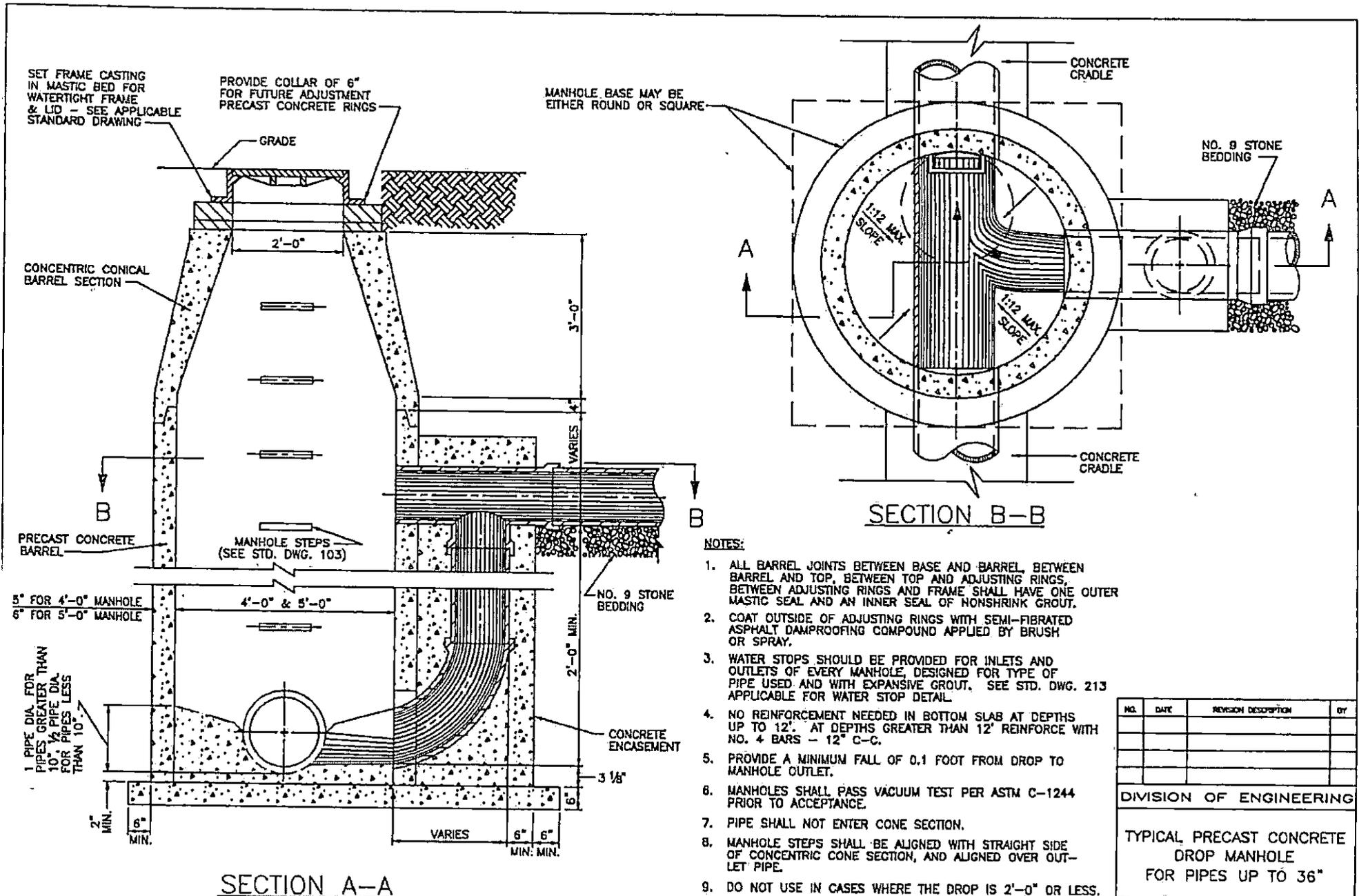
(PIPE WITH TOP HALF REMOVED OR PAVED INVERT)

| NO. | DATE | REVISION DESCRIPTION | BY |
|-----|------|----------------------|----|
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| | | | |

DIVISION OF ENGINEERING

TYPICAL PRECAST CONCRETE SHALLOW MANHOLE FOR PIPES 24" AND LARGER

| | |
|---------------------|--------|
| FORWARD DRAWING NO. | 210 |
| DATE | 5/1/00 |
| BY | SL/00 |
| DATE | 5/1/00 |
| COMMISSIONER | |



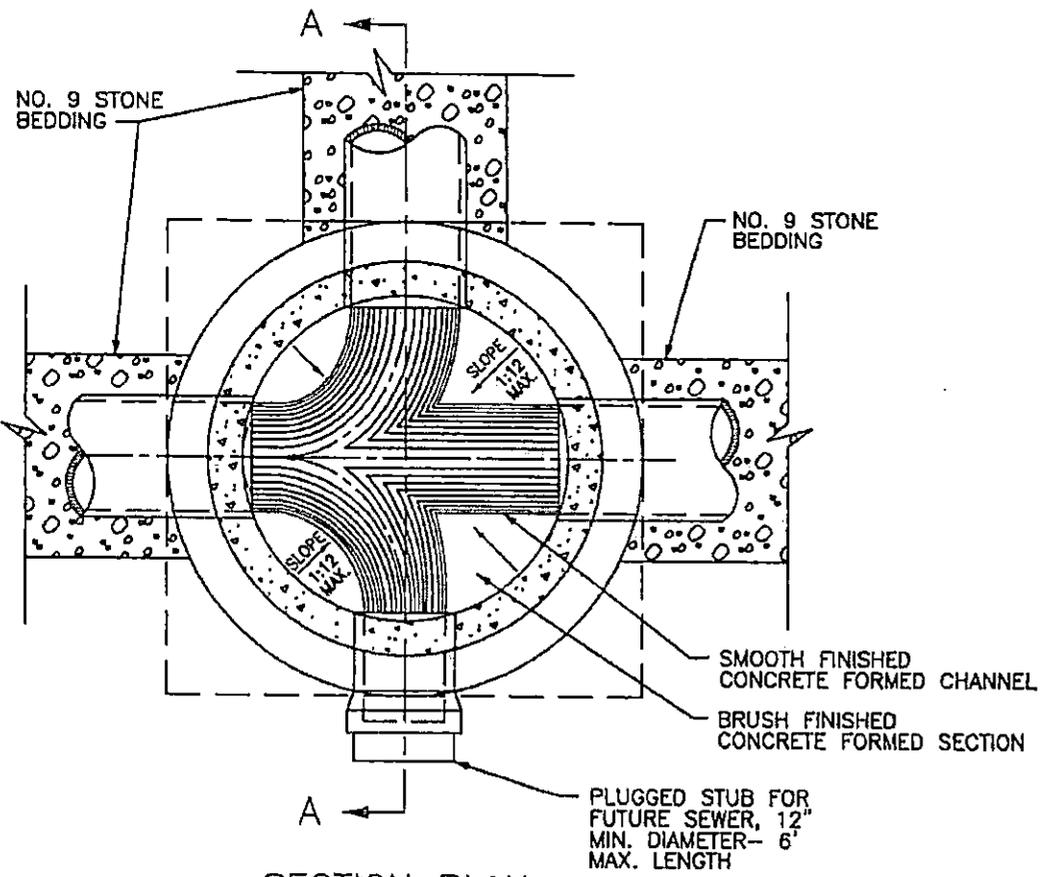
| NO. | DATE | REVISION DESCRIPTION | BY |
|---|--------------------|----------------------|-----|
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| | | | |
| DIVISION OF ENGINEERING | | | |
| TYPICAL PRECAST CONCRETE DROP MANHOLE FOR PIPES UP TO 36" | | | |
| STANDARD DRAWING NO. | | | 212 |
| APPROVED | <i>[Signature]</i> | 5/1/07 | |
| | | | |
| | | | |

1 PIPE DIA. FOR PIPES
GREATER THAN 10", 1/2
PIPE DIA. FOR PIPES
10" OR LESS

BRUSH FINISHED
CONCRETE FORMED SECTION

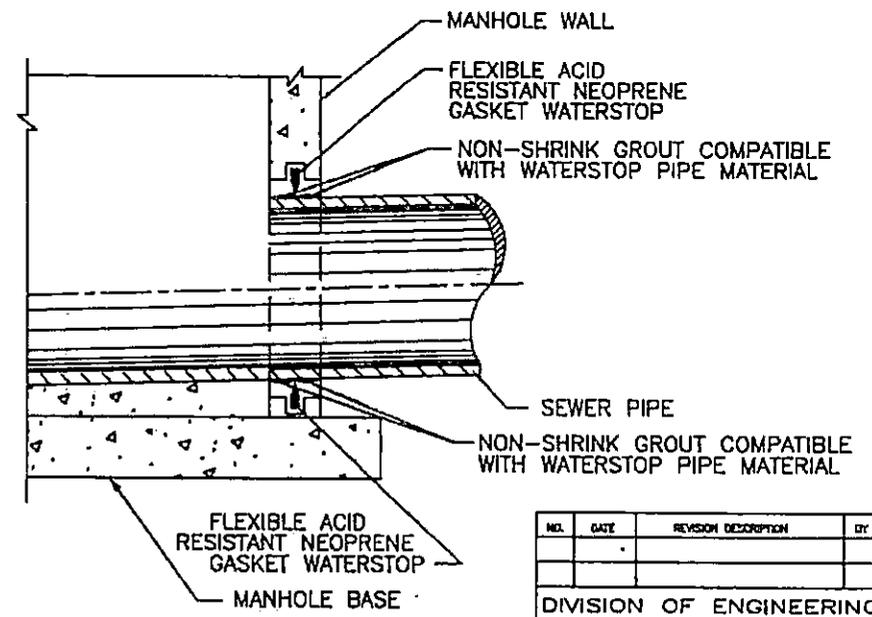
PLUGGED STUB FOR
FUTURE SEWER, 12"
MIN. - 6" MAX.

NO. 9 STONE
BEDDING



SECTION PLAN

SECTION A-A



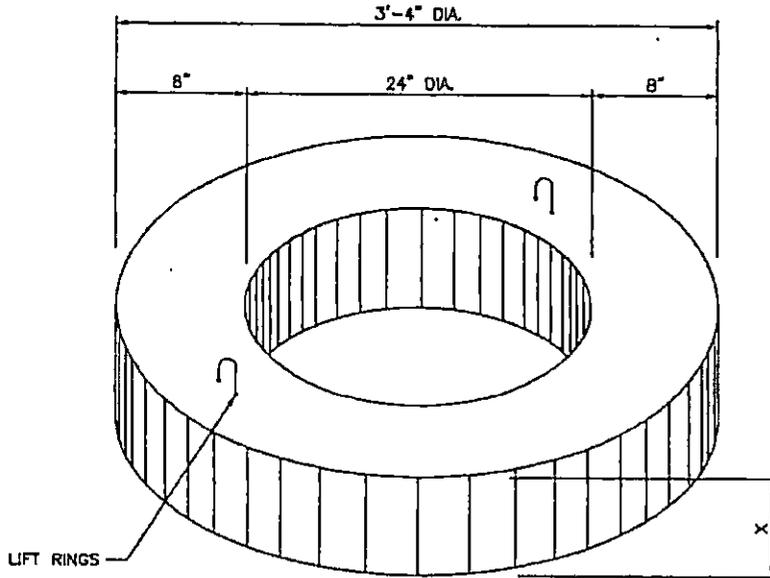
WATER STOP DETAIL

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 | DATE | | DATE |
| <i>[Signature]</i> | 11/29 | | 11/29 |
| LEXINGTON COUNTY ENGINEER | DATE | | DATE |
| <i>[Signature]</i> | 11/29 | | 11/29 |
| COMMISSIONER | DATE | | DATE |

NOTES:

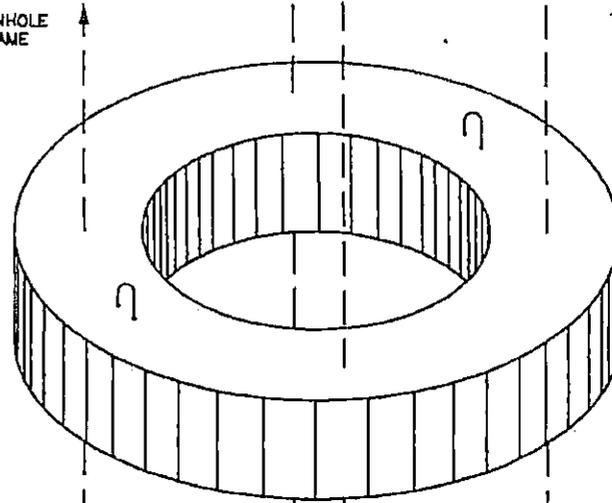
1. LIFT RINGS TO BE CUT BEFORE ADDING THE NEXT RING OR TOP.
2. COAT OUTSIDE AND IN BETWEEN ADJUSTING RINGS WITH SEMI-FIBRATED ASPHALT DAMPROOFING COMPOUND APPLIED BY BRUSH OR SPRAY.
3. GRADE RINGS WITH NON-PARALLEL SURFACES MAY BE USED TO ADJUST CASTING TO SLOPED SURFACE.
4. CONCRETE: CLASS "A" 3500 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.



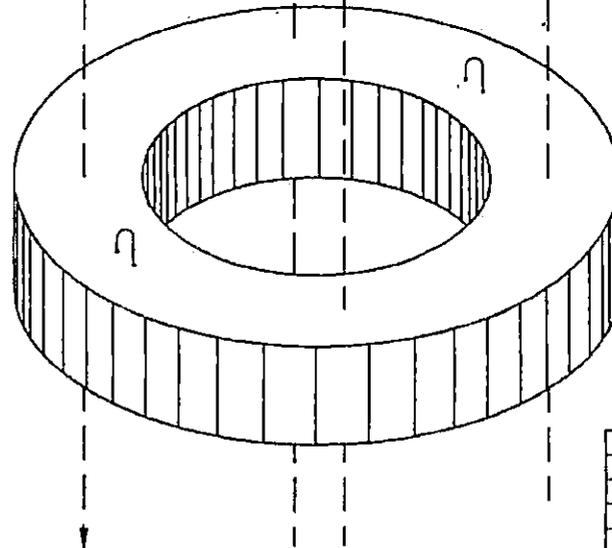
GRADE RING WIDTH CHART

| X | WEIGHT LBS. |
|-----|-------------|
| 2" | 140 |
| 3" | 210 |
| 4" | 279 |
| 6" | 419 |
| 8" | 560 |
| 12" | 730 |

TO MANHOLE LID FRAME



TO MANHOLE ECCENTRIC CONE SECTION



| NO. | DATE | REVISION DESCRIPTION | BY |
|-----|------|----------------------|----|
| | | | |
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| | | | |

DIVISION OF ENGINEERING

SEWER MANHOLE ADJUSTMENT GRADE RINGS

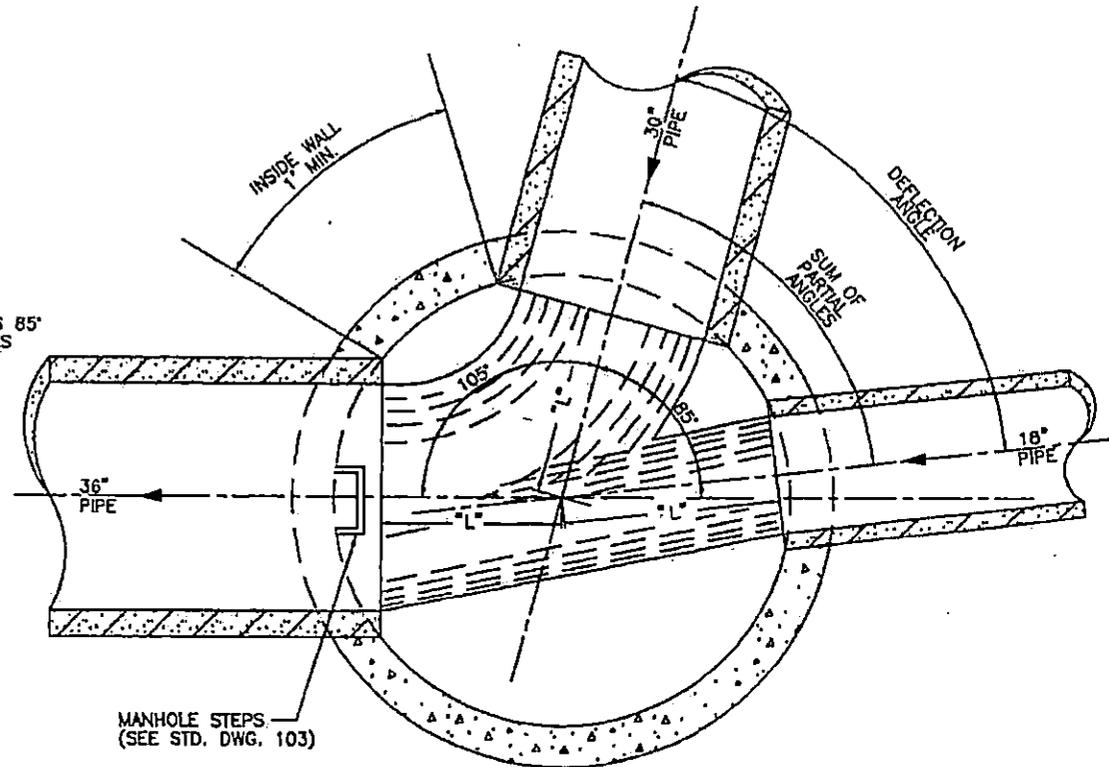
| | |
|---------------------------|------|
| STANDARD DRAWING NO. | 214 |
| APPROVED | DATE |
| LEXINGTON COUNTY ENGINEER | DATE |
| COMMISSIONER | DATE |

CIRCULAR MANHOLE NOTES:

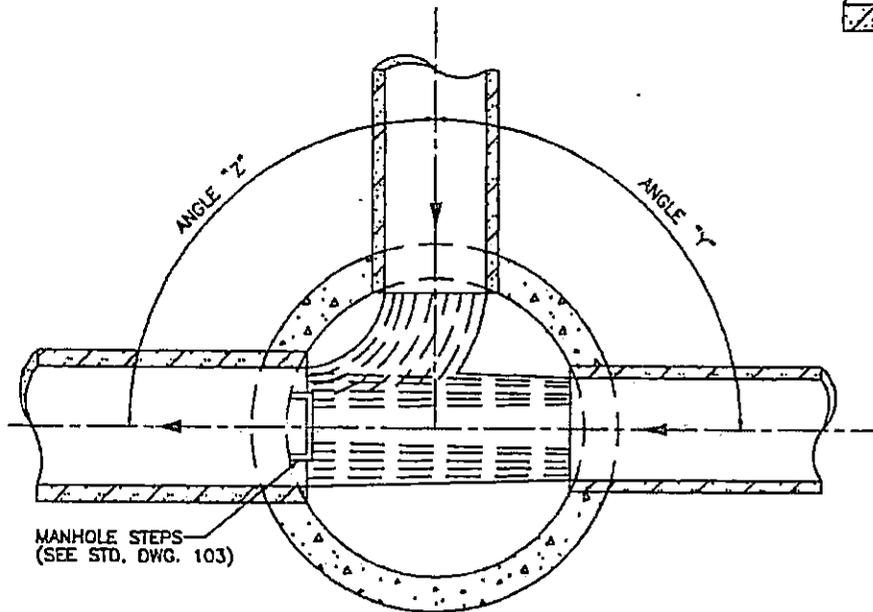
1. THE ANGLE BETWEEN ANY TWO PIPES (e.g. ANGLE "Y" OR "Z") MUST BE GREATER THAN THE SUM OF THE PARTIAL ANGLES. REFER TO SEPARATE STANDARD DRAWINGS FOR TABLE OF MINIMUM PARTIAL ANGLES. ANGLES SMALLER THAN LISTED ON TABLE SHALL REQUIRE LARGER MANHOLE SELECTION.
2. THE MAXIMUM DEFLECTION ANGLE BETWEEN ANY 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

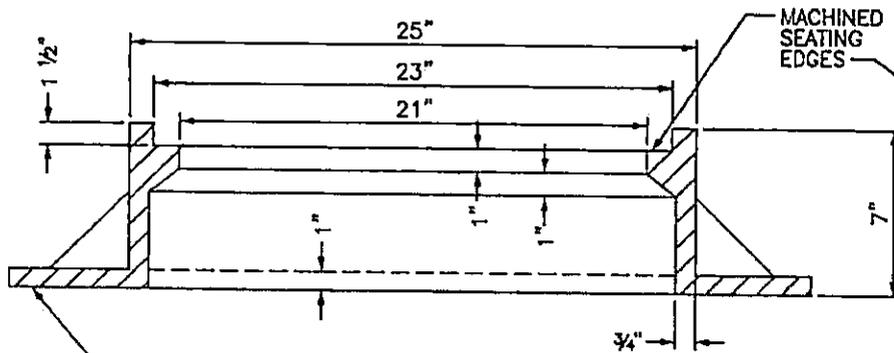
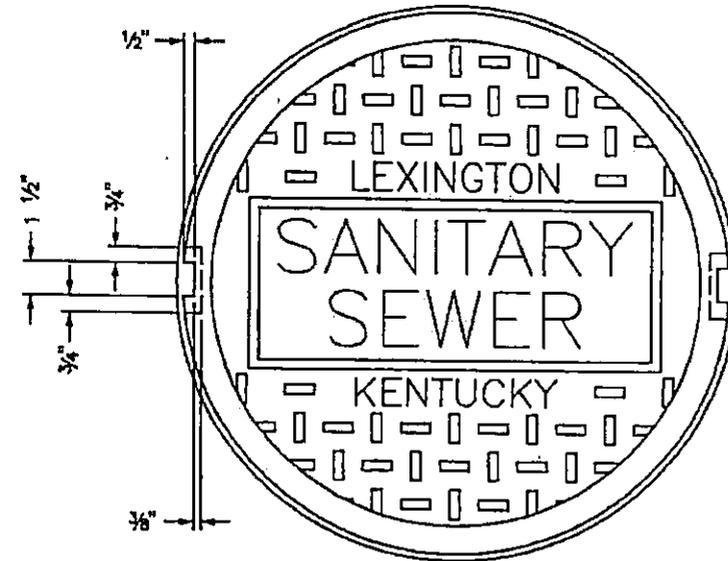
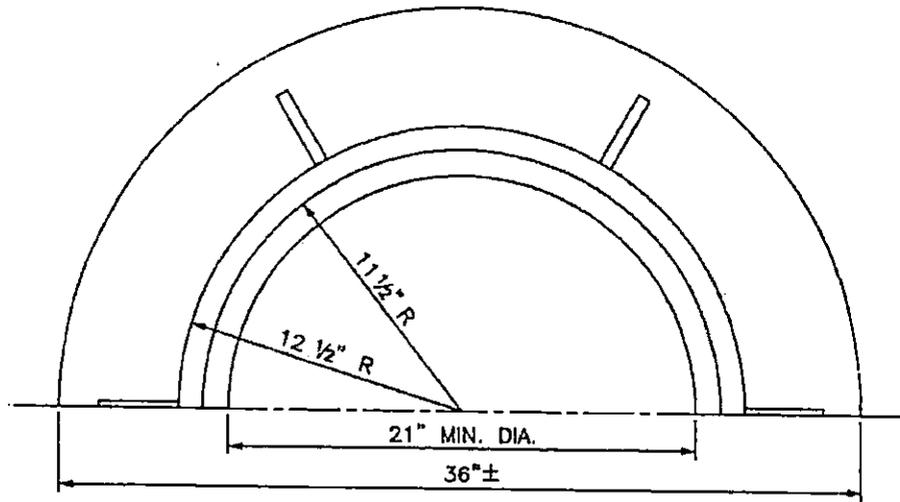
| PIPE SIZE | 4'-0" | | 5'-0" | |
|-----------|----------|----------|----------|----------|
| | P. ANGLE | L. DIST. | P. ANGLE | L. DIST. |
| 15" | 36° | 1'-10" | 30° | 2'-3" |
| 18" | 43° | 1'-8" | 34° | 2'-3" |
| 24" | 53° | 1'-6" | 39° | 2'-2" |
| 27" | -- | -- | 45° | 2'-0" |
| 30" | -- | -- | 50° | 1'-11" |

| NO. | DATE | REVISION DESCRIPTION | BY |
|-----|------|----------------------|----|
| | | | |
| | | | |

DIVISION OF ENGINEERING

DEFLECTION ANGLE
CRITERIA FOR
SANITARY MANHOLES

| | |
|-----------------------|--------|
| STANDARD DRAWING NO. | 217 |
| APPROVED | 5/1/08 |
| URBAN COUNTY ENGINEER | DATE |
| CHECKED | DATE |

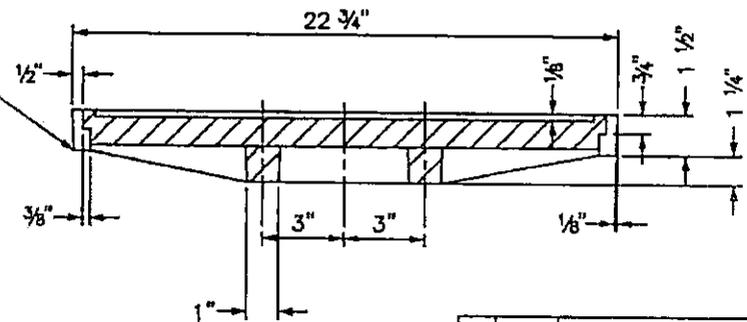


SET FRAME CASTING IN FULL MORTAR BED, FOR WATERTIGHT MANHOLE FRAME AND LID - SEE APPLICABLE STANDARD DRAWING

FRAME 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.

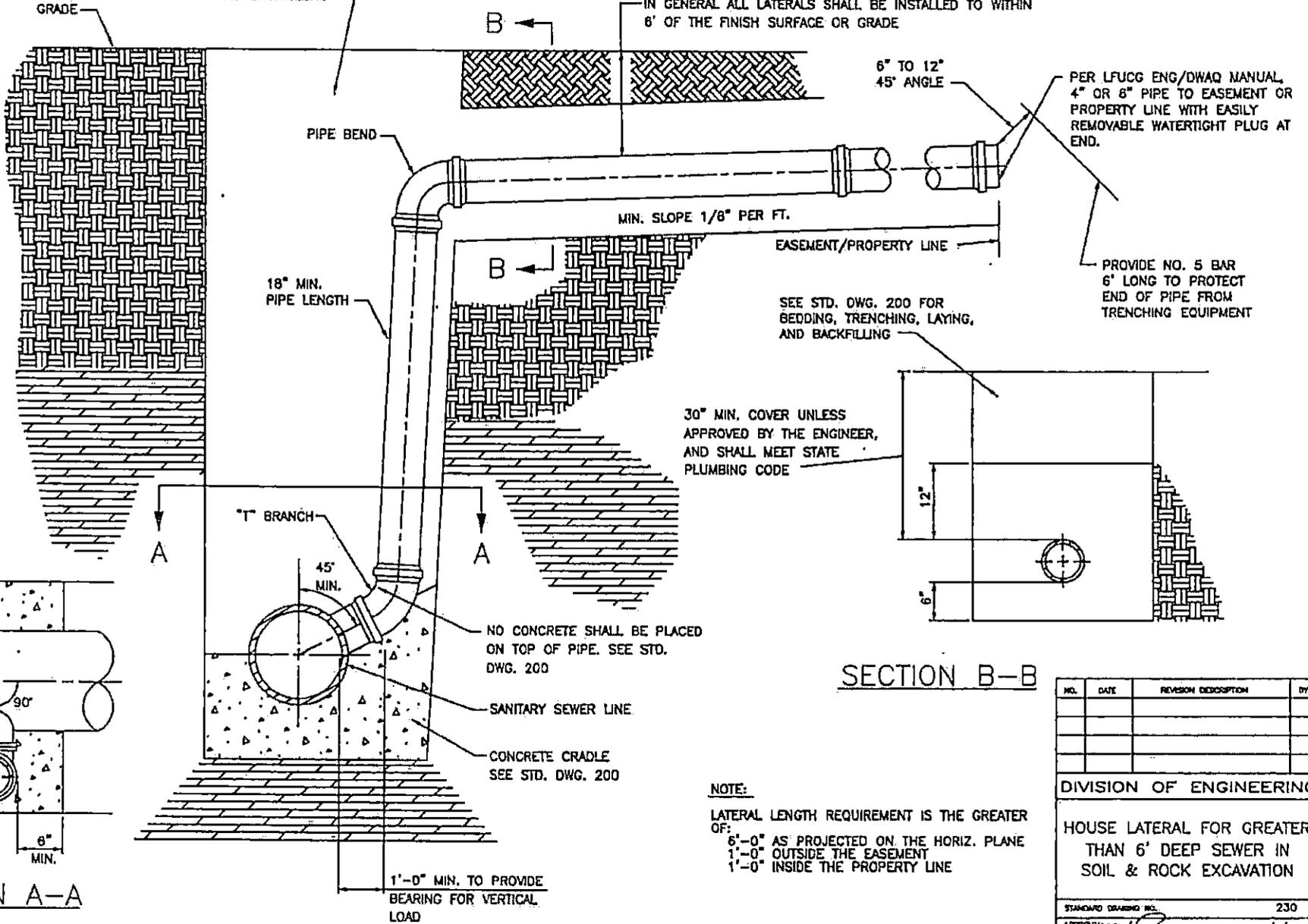


COVER DETAIL

| NO. | DATE | REVISION DESCRIPTION | BY |
|--|------|----------------------|----|
| | | | |
| | | | |
| | | | |
| | | | |
| DIVISION OF ENGINEERING | | | |
| STANDARD CIRCULAR MANHOLE FRAME & COVER | | | |
| STANDARD DRAWING NO. 220 | | DATE 5/1/02 | |
| APPROVAL <i>[Signature]</i> | | DATE 5/1/02 | |
| LEXINGTON URBAN COUNTY GOVERNMENT | | DATE 5/1/02 | |
| COMMISSIONER | | DATE | |

SEE APPLICABLE STANDARD DRAWING FOR BEDDING, TRENCHING, LAYING, AND BACKFILLING

IN GENERAL ALL LATERALS SHALL BE INSTALLED TO WITHIN 6' OF THE FINISH SURFACE OR GRADE



6" TO 12" 45° ANGLE

PER LFUGG ENG/DWAQ MANUAL, 4" OR 8" PIPE TO EASEMENT OR PROPERTY LINE WITH EASILY REMOVABLE WATERTIGHT PLUG AT END.

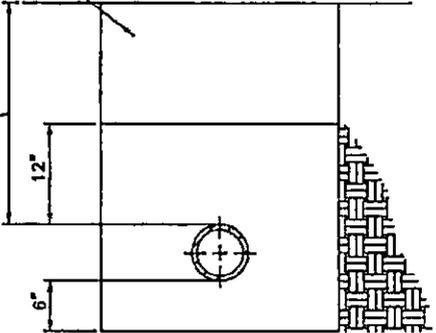
MIN. SLOPE 1/8" PER FT.

EASEMENT/PROPERTY LINE

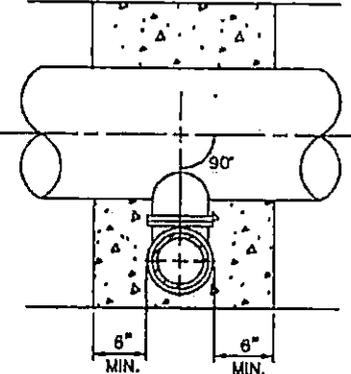
PROVIDE NO. 5 BAR 6' LONG TO PROTECT END OF PIPE FROM TRENCHING EQUIPMENT

SEE STD. DWG. 200 FOR BEDDING, TRENCHING, LAYING, AND BACKFILLING

30" MIN. COVER UNLESS APPROVED BY THE ENGINEER, AND SHALL MEET STATE PLUMBING CODE



SECTION B-B



SECTION A-A

1" BRANCH

45° MIN.

NO CONCRETE SHALL BE PLACED ON TOP OF PIPE. SEE STD. DWG. 200

SANITARY SEWER LINE

CONCRETE CRADLE SEE STD. DWG. 200

1'-0" MIN. TO PROVIDE BEARING FOR VERTICAL LOAD

NOTE:

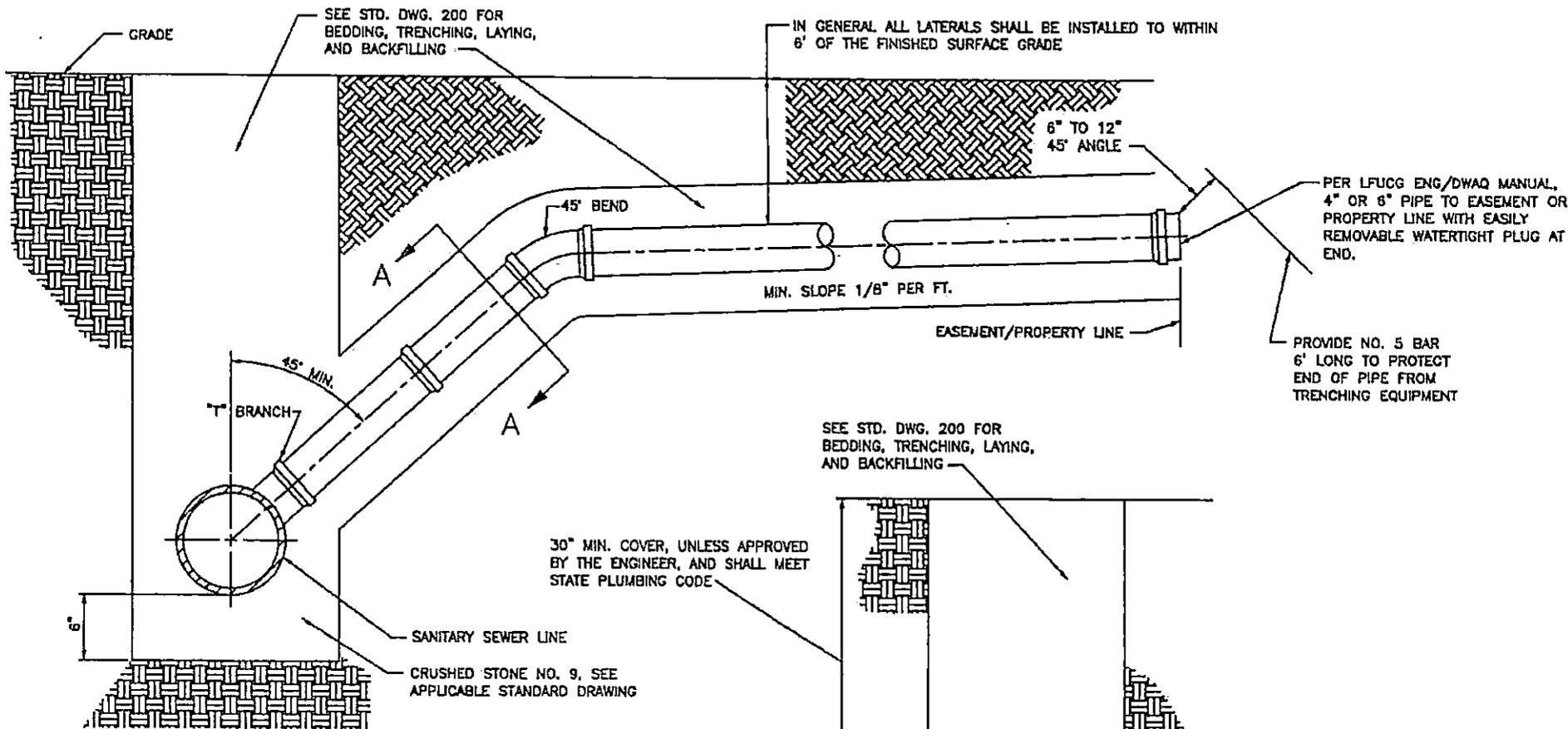
LATERAL LENGTH REQUIREMENT IS THE GREATER OF:
 6'-0" AS PROJECTED ON THE HORIZ. PLANE
 1'-0" OUTSIDE THE EASEMENT
 1'-0" INSIDE THE PROPERTY LINE

| NO. | DATE | REVISION DESCRIPTION | BY |
|-----|------|----------------------|----|
| | | | |
| | | | |
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DIVISION OF ENGINEERING

HOUSE LATERAL FOR GREATER THAN 6' DEEP SEWER IN SOIL & ROCK EXCAVATION

| | |
|---------------------------|-------------------------|
| STANDARD DRAWING NO. | 230 |
| APPROVED | <i>[Signature]</i> DATE |
| LEXINGTON COUNTY ENGINEER | <i>[Signature]</i> DATE |
| COMMISSIONER | <i>[Signature]</i> DATE |



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

PER LFUGG ENG/DWAQ MANUAL,
4" OR 6" PIPE TO EASEMENT OR
PROPERTY LINE WITH EASILY
REMOVABLE WATERTIGHT PLUG AT
END.

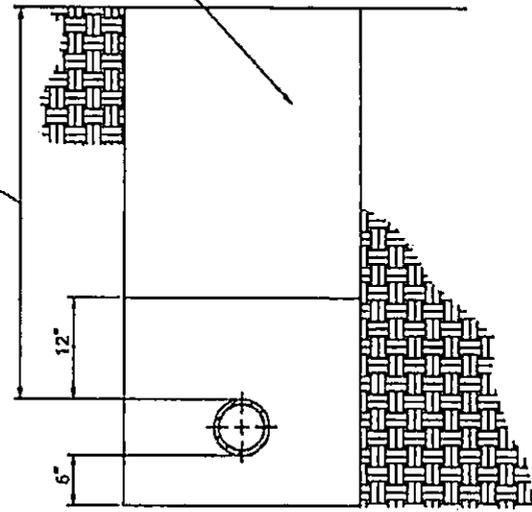
PROVIDE NO. 5 BAR
6' LONG TO PROTECT
END OF PIPE FROM
TRENCHING EQUIPMENT

SEE STD. DWG. 200 FOR
BEDDING, TRENCHING, LAYING,
AND BACKFILLING

30" MIN. COVER, UNLESS APPROVED
BY THE ENGINEER, AND SHALL MEET
STATE PLUMBING CODE

SANITARY SEWER LINE
CRUSHED STONE NO. 9, SEE
APPLICABLE STANDARD DRAWING

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



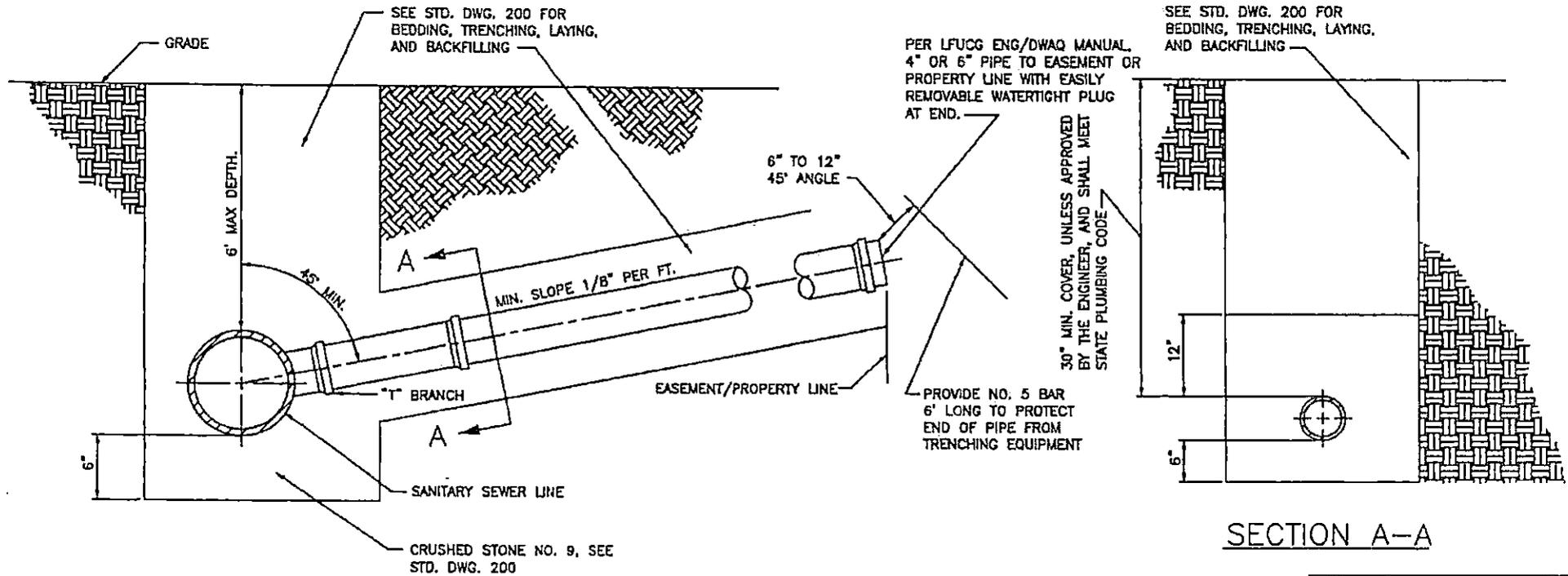
SECTION A-A

| NO. | DATE | REVISION DESCRIPTION | BY |
|-----|------|----------------------|----|
| | | | |
| | | | |
| | | | |

DIVISION OF ENGINEERING

HOUSE LATERAL FOR GREATER
THAN 6' DEEP SEWER
IN SOIL

STANDARD DRAWING NO. 231
 APPROVED: *[Signature]* 5/1/08
 LEXINGTON COUNTY ENGINEER
 DATE 5/1/08
 COMMISSIONER



SECTION A-A

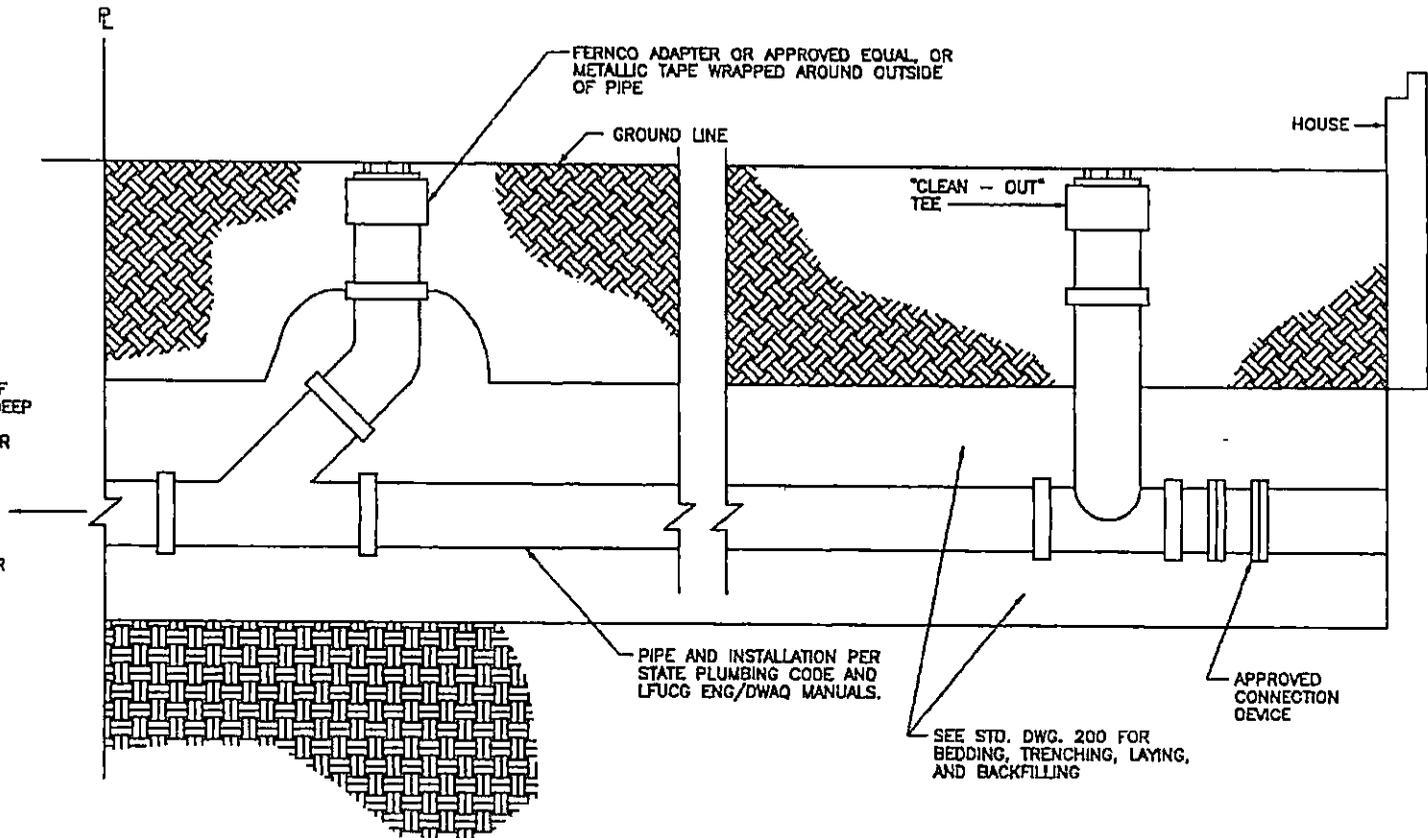
NOTE:

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 | <i>[Signature]</i> | DATE | <i>5/1/02</i> |
| DESIGNED BY | <i>[Signature]</i> | DATE | <i>5/1/02</i> |
| CHECKED BY | <i>[Signature]</i> | DATE | <i>5/1/02</i> |

REFER TO STD. DWG. 231 FOR DETAILS OF "HOUSE LATERAL FOR GREATER THAN 6' DEEP SEWER IN SOIL" AND STD. DWG. 230 FOR DETAILS OF "HOUSE LATERAL FOR GREATER THAN 6' DEEP SEWER IN SOIL AND ROCK EXCAVATION"

REFER TO STD. DWG. 232 FOR DETAILS OF "HOUSE LATERAL FOR SHALLOW SEWER IN SOIL OR ROCK"



PIPE AND INSTALLATION PER STATE PLUMBING CODE AND LFUCG ENG/DWAQ MANUALS.

SEE STD. DWG. 200 FOR BEDDING, TRENCHING, LAYING, AND BACKFILLING

APPROVED CONNECTION DEVICE

NOTE:

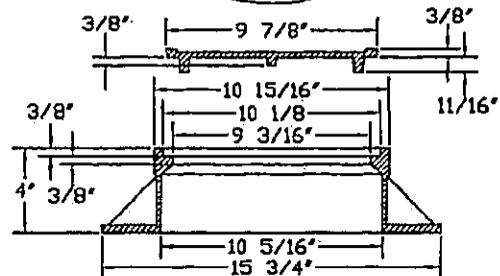
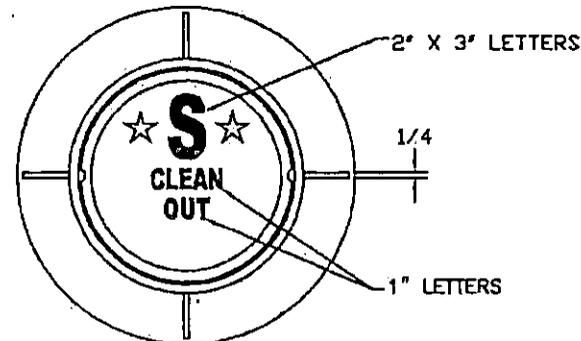
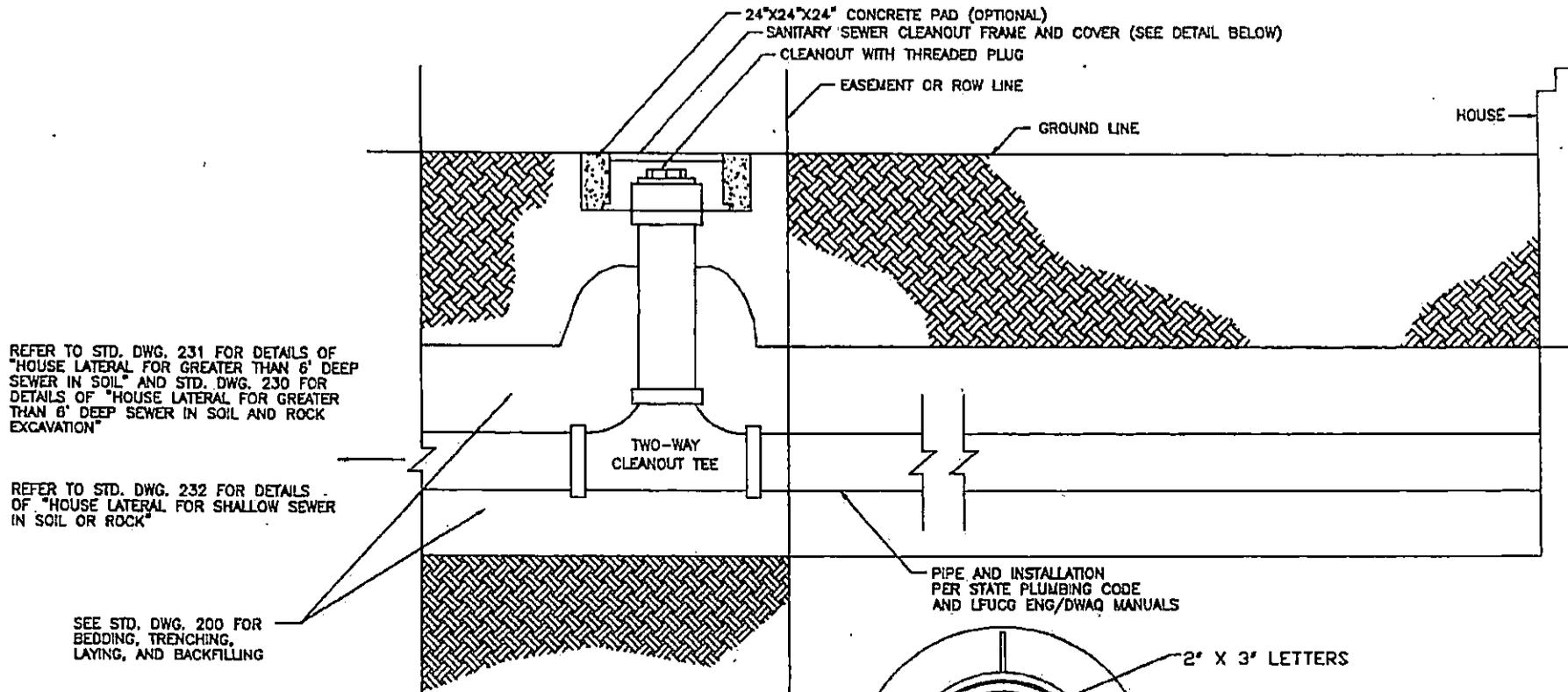
SEWER PIPE FROM HOUSE TO THE LONG SWEEP "L" MUST BE IN ACCORDANCE WITH STATE PLUMBING CODE AND LFUCG ENG/DWAQ MANUALS.

| NO. | DATE | REVISION DESCRIPTION | BY |
|-----|------|----------------------|----|
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| | | | |

DIVISION OF ENGINEERING

LATERAL CLEANOUT IN NON-PAVED AREAS AND YARDS

| | |
|----------------------|--------------------|
| STANDARD DRAWING NO. | 233 |
| APPROVED | <i>[Signature]</i> |
| DATE | 5/1/08 |
| BY | <i>[Signature]</i> |
| DATE | 5/1/08 |



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 |
|---|--------------------|----------------------|--------|
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| | | | |
| | | | |
| DIVISION OF ENGINEERING | | | |
| RIGHT OF WAY OR EASEMENT LATERAL CLEANOUT IN NON-PAVED AREAS AND YARDS | | | |
| STANDARD DRAWING NO. | | | 234 |
| APPROVED | <i>[Signature]</i> | DATE | 5/1/02 |
| LEXINGTON-FAYETTE URBAN COUNTY ENGINEER | | DATE | 5/1/02 |
| COMMISSIONER | | DATE | 5/1/02 |

TECHNICAL SPECIFICATIONS

APPENDIX B – GEOTECHNICAL REPORT

L. E. GREGG ASSOCIATES/GREGG LABORATORIES

1026 East New Circle Road Lexington, Kentucky 40505

(859) 252-7558

FAX:(859) 255-0940

E mail: Legreggassoc@aol.com

WEB: www.legreggassoc.2e.com

Larry W. Snedegar, PE, PG, ACD

James P. Leach, PG

James E. House

September 23, 2002

Mr. Fred Eastridge, PE, PLS
Sherman Carter Barnhart, PSC
2405 Harrodsburg Road
Lexington, Kentucky 40504

Re: Meadows-Northland-Arlington
Street Renewal
Lexington, Kentucky

Dear Mr. Eastridge:

This is our report on the information obtained at the soil auger borings performed within the listed streets. Results of the laboratory analyses are attached for your review.

Bryan Avenue:

Sta. 1+93, 19.4' Rt. C.L.

| | |
|-------------|---|
| 0.0' - 0.8' | Topsoil with gravel. |
| 0.8' - 3.0' | FILL MATERIAL, Light brown to orange brown, damp, high plasticity, stiff Lean CLAY (CL) with sand (crushed aggregate limestone), A-7-6(19). Bag sample obtained. CBR = 1.2% |
| 3.0' - 5.0 | Light brown, damp, high plasticity, stiff Fat CLAY (CH) with thin layers of weathered limestone. |
| 5.0' | Power auger refusal |

Sta.4+04.5, 22.4' RT. C.L.

| | |
|-------------|---|
| 0.0' - 0.7' | Topsoil with gravel. |
| 0.7' - 3.7' | Brown to orange/brown, damp, high plasticity, stiff Lean CLAY (CL) with Sand (phosphate nodules). |
| 3.7' | Power auger refusal. |

Sta.5+77, 19.7' RT. C.L.

| | |
|-------------|--|
| 0.0' - 0.5' | Topsoil with gravel. |
| 0.5' - 1.9' | FILL MATERIAL: Light brown to orange brown, damp, high plasticity, stiff Lean CLAY (CL) with sand (crushed aggregate limestone) |
| 1.9' | Top of unmarked utility pipe. Blue mark 4.7' to right side of boring and yellow mark at 6.0' to left side. No mark by utility companies for pipe encountered at a depth of 1.9'. |

Providing Civil/Geotechnical Engineering • Forensic • Geological • Materials Testing Services
Since 1957

Sta. 5+77, 21.5' RT. C.L.

| | |
|-------------|--|
| 0.5' - 2.0' | FILL MATERIAL: Light yellowish brown, damp, medium plasticity, stiff Clayey GRAVEL with Sand (GC), A-6(1). bag sample obtained. CBR = 1.1% |
| 2.0' - 3.7' | Light brown, damp, high plasticity, stiff Fat CLAY (CH) with thin layers of weathered limestone. |
| 3.7' | Power auger refusal. |

Sta. 9+08, 23.9' RT. C.L.

| | |
|-------------|--|
| 0.0' - 0.5' | Topsoil with gravel and glass. |
| 0.5' - 2.2' | FILL MATERIAL: Light yellowish brown, damp, medium plasticity, medium Clayey GRAVEL with Sand (GC) and glass fragments. |
| 2.2' - 5.8' | Brown to yellow/brown, damp, medium plasticity, stiff sandy (phosphate nodules) SILT (ML), A-7-6(14). Bag sample obtained. CBR = 1.8% |
| 5.8' - 6.8' | Light brown to yellow/brown, damp, high plasticity, medium Elastic SILT (MH) with weathered chert fragments. |
| 6.2' | Static water level. |
| 6.8' | Power auger refusal |

Carlisle Avenue:Sta. 1+41.5, 9.3' RT. C.L.

| | |
|-------------|---|
| 0.0' - 0.5' | Asphalt. |
| 0.5' - 1.0' | Crushed aggregate. |
| 1.0' - 6.5' | Light brown/tan, gray mottled, damp, very high plasticity, stiff Elastic SILT (MH) with phosphate nodules, A-7-5(40). Bag sample obtained. CBR = 1.6% |
| 6.5' - 7.4' | Weathered Limestone. |
| 7.4' | Power auger refusal. |

Sta. 3+91.6, 9.4' RT. C.L.

| | |
|-------------|--|
| 0.0' - 0.4' | Asphalt |
| 0.4' - 0.9' | Crushed aggregate. |
| 0.9' - 1.7' | Brown to light brown, damp, high plasticity, medium SILT (ML) with phosphate nodules. |
| 1.7' - 7.8' | Light brown/tan, gray mottled, damp, very high plasticity, stiff Elastic SILT (MH) with phosphate nodules. |
| 7.8' | Power auger refusal. |

Sta. 6+72.5, 9.4' RT. C.L.

| | |
|---------------|--|
| 0.0' - 0.4' | Asphalt |
| 0.4' - 0.9' | Crushed aggregate. |
| 0.9' - 3.9' | Brown to light brown, damp, medium plasticity, medium Lean CLAY (CL) with Sand (Phosphate nodules), A-7-6(14). Bag sample obtained. CBR = 4.1% |
| 3.9' - 11.0' | Brown to light brown, gray mottled, damp, high plasticity, stiff Elastic SILT (MH) with Sand (weathered chert fragments). |
| 11.0' - 11.8' | Weathered Limestone |
| 11.8' | Power auger refusal. |

Sta.9+19.8, 9.4' LT. C.L.

| | |
|-------------|---|
| 0.0' - 0.4' | Asphalt |
| 0.4' - 0.9' | Crushed aggregate. |
| 0.9' - 5.4' | Brown to light brown, gray mottled, damp, high plasticity, stiff Elastic SILT (MH) with Sand (weathered chert fragments). |
| 5.4' | Power auger refusal. |

Sta.11+73.2, 9.5' LT. C.L.

| | |
|-------------|--|
| 0.0' - 0.4' | Asphalt |
| 0.4' - 1.2' | Crushed aggregate. |
| 1.2' - 5.8' | Light brown, gray mottled, damp, high plasticity, stiff, Sandy (weathered chert fragments) Elastic SILT (MH), A-7-5(18). Bag sample obtained. CBR = 1.8% |
| 5.8' | Power auger refusal. |

Locust Avenue:Sta.1+34, 10.2' RT. C.L.

| | |
|-------------|--|
| 0.0' - 0.4' | Asphalt |
| 0.4' - 1.1' | Crushed aggregate. |
| 1.1' - 3.5' | Brown to orange/brown, damp, very high plasticity, stiff Fat CLAY (CH) with Sand (phosphate nodules), A-7-5(43). Bag sample obtained. CBR = 2.1% |
| 3.5' | Power auger refusal. |

Sta.3+72.5, 9.2' RT. C.L.

| | |
|-------------|---|
| 0.0' - 0.4' | Asphalt |
| 0.4' - 0.8' | Crushed aggregate. |
| 0.8' - 5.0' | Brown to orange/brown, damp, very high plasticity, stiff Fat CLAY (CH) with Sand (phosphate nodules). |
| 5.0' | Power auger refusal. |

Sta.6+16.7, 9.4' RT. C.L.

| | |
|-------------|--|
| 0.0' - 0.3' | Asphalt |
| 0.3' - 1.1' | Crushed aggregate intermixed with clay. |
| 1.1' - 5.9' | Brown/tan, gray mottled, damp, high plasticity, stiff, Sandy (weathered chert fragments) Elastic SILT (MH), A-7-5(12). Bag sample obtained. CBR = 4.0% |
| 5.9' | Power auger refusal. |

Sta.9+12.5, 10.3' RT. C.L.

| | |
|-------------|--|
| 0.0' - 0.3' | Asphalt |
| 0.3' - 0.8' | Crushed aggregate. |
| 0.8' - 5.8' | Reddish brown to dark brown, damp, high plasticity, stiff Fat CLAY (CH) with Sand (phosphate nodules). |
| 5.8' | Power auger refusal. |

Sta.12+11, 9.3' RT. C.L.

| | |
|-------------|---------|
| 0.0' - 0.4' | Asphalt |
|-------------|---------|

Geotechnical Investigation**Street Renewal**

| | |
|-------------|---|
| 0.4' - 0.9' | Crushed aggregate intermixed with clay. |
| 0.9' - 4.6' | Reddish brown to dark brown, damp, high plasticity, stiff Fat CLAY (CH) with Sand (phosphate nodules), A-7-6(28). Bag sample obtained. CBR = 1.2% |
| 4.6' | Power auger refusal. |

Oak Hill Drive:**Sta.1+85, 6.6' RT. C.L.,**

| | |
|-------------|--|
| 0.0' - 0.6' | Asphalt |
| 0.6' - 0.8' | Crushed aggregate intermixed with clay. |
| 0.8' - 3.7' | Dark brown, damp, slight plasticity, medium SILT (ML), A-4(7). Bag sample obtained. CBR = 3.5% |
| 3.7' - 6.3' | Reddish brown to dark brown, damp, high plasticity, stiff Fat CLAY (CH) with Sand (phosphate nodules). |
| 6.3' - 9.6' | Brown to light brown, damp, high plasticity, stiff Fat CLAY (CH) with Sand. |
| 9.6' | Power auger refusal. |

Sta.4+37, 7.5' RT. C.L.,

| | |
|-------------|--|
| 0.0 - 0.2' | Asphalt |
| 0.2' - 0.6' | Concrete |
| 0.6' - 3.4' | Dark brown, damp, slight plasticity, medium SILT (ML). |
| 3.4' - 3.8' | Brown to light brown, damp, high plasticity, stiff Fat CLAY (CH) with thin limestone layers. |
| 3.8' | Power auger refusal |

Sta.6+61.3, 8.8' RT. C.L.,

| | |
|-------------|--|
| 0.0' - 0.2' | Asphalt |
| 0.2' - 0.6' | Concrete |
| 0.6' - 8.8' | Reddish brown to dark brown, damp, high plasticity, stiff Fat CLAY (CH) with Sand (phosphate nodules). |
| 8.8' | Power auger refusal. |

Sta.9+33, 8.3' RT. C.L.,

| | |
|-------------|--|
| 0.0' - 0.3' | Asphalt |
| 0.3' - 1.1' | Crushed aggregate. |
| 1.1' - 3.8' | Medium brown/orange brown, damp, very high plasticity, stiff Fat CLAY (CH) with Sand (phosphate nodules), A-7-6(25). Bag sample obtained. CBR = 1.8% |
| 3.8' | Power auger refusal. |

Sta.12+10.3, 7.3' RT. C.L.,

| | |
|-------------|---|
| 0.0' - 0.4' | Asphalt |
| 0.4' - 0.8' | Crushed aggregate with clay intermixed. |
| 0.8' - 1.6' | Reddish brown to dark brown, damp, high plasticity, stiff Fat CLAY (CH) with Sand (phosphate nodules). |
| 1.6' - 2.9' | Medium brown/orange brown, damp, very high plasticity, stiff Fat CLAY (CH) with Sand (phosphate nodules). |

Geotechnical Investigation**Street Renewal**

2.9' - 4.7' Brown to light brown, damp, high plasticity, stiff Fat CLAY (CH) with thin limestone layers
 4.7' Power auger refusal

Sta.14+52.8, 6 RT. C.L.

0.0' - 0.7' Asphalt
 0.7' - 1.2' Crushed aggregate intermixed with clay.
 1.2' - 2.2' Light brown to dark brown, damp, medium plasticity, medium Sandy (weathered chert fragments) and phosphate nodules) Lean CLAY (CL), A-6(5). Bag sample obtained. **CBR = 3.4%**
 2.2' - 6.2' Brown to reddish brown, damp, high plasticity, stiff Fat CLAY (CH) with Sand (weathered chert fragments), A-7-6(23). Bag sample obtained. **CBR = 1.6%**
 6.2' Power auger refusal.

Park View Avenue:**Sta.0+99.7, 14.3' RT. C.L.**

0.0' - 0.5' Concrete
 0.5' - 0.7' Crushed aggregate
 0.7' - 5.2' Light brown to orange brown, damp, high plasticity, stiff Fat CLAY (CH) with Sand (phosphate nodules), A-7-6(30). Bag sample obtained. **CBR = 1.1%**
 5.2' Power auger refusal.

Sta.2+63, 13' RT. C.L.

0.0' - 0.6' Concrete
 0.6' - 0.9' Crushed aggregate.
 0.9' - 2.1' Light brown to orange brown, damp, high plasticity, stiff Fat CLAY (CH) with Sand (phosphate nodules).
 2.1' Power auger refusal.

Sta.4+58.2, 13.2' RT. C.L.

0.0' - 0.5' Asphalt
 0.5' - 0.9' Crushed aggregate
 0.9' - 3.7' Brown to yellow/brown, damp, high plasticity, stiff Fat CLAY (CH) with Sand (phosphate nodules), A-7-6(24). Bag sample obtained. **CBR = 0.7%**
 3.7' - 4.9' Brown to light brown, damp, high plasticity, stiff Fat CLAY (CH) with thin layers of weathered Limestone.
 4.9' Power auger refusal.

Sta.7+03.7, 13.5' RT. C.L.

0.0' - 0.4' Concrete
 0.4' - 0.7' Crushed aggregate.
 0.7' - 2.5' Brown to yellow/brown, damp, high plasticity, stiff Fat CLAY (CH) with Sand (phosphate nodules).
 2.5' - 3.5' Brown to dark brown, damp, high plasticity, medium, Lean CLAY (CL) with sand (phosphate).
 3.5' - 10.4' Brown to light brown, damp, high plasticity, stiff Fat CLAY (CH) with

10.4' Sand (weathered chert fragments).
Power auger refusal.

Sta.9+74, 12.4' RT. C.L.

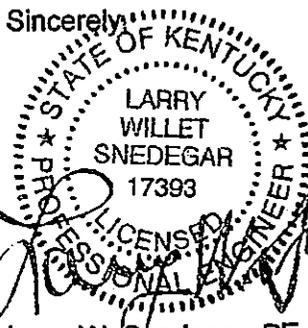
0.0' - 0.4' Concrete
0.4' - 0.6' Crushed aggregate.
0.6' - 7.2' Brown to yellow/brown, damp, high plasticity, stiff Fat CLAY (CH) with Sand (phosphate nodules).
7.2' Power auger refusal.

Sta.12+89.6, 9.5' RT. C.L.

0.0' - 0.5' Asphalt
0.5' - 0.7' Crushed aggregate.
0.7' - 4.5' FILL MATERIAL: Brown to dark brown, damp, high plasticity, medium Sandy Lean CLAY (CL) with Gravel (crushed aggregate limestone and brick fragments), A-7-6(10). Bag sample obtained. CBR = 3.2%
4.5' - 6.8' Brown to dark brown, damp, high plasticity, medium, Lean CLAY (CL) with sand (phosphate).
6.8' - 10.4' Brown to yellow/brown, damp, high plasticity, stiff Fat CLAY (CH) with Sand (phosphate nodules).
10.4' - 11.5' Brown to light brown, damp, high plasticity, stiff Fat CLAY (CH) with thin layers of weathered Limestone.
11.5' Power auger refusal.

If you have any questions concerning this information, please contact me.

Sincerely,


Larry W. Shedegar
9/23/02

Larry W. Shedegar, PE, PG, ACD
President
L. E. Gregg Associates, Inc.

c: File 2095

COMPACTION TEST REPORT

Curve No.: 9

Date: 9-21-02

Project No.: 2095

Project: MEADOWS-NORTHLAND-ARLINGTON
NEIGHBORHOOD IMPROVEMENT PROJECT

Location: PHASE 5

Elev./Depth: 0.8'-3.0'

Remarks: BRYAN AVE. STA.1+93, 19.4' RT. C.L.,
LAB #13902

MATERIAL DESCRIPTION

Description: LIGHT BROWN/GRAY/ORANGE BROWN, DAMP, HIGH PLASTICITY, STIFF LEAN CLAY (CL) WITH SAND (CRUSHED AGGREGATE LIMESTONE), A-7-6(19).

Classifications -

USCS: CL

AASHTO: A-7-6(19)

Nat. Moist. = 18.6 %

Sp.G. = 2.77

Liquid Limit = 49

Plasticity Index = 29

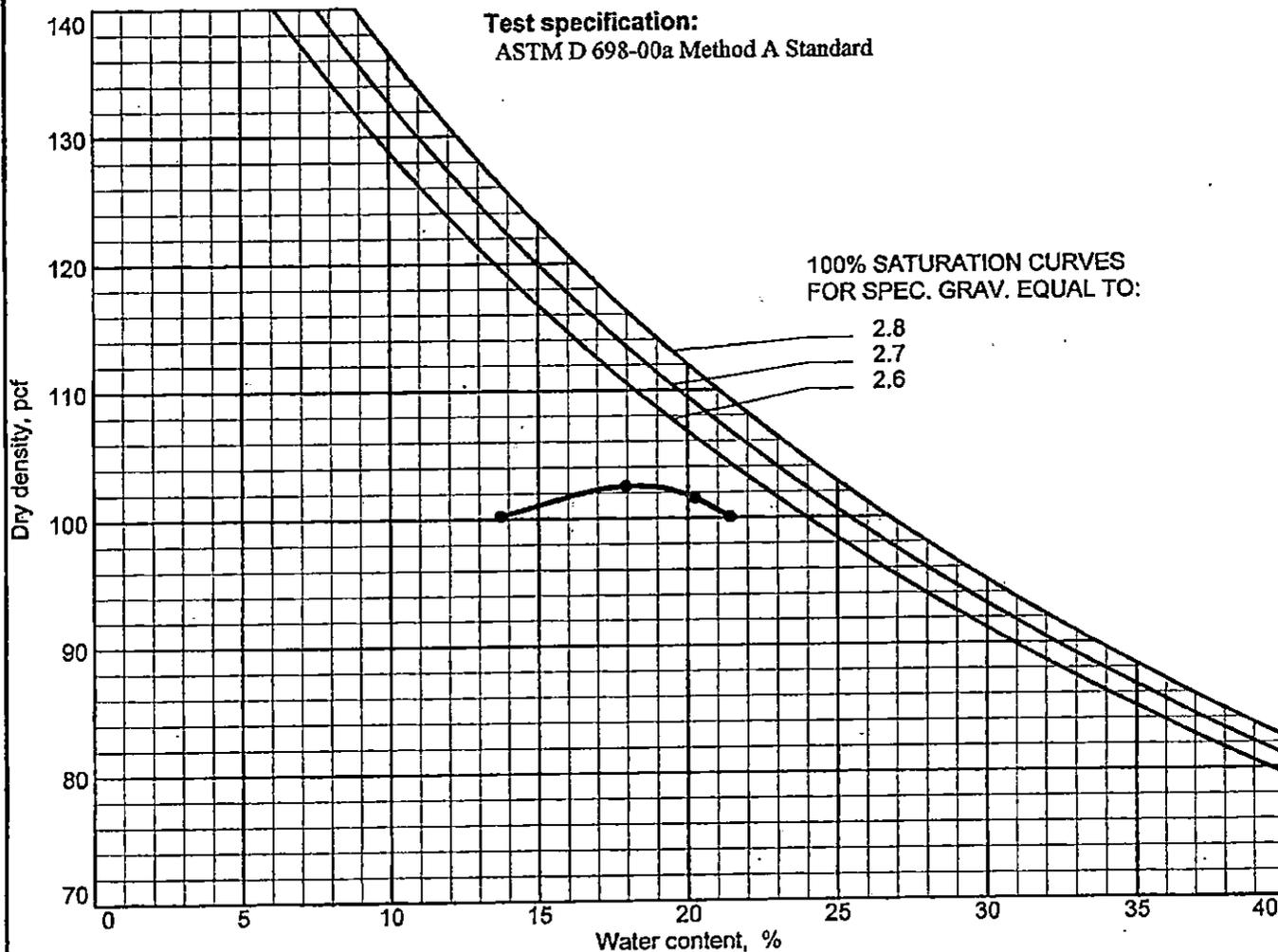
% > No.4 = 9.1 %

% < No.200 = 70.6 %

TEST RESULTS

Maximum dry density = 102.5 pcf

Optimum moisture = 18.5 %



Plate

GREGG LABORATORIES, INC.

COMPACTION TEST REPORT

Curve No.: 7

Date: 9-21-02

Project No.: 2095

Project: MEADOWS-NORTHLAND-ARLINGTON
NEIGHBORHOOD IMPROVEMENT PROJECT

Location: PHASE 5

Elev./Depth: 2.2'-5.2'

Remarks: BRYAN AVE., STA.9+08, 23.9' RT. C.L.
LAB #13900

MATERIAL DESCRIPTION

Description: BROWN TO YELLOW/BROWN, DAMP, MEDIUM PLASTICITY, STIFF, SANDY. (PHOSPHATE NODULES)
SILT (ML), A-7-6(14).

Classifications -

USCS: ML

AASHTO: A-7-6(14)

Nat. Moist. = 29.7 %

Sp.G. = 2.68

Liquid Limit = 48

Plasticity Index = 20

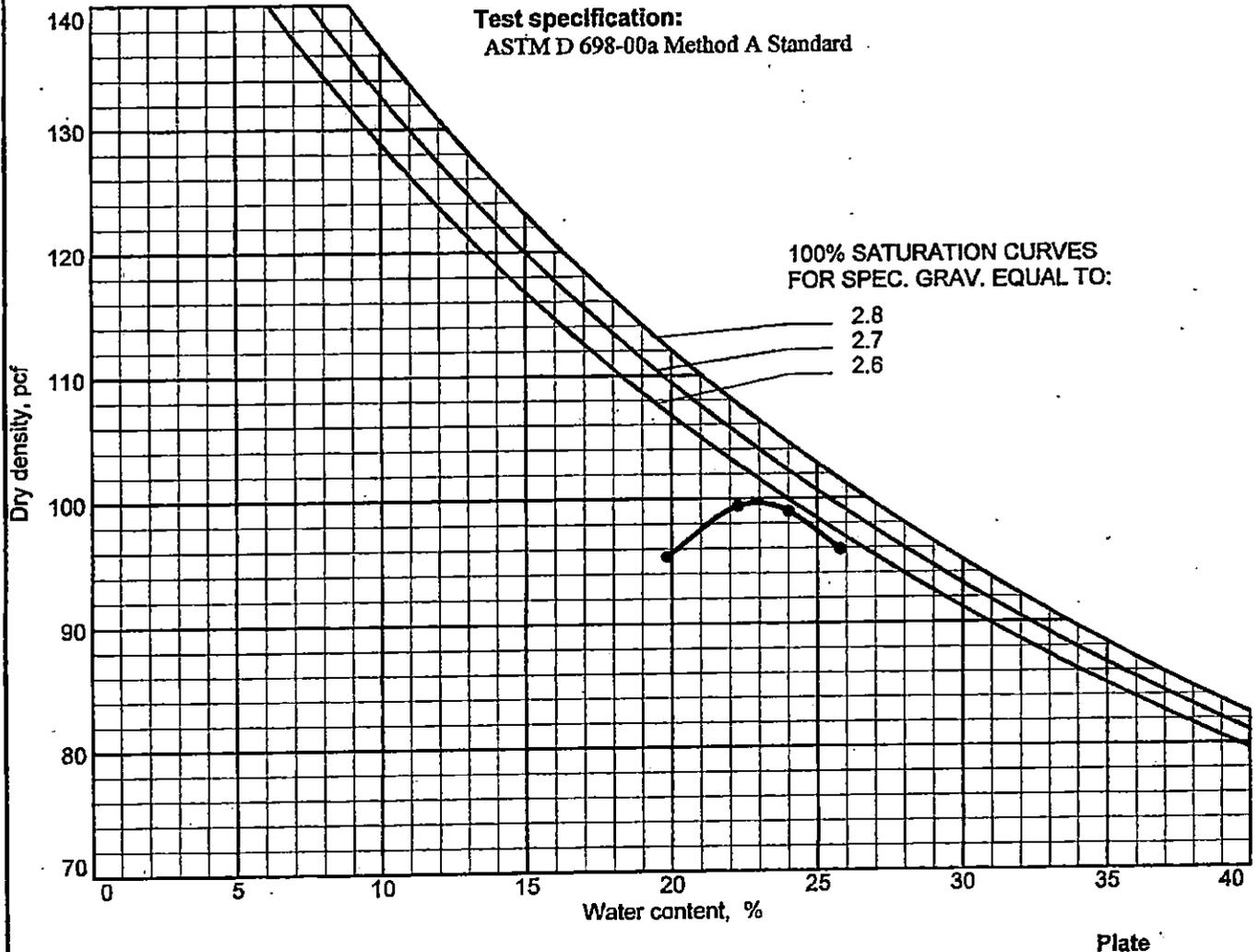
% > No.4 = 6.4 %

% < No.200 = 69.2 %

TEST RESULTS

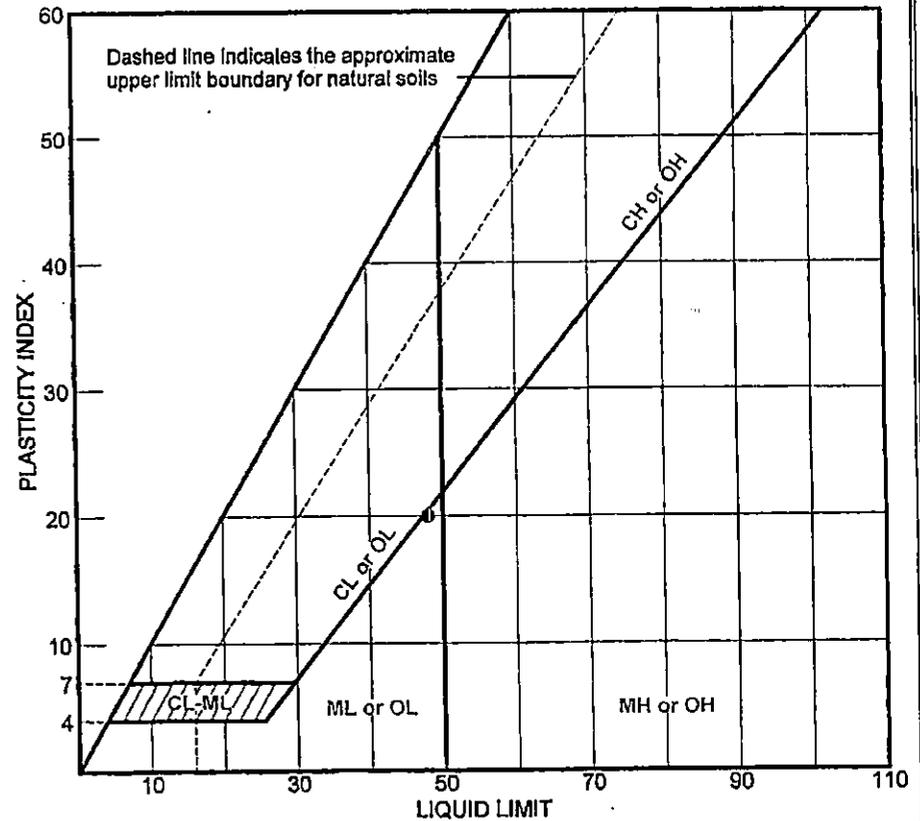
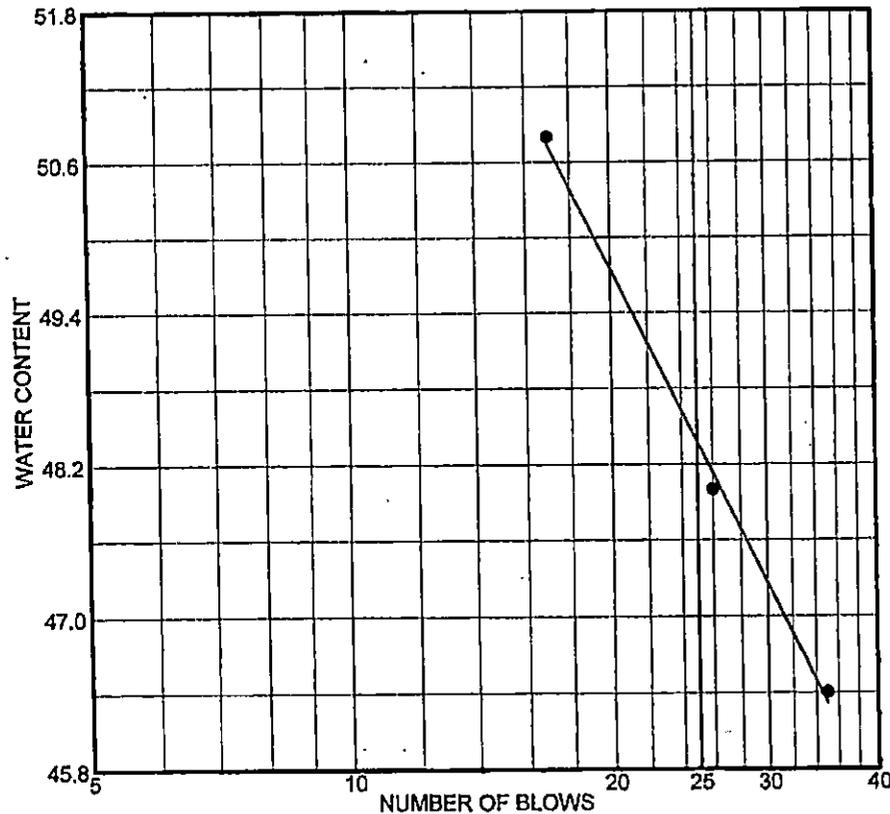
Maximum dry density = 99.5 pcf

Optimum moisture = 23 %



GREGG LABORATORIES, INC.

LIQUID AND PLASTIC LIMITS TEST REPORT



| SOURCE | SAMPLE # | DEPTH/ELEV. | DATE SAMPLED | USCS | MATERIAL DESCRIPTION | NM % | LL | PI |
|--|----------|-------------|--------------|------|---|------|----|----|
| ● BRYAN AVE. STA.9+08, 23.9' RT. C.L. | 13890 | 2.2'-5.2' | 8-22-02 | ML | BROWN TO YELLOW/BROWN, DAMP, MEDIUM PLASTICIT, STIFF, SANDY (PHOSPHATE NODULES) SILT (ML), A-7-6(14). | 29.7 | 48 | 20 |
| | | | | | | | | |

Client **SHERMAN CARTER BARNHART, PSC**
 Project **MEADOWS-NORTHLAND-ARLINGTON**
NEIGHBORHOOD IMPROVEMENT PROJECT
 Project No. 2095 Plate

GREGG
LABORATORIES, INC.

● BRYAN AVE. STA.9+08, 23.9' RT. C.L.
LAB #13900

COMPACTION TEST REPORT

Curve No.: 15

Date: 9-21-02

Project No.: 2095

Project: MEADOWS-NORTHLAND-ARLINGTON
NEIGHBORHOOD IMPROVEMENT PROJECT

Location: PHASE 5

Elev./Depth: 1.0'-6.5'

Remarks: CARLISLE AVE. STA.1+41.5, 9.3' RT. C.L.
LAB #13908

MATERIAL DESCRIPTION

Description: LIGHT BROWN/TAN, GRAY MOTTLED, DAMP, VERY HIGH PLASTICITY, STIFF ELASTIC SILT (MH)
WITH PHOSPHATE NODULES, A-7-5(40).

Classifications -

USCS: MH

AASHTO: A-7-5(40)

Nat. Moist. = 27.0 %

Sp.G. = 2.72

Liquid Limit = 71

Plasticity Index = 37

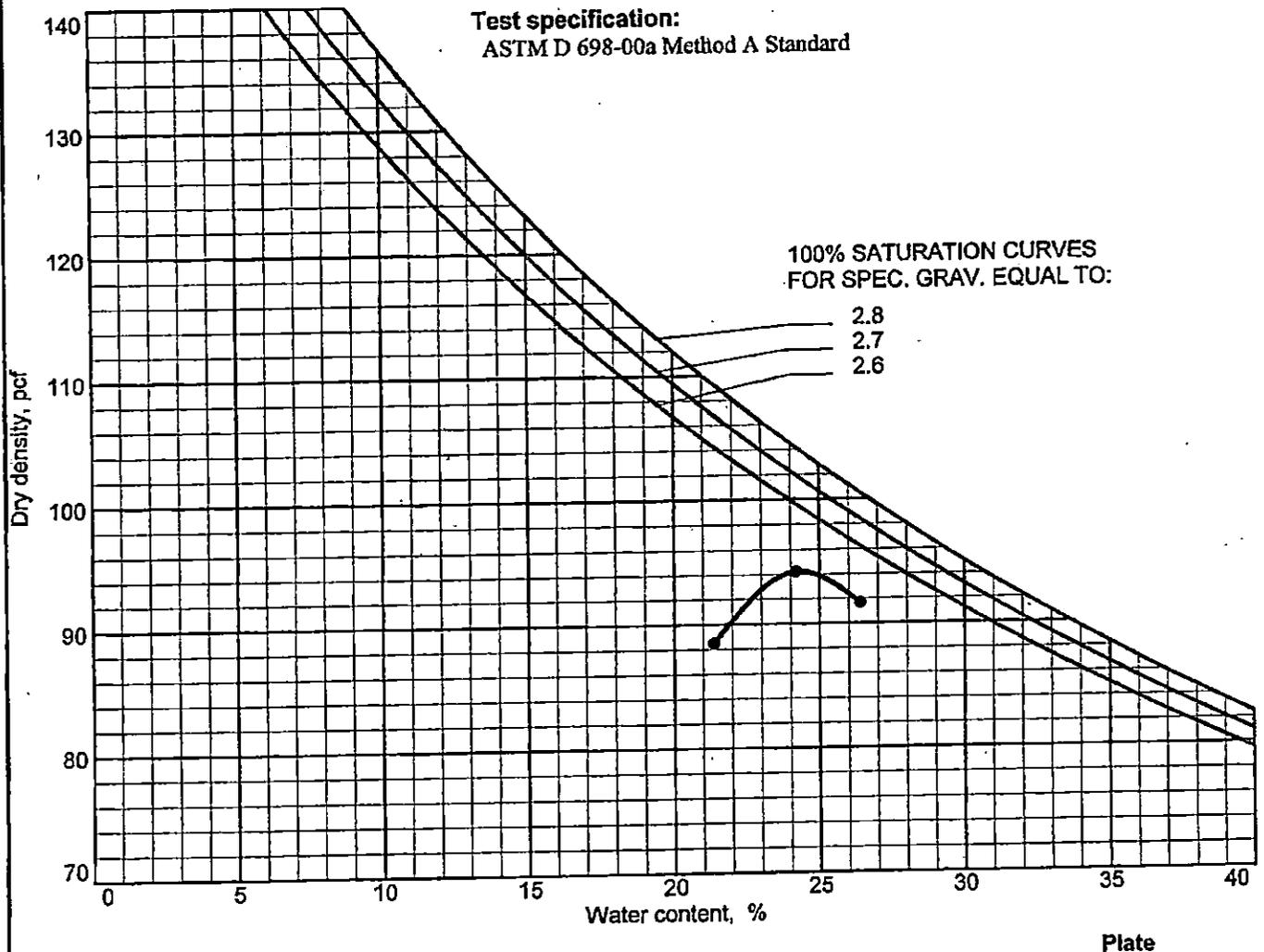
% > No.4 = 0.0 %

% < No.200 = 89.9 %

TEST RESULTS

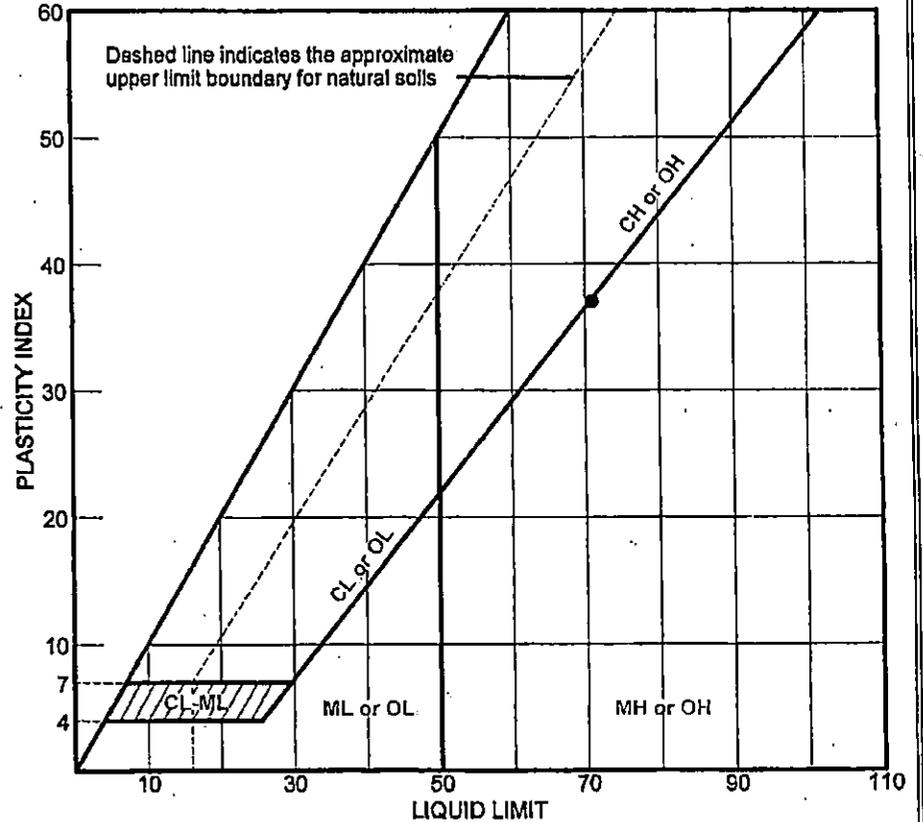
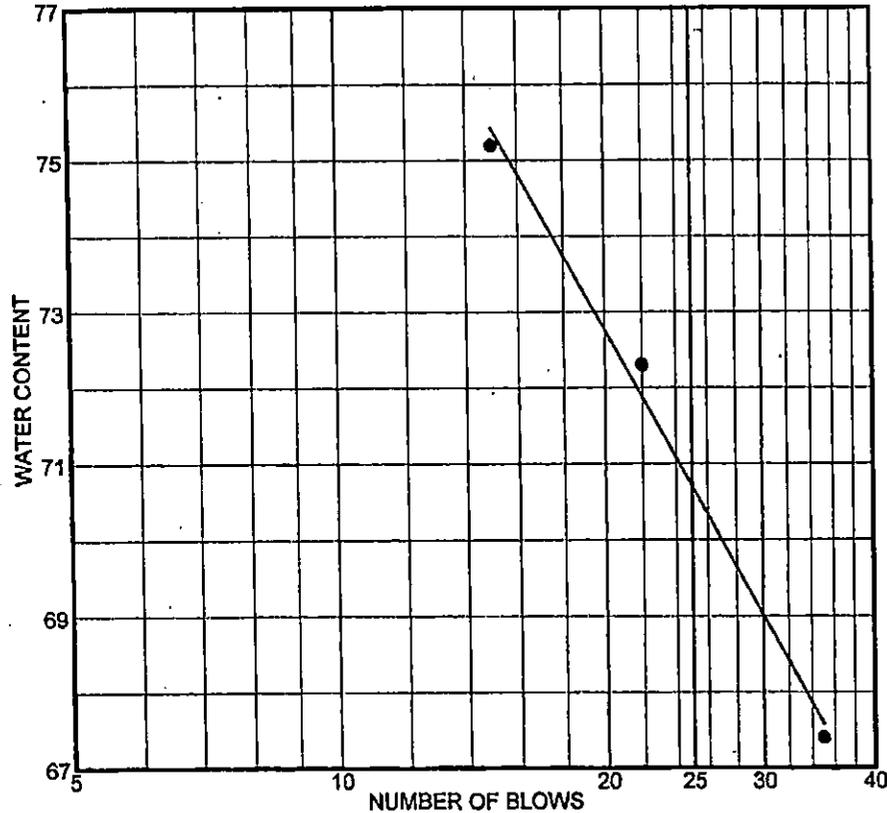
Maximum dry density = 94 pcf

Optimum moisture = 24.5 %



GREGG LABORATORIES, INC.

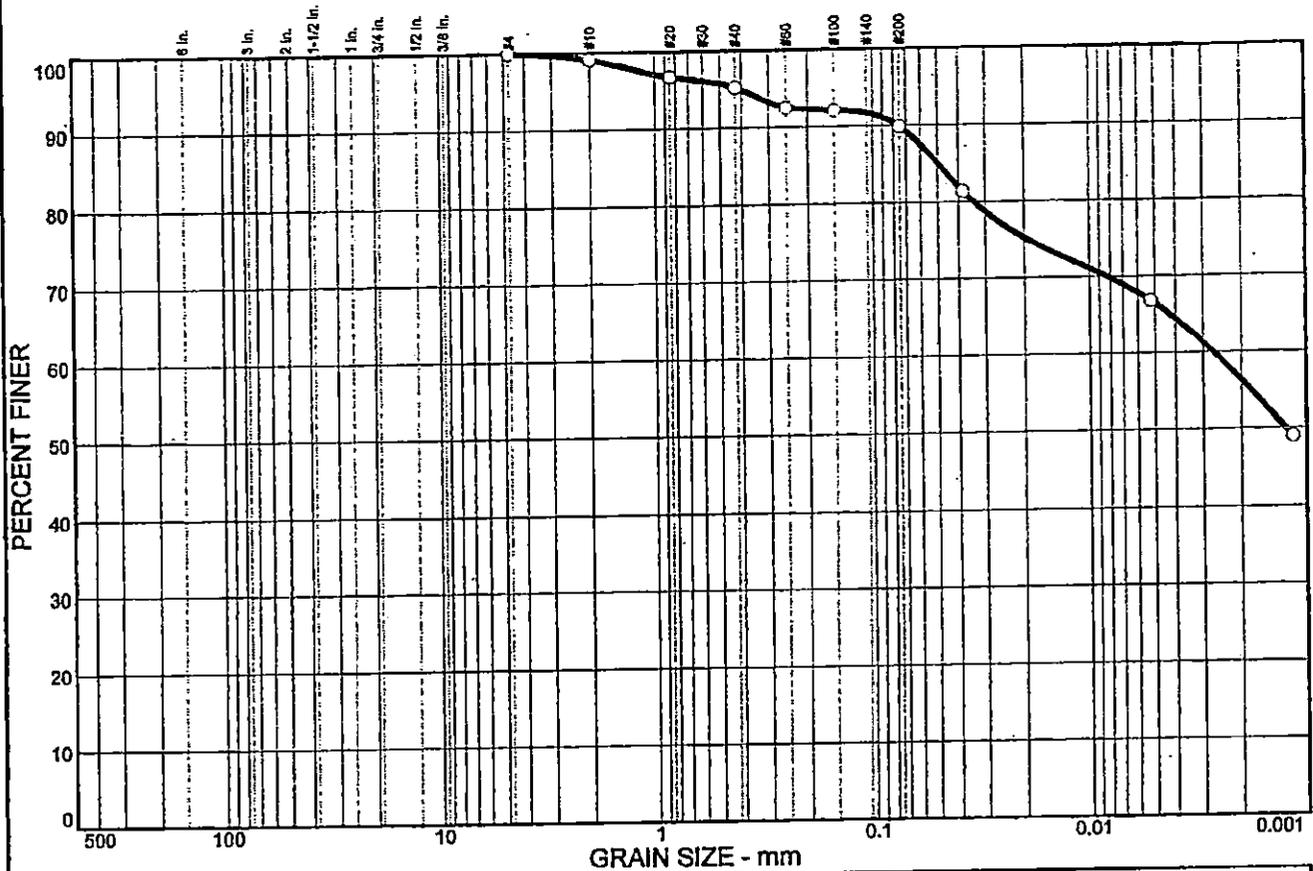
LIQUID AND PLASTIC LIMITS TEST REPORT



| SOURCE | SAMPLE # | DEPTH/ELEV. | DATE SAMPLED | USCS | MATERIAL DESCRIPTION | NM % | LL | PI |
|---|----------|-------------|--------------|------|---|------|----|----|
| ● CARLISLE AVE. STA. 1+41.5, 9.3' RT. C.L. | 13908 | 1.0'-6.5' | 8-21-02 | MH | LIGHT BROWN/TAN, GRAY MOTTLED, DAMP, VERY HIGH PLASTICITY, STIFF ELASTIC SILT (MH) WITH PHOSPHATE NODULES, A-7-5(40). | 27.0 | 71 | 37 |
| | | | | | | | | |

| | | |
|---|-------------------------------------|--|
| Client SHERMAN CARTER BARNHART, PSC | GREGG LABORATORIES, INC. | ● CARLISLE AVE. STA. 1+41.5, 9.3' RT. C.L. LAB #13908 |
| Project MEADOWS-NORTHLAND-ARLINGTON | | |
| NEIGHBORHOOD IMPROVEMENT PROJECT | | |
| Project No. 2095 Plate | | |

Particle Size Distribution Report



| % + 3" | % GRAVEL | | % SAND | | | % FINES | |
|--------|----------|------|--------|--------|------|---------|------|
| | CRS. | FINE | CRS. | MEDIUM | FINE | SILT | CLAY |
| 0.0 | 0.0 | 0.0 | 0.9 | 3.9 | 5.3 | 23.5 | 66.4 |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|------------|---------------|----------------|--------------|
| #4 | 100.0 | | |
| #10 | 99.1 | | |
| #20 | 96.7 | | |
| #40 | 95.2 | | |
| #60 | 92.5 | | |
| #100 | 92.1 | | |
| #200 | 89.9 | | |

Soil Description

LIGHT BROWN/TAN, GRAY MOTTLED, DAMP, VERY HIGH PLASTICITY, STIFF ELASTIC SILT (MH) WITH PHOSPHATE NODULES, A-7-5(40).

Atterberg Limits

PL= 34 LL= 71 PI= 37

Coefficients

D₈₅= 0.0497 D₆₀= 0.0027 D₅₀= 0.0012
 D₃₀= D₁₅= D₁₀=
 C_u= C_c=

Classification

USCS= MH AASHTO= A-7-5(40)

Remarks

CARLISLE AVE. STA.4+41.5, 9.3' RT. C.L.
 LAB #13908
 F.M.=0.08

* (no specification provided)

Sample No.: 13908
 Location:

Source of Sample: CARLISLE AVE. STA.1+41.5, 9.3' RT. C.L. Date: 8-21-02
 Elev./Depth: 1.0'-6.5'

GREGG
 LABORATORIES, INC.

Client: SHERMAN CARTER BARNHART, PSC
 Project: MEADOWS-NORTHLAND-ARLINGTON
 NEIGHBORHOOD IMPROVEMENT PROJECT
 Project No: 2095 Plate

COMPACTION TEST REPORT

Curve No.: 14

Date: 9-21-02

Project No.: 2095

Project: MEADOWS-NORTHLAND-ARLINGTON
NEIGHBORHOOD IMPROVEMENT PROJECT

Location: PHASE 5

Elev./Depth: 0.9'-3.9'

Remarks: CARLISLE AVE. STA.6+72.5, 9.4' RT. C.L.
LAB #13907

MATERIAL DESCRIPTION

Description: BROWN TO LIGHT BROWN, DAMP, MEDIUM PLASTICITY, MEDIUM LEAN CLAY (CL) WITH SAND (PHOSPHATE NODULES), A-7-6(14).

Classifications -

USCS: CL

AASHTO: A-7-6(14)

Nat. Moist = 21.5 %

Sp.G. = 2.71

Liquid Limit = 42

Plasticity Index = 18

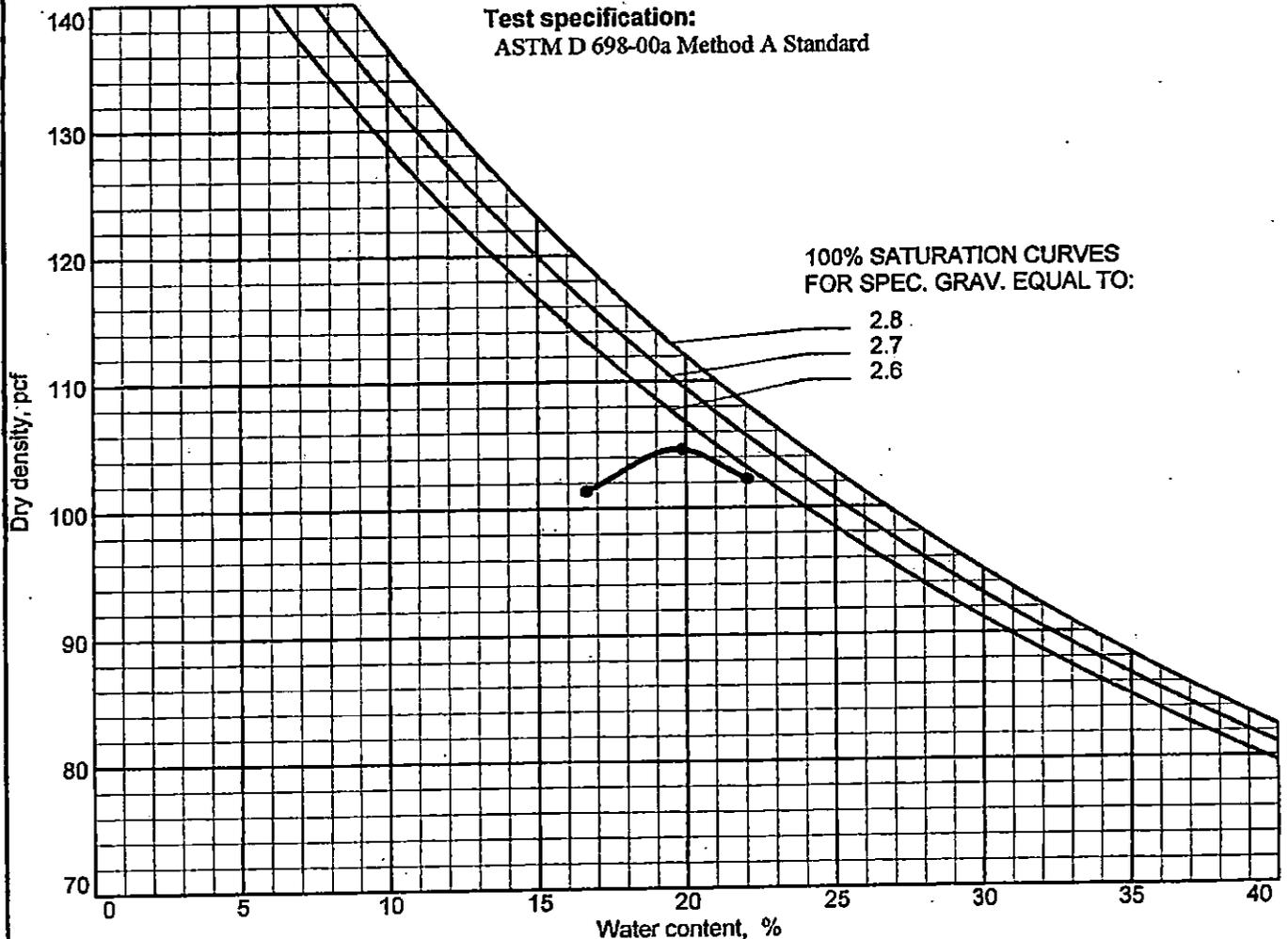
% > No.4 = 0.5 %

% < No.200 = 77.7 %

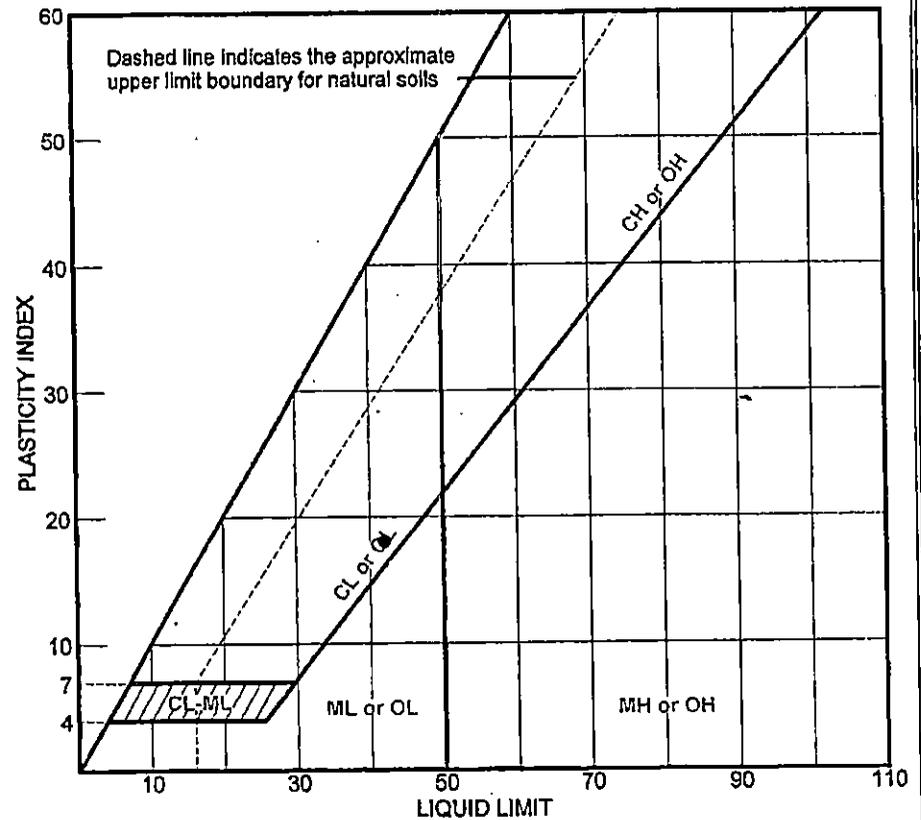
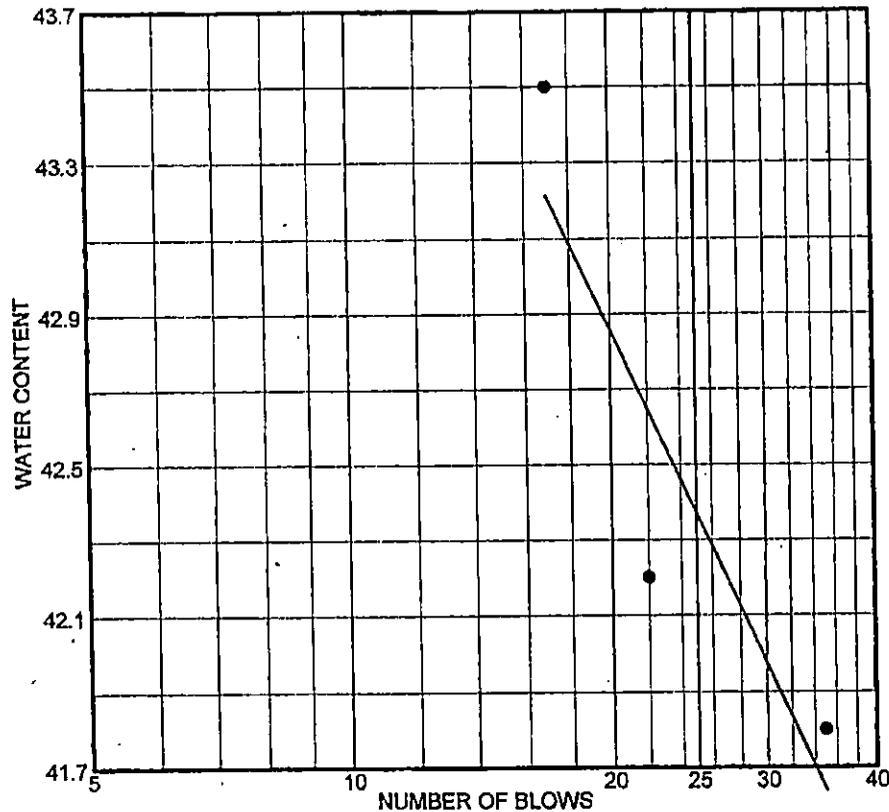
TEST RESULTS

Maximum dry density = 104.5 pcf

Optimum moisture = 19.5 %



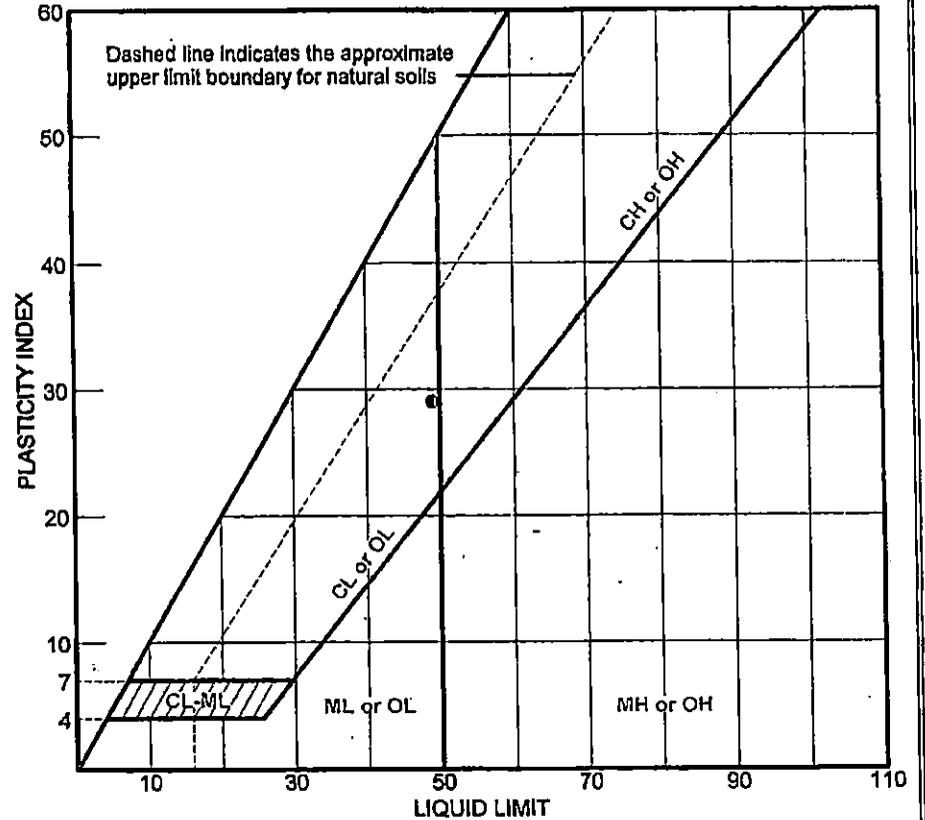
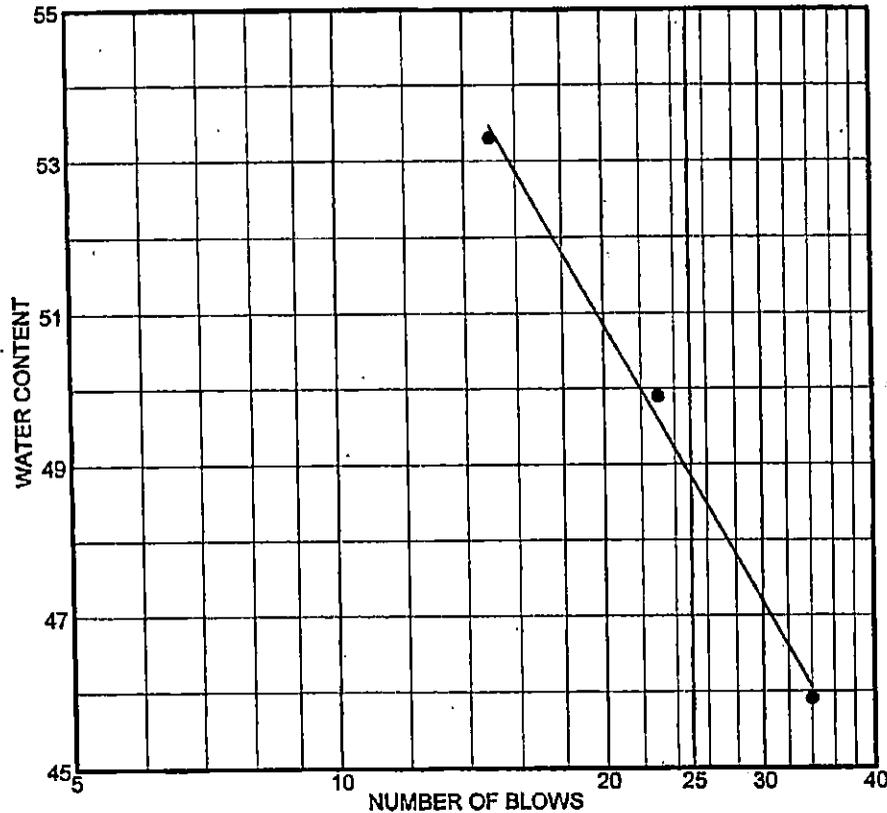
LIQUID AND PLASTIC LIMITS TEST REPORT



| SOURCE | SAMPLE # | DEPTH/ELEV. | DATE SAMPLED | USCS | MATERIAL DESCRIPTION | NM % | LL | PI |
|---|----------|-------------|--------------|------|--|------|----|----|
| • CARLISLE AVE. STA. 6+72.5, 9.4' RT. C.L. | 13907 | 0.9'-3.9' | 8-21-02 | CL | BROWN TO LIGHT BROWN, DAMP, MEDIUM PLASTICITY, MEDIUM LEAN CLAY (CL) WITH SAND (PHOSPHATE NODULES), A-7-6(14). | 21.5 | 42 | 18 |
| | | | | | | | | |

| | | |
|---|-------------------------------------|--|
| Client SHERMAN CARTER BARNHART, PSC | GREGG LABORATORIES, INC. | • CARLISLE AVE. STA. 6+72.5, 9.4' RT. C.L. LAB #13907 |
| Project MEADOWS-NORTHLAND-ARLINGTON | | |
| NEIGHBORHOOD IMPROVEMENT PROJECT | | |
| Project No. 2095 Plate | | |

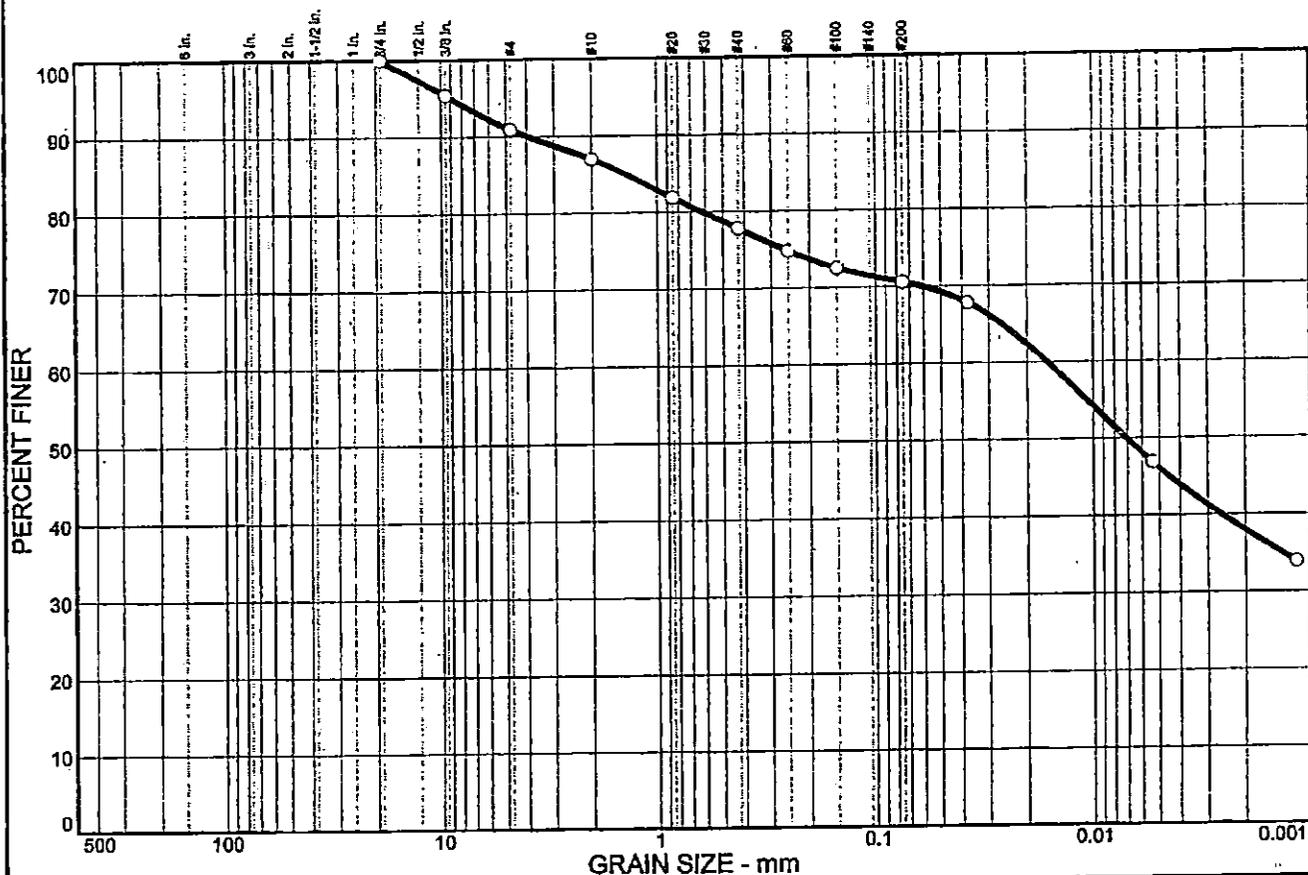
LIQUID AND PLASTIC LIMITS TEST REPORT



| SOURCE | SAMPLE # | DEPTH/ELEV. | DATE SAMPLED | USCS | MATERIAL DESCRIPTION | NM % | LL | PI |
|--|----------|-------------|--------------|------|--|------|----|----|
| ● BRYAN AVE., STA.1+93, 19.4' RT. C.L. | 13902 | 0.8'-3.0' | 8-22-02 | CL | LIGHT BROWN/GRAY/ORANGE BROWN, DAMP, HIGH PLASTICITY, STIFF LEAN CLAY (CL) WITH SAND (CRUSHED AGGREGATE LIMESTONE), A-7-6(19). | 18.6 | 49 | 29 |
| | | | | | | | | |

| | | |
|-------------------------------------|-------------------------------------|--|
| Client SHERMAN CARTER BARNHART, PSC | GREGG LABORATORIES, INC. | ● BRYAN AVE, STA.1+93 19.4' RT. C.L. LAB #13902 |
| Project MEADOWS-NORTHLAND-ARLINGTON | | |
| NEIGHBORHOOD IMPROVEMENT PROJECT | | |
| Project No. 2095 Plate | | |

Particle Size Distribution Report



| % + 3" | % GRAVEL | | % SAND | | | % FINES | |
|--------|----------|------|--------|--------|------|---------|------|
| | CRS. | FINE | CRS. | MEDIUM | FINE | SILT | CLAY |
| 0.0 | 0.0 | 9.1 | 3.9 | 9.2 | 7.2 | 24.4 | 46.2 |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|------------|---------------|----------------|--------------|
| .75 in. | 100.0 | | |
| .375 in. | 95.4 | | |
| #4 | 90.9 | | |
| #10 | 87.0 | | |
| #20 | 81.9 | | |
| #40 | 77.8 | | |
| #60 | 74.8 | | |
| #100 | 72.5 | | |
| #200 | 70.6 | | |

Soil Description

LIGHT BROWN/GRAY/ORANGE BROWN, DAMP, HIGH PLASTICITY, STIFF LEAN CLAY (CL) WITH SAND (CRUSHED AGGREGATE LIMESTONE), A-7-6(19).

Atterberg Limits

PL= 20 LL= 49 PI= 29

Coefficients

D₈₅= 1.40 D₆₀= 0.0162 D₅₀= 0.0070
D₃₀= D₁₅= D₁₀=
C_u= C_c=

Classification

USCS= CL AASHTO= A-7-6(19)

Remarks

BRYAN AVE. STA.1+93, 19.4' RT. C.L.
LAB #13902
F.M.=0.41

(no specification provided)

Sample No.: 13902
Location:

Source of Sample: BRYAN AVE., STA.1+93, 19.4' RT. C.L. Date: 8-22-02
Elev./Depth: 0.8'-3.0'

GREGG

LABORATORIES, INC.

Client: SHERMAN CARTER BARNHART, PSC
Project: MEADOWS-NORTHLAND-ARLINGTON
NEIGHBORHOOD IMPROVEMENT PROJECT
Project No: 2095 Plate

COMPACTION TEST REPORT

Curve No.: 8

Date: 9-21-02

Project No.: 2095

Project: MEADOWS-NORTHLAND-ARLINGTON
NEIGHBORHOOD IMPROVEMENT PROJECT

Location: PHASE 5

Elev./Depth: 0.5'-2.0'

Remarks: BRYAN AVE. STA. 5+77, 19.7' RT. C.L.
LAB #13901

MATERIAL DESCRIPTION

Description: LIGHT YELLOWISH BROWN, DAMP, MEDIUM PLASTICITY, STIFF CLAYEY GRAVEL WITH SAND (GC), A-6(1).

Classifications -

USCS: GC

AASHTO: A-6(1)

Nat. Moist. = 8.6 %

Sp.G. = 2.71

Liquid Limit = 34

Plasticity Index = 13

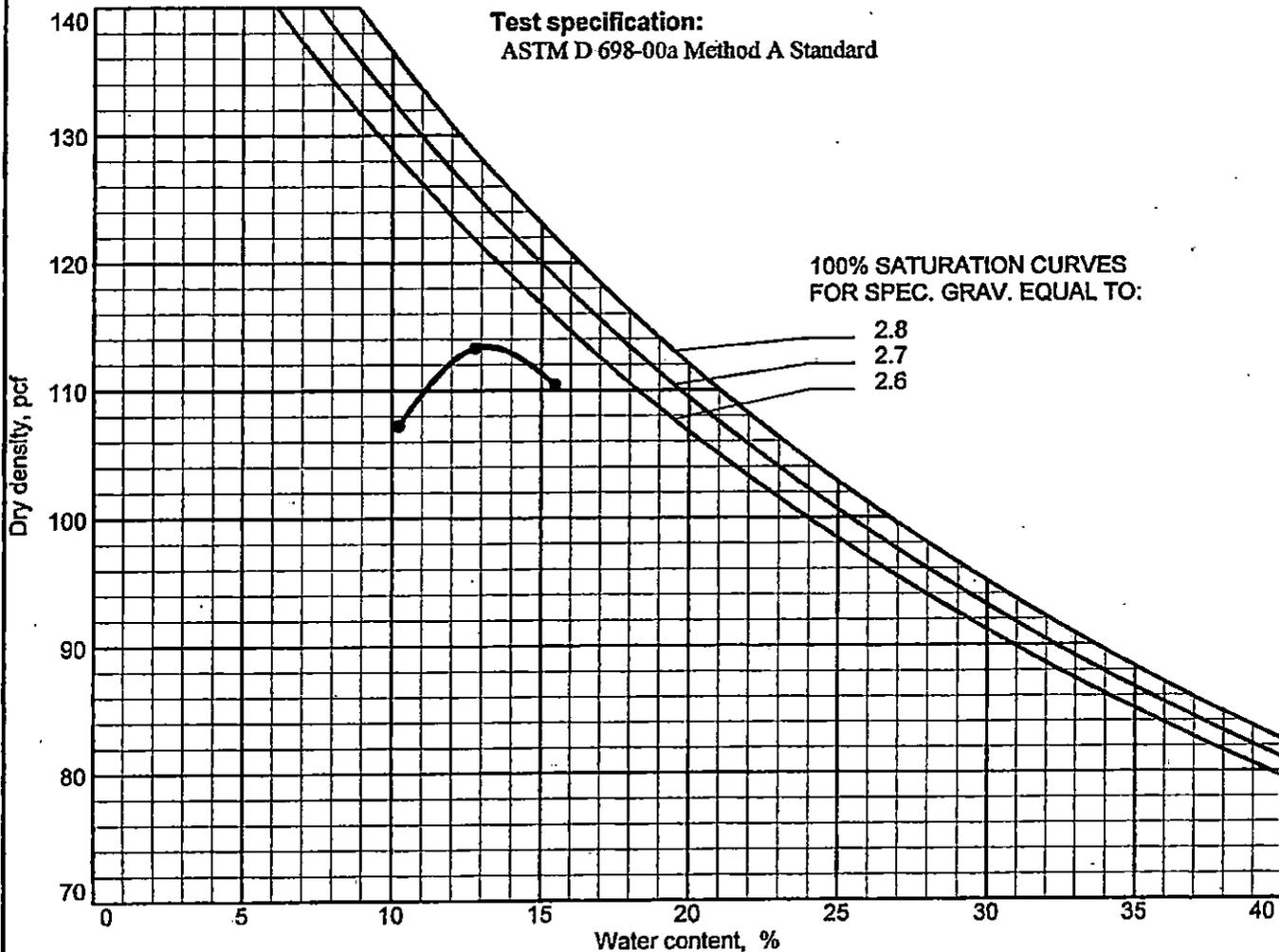
% > No. 4 = 47.2 %

% < No. 200 = 35.7 %

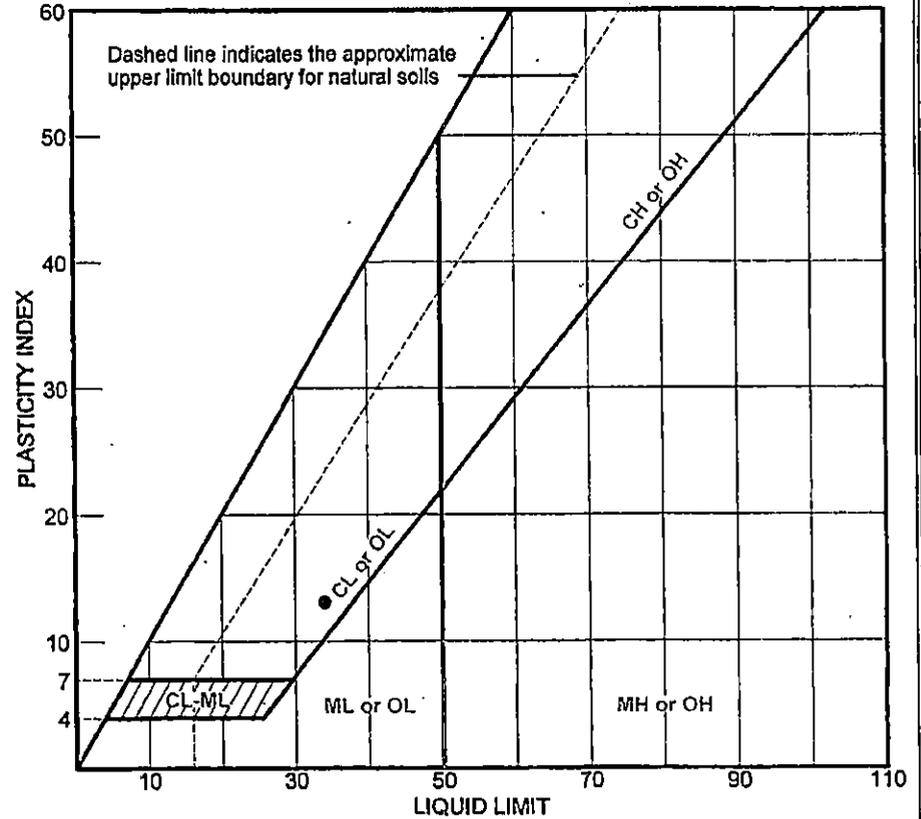
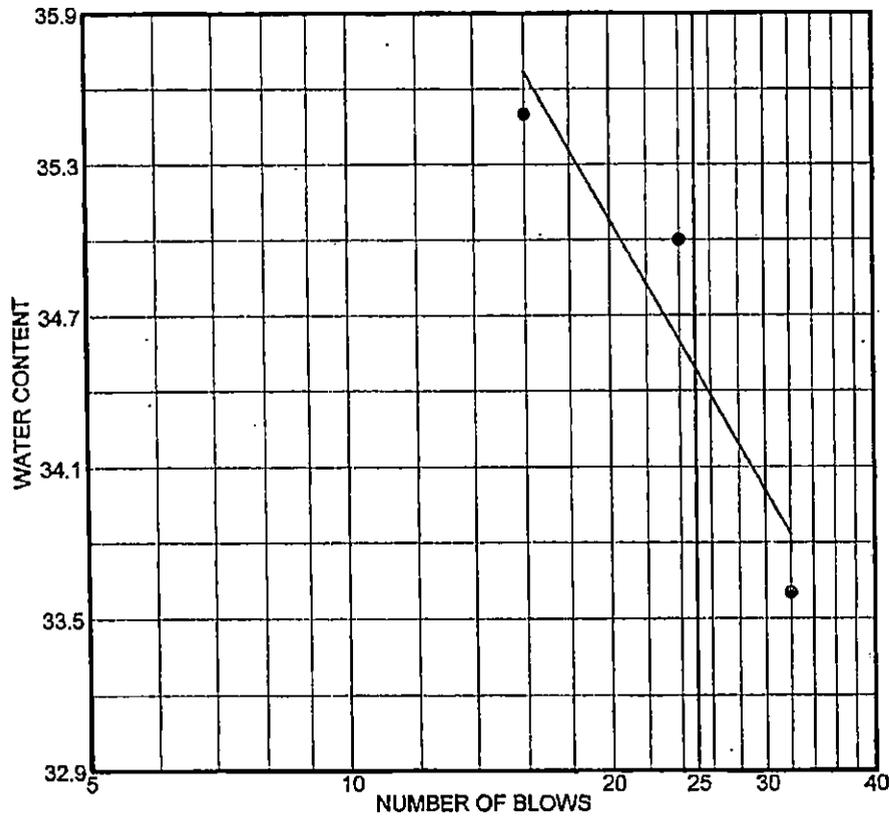
TEST RESULTS

Maximum dry density = 113.5 pcf

Optimum moisture = 13 %



LIQUID AND PLASTIC LIMITS TEST REPORT



| SOURCE | SAMPLE # | DEPTH/ELEV. | DATE SAMPLED | USCS | MATERIAL DESCRIPTION | NM % | LL | PI |
|---|----------|-------------|--------------|------|---|------|----|----|
| ● BRYAN AVE., STA.5+77, 19.7' RT. C.L. | 13901 | 0.5'-2.0' | 8-22-02 | GC | LIGHT YELLOWISH BROWN, DAMP, MEDIUM PLASTICITY, STIFF CLAYEY GRAVEL WITH SAND (GC), A-6(1). | 8.6 | 34 | 13 |
| | | | | | | | | |
| | | | | | | | | |

| | | |
|--|--|--|
| Client SHERMAN CARTER BARNHART, PSC Project MEADOWS-NORTHLAND-ARLINGTON NEIGHBORHOOD IMPROVEMENT PROJECT Project No. 2095 | <h2 style="margin: 0;">GREGG LABORATORIES, INC.</h2> | ● BRYAN AVE., STA.5+77, 19.7' RT. C.L. LAB #13901 |
|--|--|--|

COMPACTION TEST REPORT

Curve No.: 13

Date: 9-21-02

Project No.: 2095

Project: MEADOWS-NORTHLAND-ARLINGTON
NEIGHBORHOOD IMPROVEMENT PROJECT

Location: PHASE 5

Elev./Depth: 1.2'-5.5'

Remarks: CARLISLE AVE. STA.11+73.2, 9.5' LT. C.L.
LAB #13906

MATERIAL DESCRIPTION

Description: LIGHT BROWN, GRAY MOTTLED, DAMP, HIGH PLASTICITY, STIFF, SANDY (WEATHERED CHERT FRAGMENTS) ELASTIC SILT (MH), A-7-5(18):

Classifications -

USCS: MH

AASHTO: A-7-5(18)

Nat. Moist. = 26.8 %

Sp.G. = 2.78

Liquid Limit = 59

Plasticity Index = 26

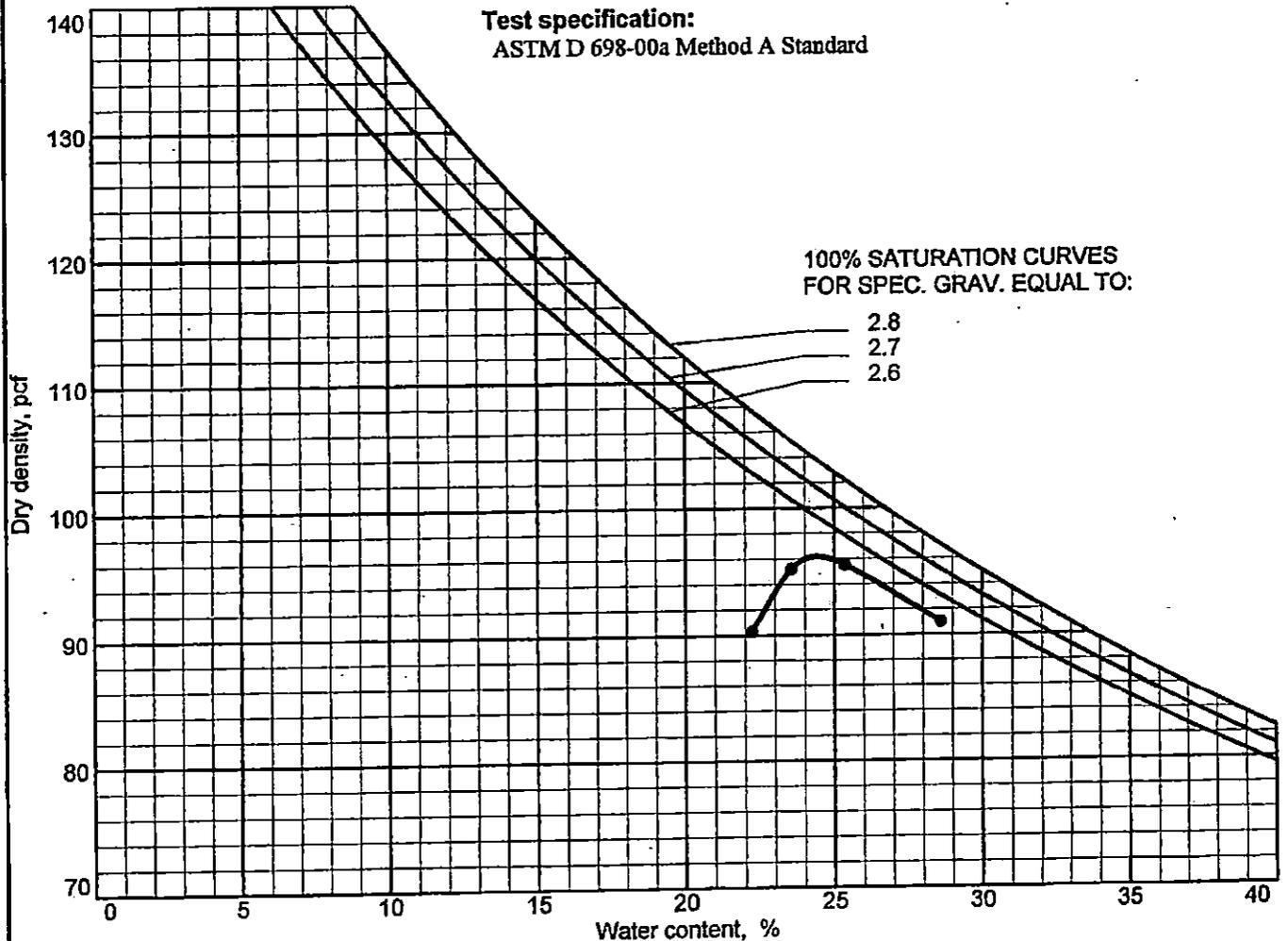
% > No.4 = 0.6 %

% < No.200 = 67.4 %

TEST RESULTS

Maximum dry density = 96 pcf

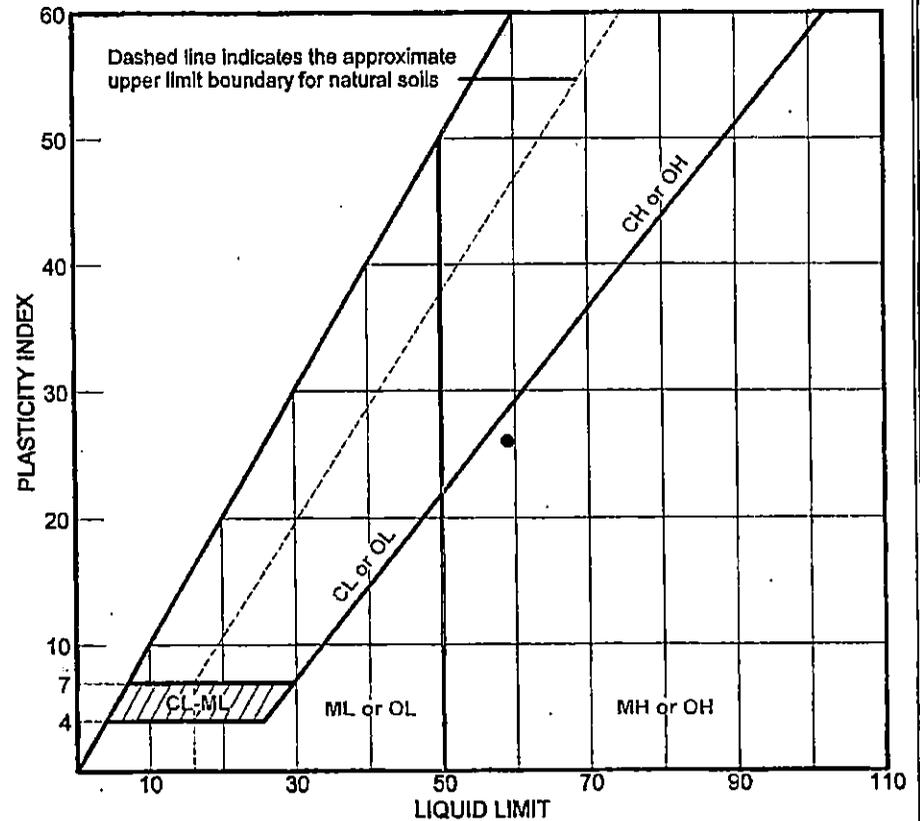
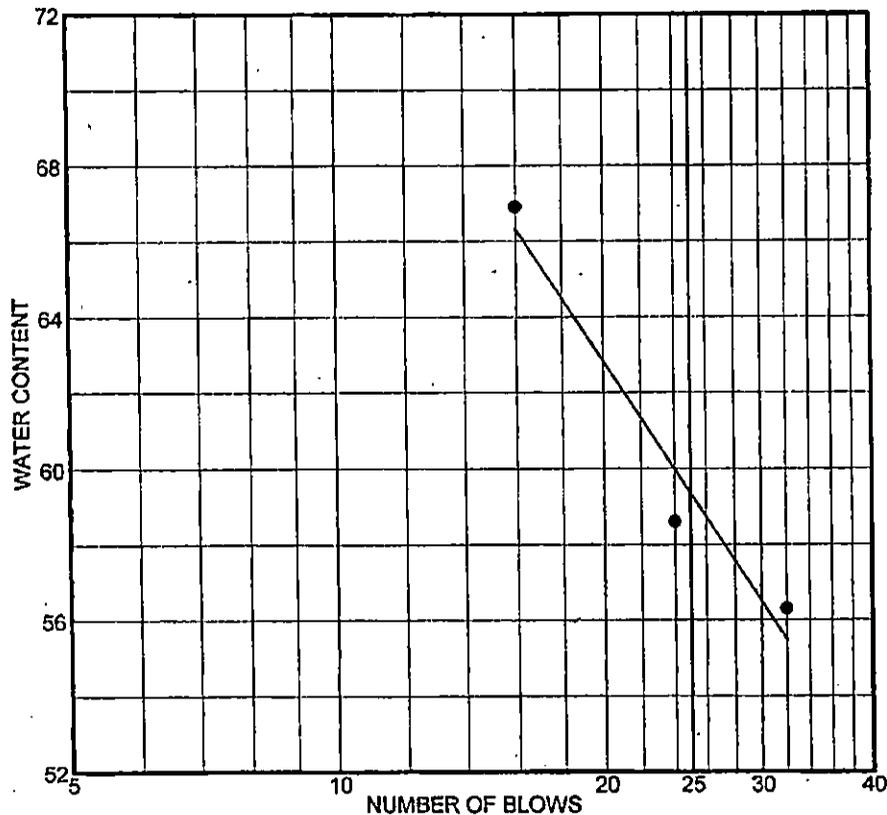
Optimum moisture = 24.5 %



Plate

GREGG LABORATORIES, INC.

LIQUID AND PLASTIC LIMITS TEST REPORT



| SOURCE | SAMPLE # | DEPTH/ELEV. | DATE SAMPLED | USCS | MATERIAL DESCRIPTION | NM % | LL | PI |
|--|----------|-------------|--------------|------|--|------|----|----|
| ● CARLISLE AVE. STA.11+73.2, 9.5' LT. C.L. | 13906 | 1.2'-5.5' | 8-21-02 | MH | LIGHT BROWN, GRAY MOTTLED, DAMP, HIGH PLASTICITY, STIFF, SANDY (WEATHERED CHERT FRAGMENTS) ELASTIC SILT (MH), A-7-5(18). | 26.8 | 59 | 26 |
| | | | | | | | | |

Client SHERMAN CARTER BARNHART, PSC
 Project MEADOWS-NORTHLAND-ARLINGTON
 NEIGHBORHOOD IMPROVEMENT PROJECT
 Project No. 2095

**GREGG
 LABORATORIES, INC.**

● CARLISLE AVE. STA.11+73.2, 9.5' LT. C.L.
 LAB #13906

COMPACTION TEST REPORT

Curve No.: 6

Project No.: 2095

Date: 9-21-02

Project: MEADOWS-NORTHLAND-ARLINGTON
NEIGHBORHOOD IMPROVEMENT PROJECT

Location: PHASE 5

Elev./Depth: 1.1'-3.5'

Remarks: LOCUST AVE., STA. 1+34, 10.2' RT. C.L.
LAB #13888

MATERIAL DESCRIPTION

Description: BROWN TO ORANGE/BROWN, DAMP, VERY HIGH PLASTICITY, STIFF FAT CLAY (CH) WITH SAND (PHOSPHATE NODULES), A-7-5(43).

Classifications -

USCS: CH

AASHTO: A-7-5(43)

Nat. Moist = 35.1 %

Sp.G. = 2.78

Liquid Limit = 80

Plasticity Index = 48

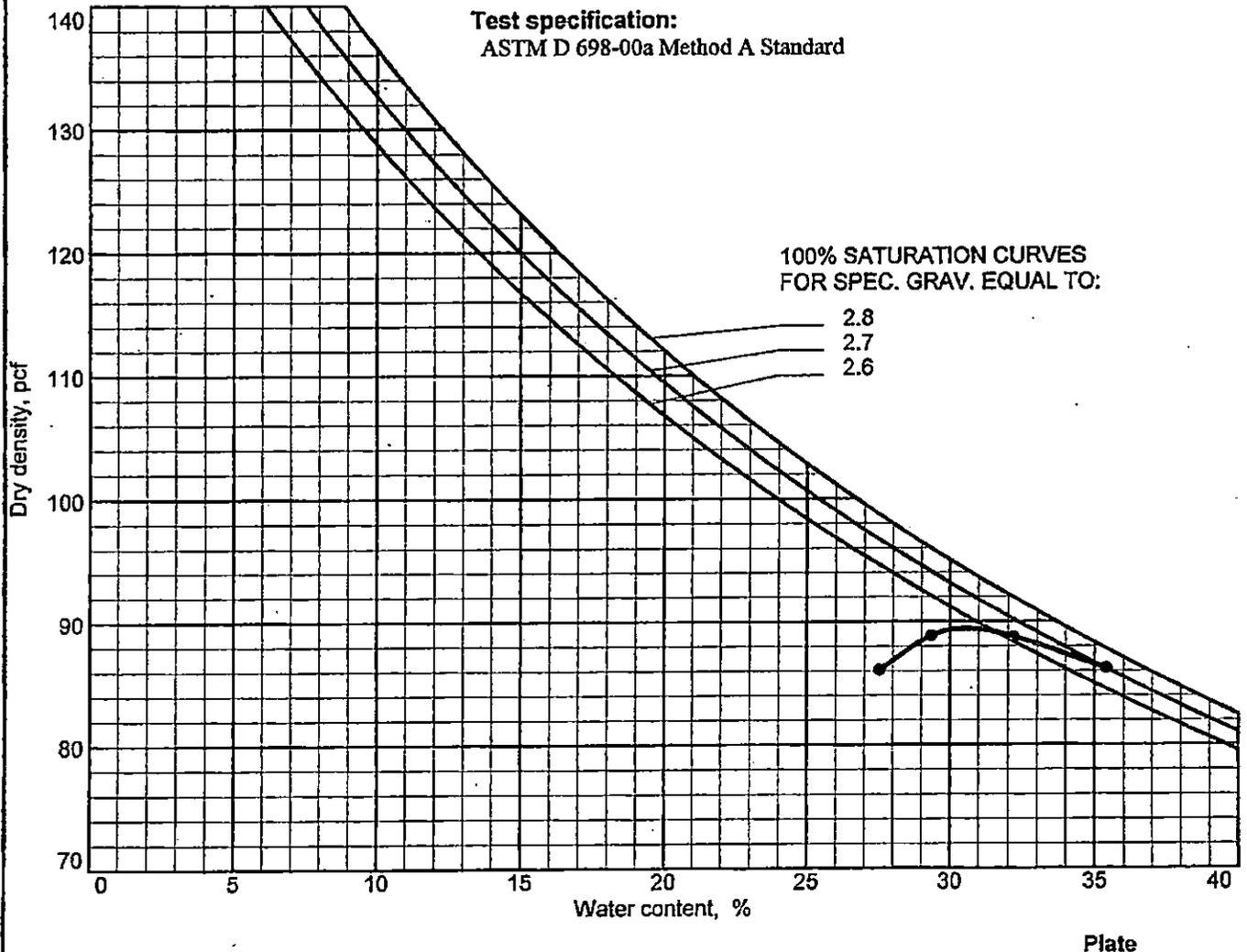
% > No.4 = 0.0 %

% < No.200 = 79.6 %

TEST RESULTS

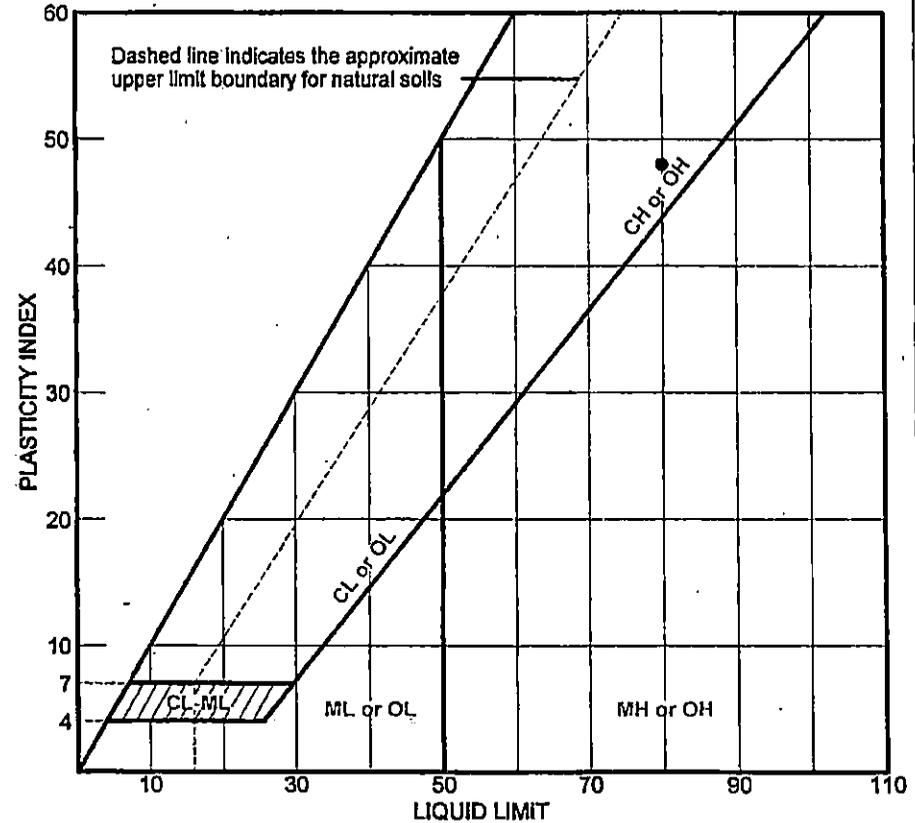
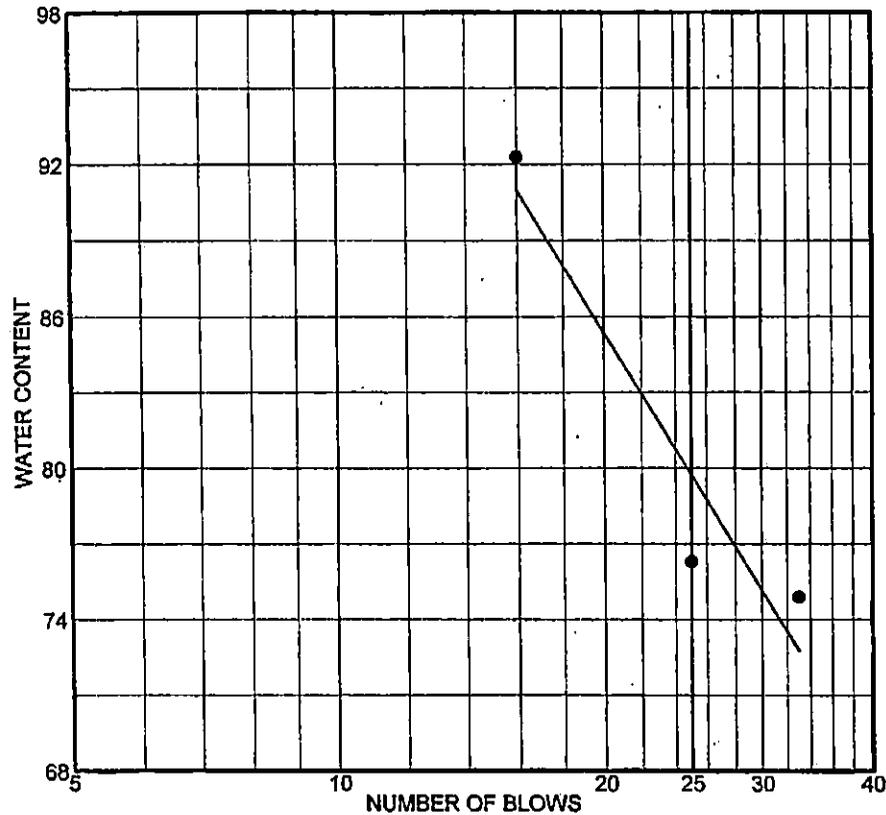
Maximum dry density = 89.5 pcf

Optimum moisture = 30.5 %



GREGG LABORATORIES, INC.

LIQUID AND PLASTIC LIMITS TEST REPORT



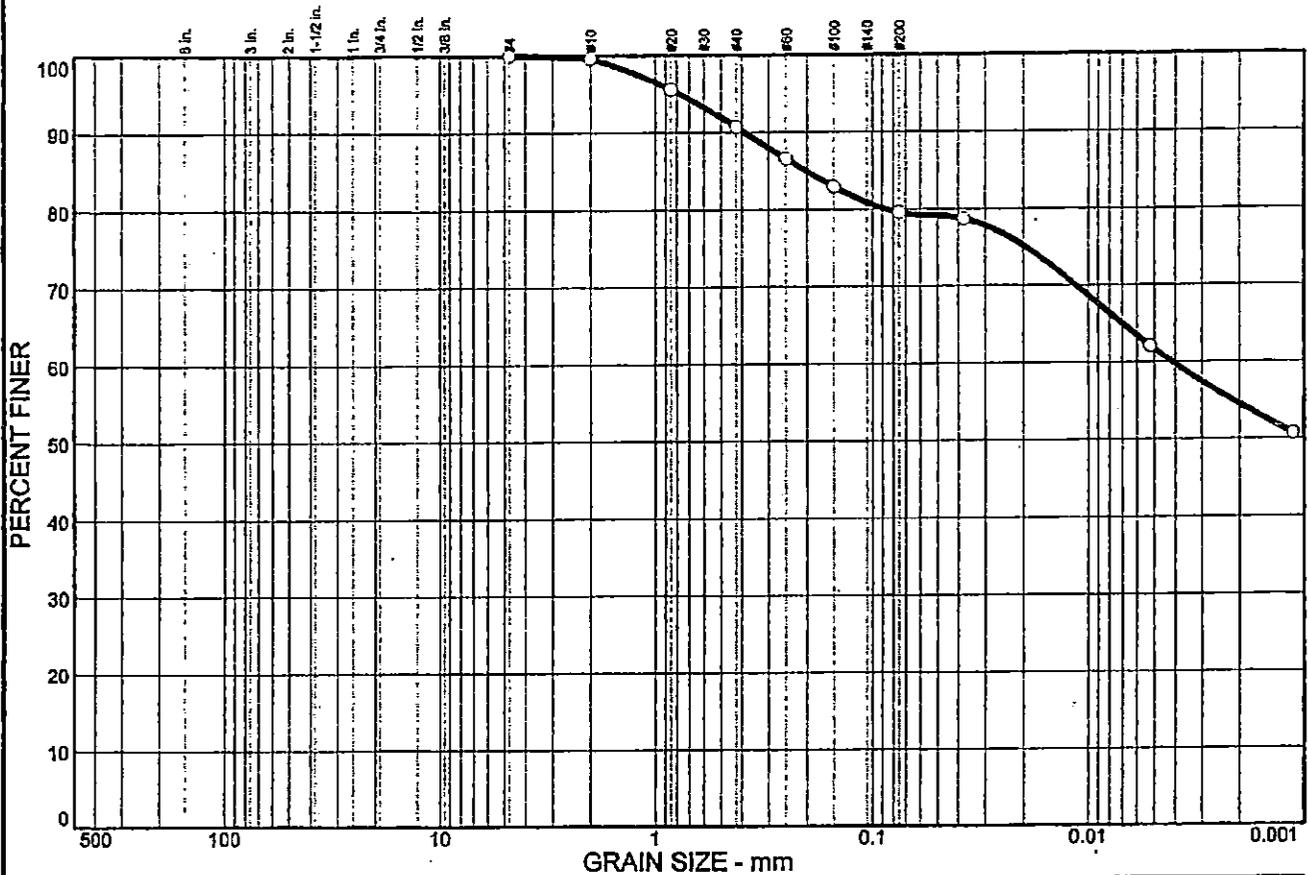
| SOURCE | SAMPLE # | DEPTH/ELEV. | DATE SAMPLED | USCS | MATERIAL DESCRIPTION | NM % | LL | PI |
|---|----------|-------------|--------------|------|--|------|----|----|
| • LOCUST AVE. STA.1+34, 10.2' RT. C.L. | 13888 | 1.1'-3.5' | 8-20-02 | CH | BROWN TO ORANGE/BROWN, DAMP, VERY HIGH PLASTICITY, STIFF FAT CLAY (CH) WITH SAND (PHOSPHATE NODULES), A-7-5(43). | 35.1 | 80 | 48 |
| | | | | | | | | |

Client **SHERMAN CARTER BARNHART, PSC**
 Project **MEADOWS-NORTHLAND-ARLINGTON**
NEIGHBORHOOD IMPROVEMENT PROJECT
 Project No. 2095 Plate

GREGG
LABORATORIES, INC.

• LOCUST AVE. STA.1+34, 10.2' RT. C.L.
 LAB #13888

Particle Size Distribution Report



| % + 3" | % GRAVEL | | % SAND | | | % FINES | |
|--------|----------|------|--------|--------|------|---------|------|
| | CRS. | FINE | CRS. | MEDIUM | FINE | SILT | CLAY |
| 0.0 | 0.0 | 0.0 | 0.3 | 9.0 | 11.1 | 17.9 | 61.7 |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|------------|---------------|----------------|--------------|
| #4 | 100.0 | | |
| #10 | 99.7 | | |
| #20 | 95.6 | | |
| #40 | 90.7 | | |
| #60 | 86.6 | | |
| #100 | 83.0 | | |
| #200 | 79.6 | | |

Soil Description

BROWN TO ORANGE/BROWN, DAMP, VERY HIGH PLASTICITY, STIFF FAT CLAY (CH) WITH SAND (PHOSPHATE NODULES), A-7-5(43).

Atterberg Limits

PL= 32 LL= 80 PI= 48

Coefficients

D₈₅= 0.201 D₆₀= 0.0041 D₅₀=
 D₃₀= D₁₅= D₁₀=
 C_u= C_c=

Classification

USCS= CH AASHTO= A-7-5(43)

Remarks

LOCUST AVE., STA.1+34, 10.2' RT. C.L.
 LAB #13888
 F.M.=0.17

* (no specification provided)

Sample No.: 13888
 Location:

Source of Sample: LOCUST AVE, STA.1+34, 10.2' RT. C.L. Date: 8-20-02
 Elev./Depth: 1.1'-3.5'

GREGG
LABORATORIES, INC.

Client: SHERMAN CARTER BARNHART, PSC
 Project: MEADOWS-NORTHLAND-ARLINGTON
 NEIGHBORHOOD IMPROVEMENT PROJECT
 Project No: 2095 Plate

COMPACTION TEST REPORT

Curve No.: 5

Project No.: 2095

Date: 9-21-02

Project: MEADOWS-NORTHLAND-ARLINGTON
NEIGHBORHOOD IMPROVEMENT PROJECT

Location: PHASE 5

Elev./Depth: 1.1'-5.9'

Remarks: LOCUST AVE., STA.6+16.7, 9.4' RT. C.L.
LAB #13887

MATERIAL DESCRIPTION

Description: BROWN/TAN, GRAY MOTTLED, DAMP, HIGH PLASTICITY, STIFF, SANDY (WEATHERED CERT FRAGMENTS) ELASTIC SILT (MH), A-7-5(12).

Classifications -

USCS: MH

AASHTO: A-7-5(12)

Nat. Moist = 25.7 %

Sp.G. = 2.73

Liquid Limit = 54

Plasticity Index = 23

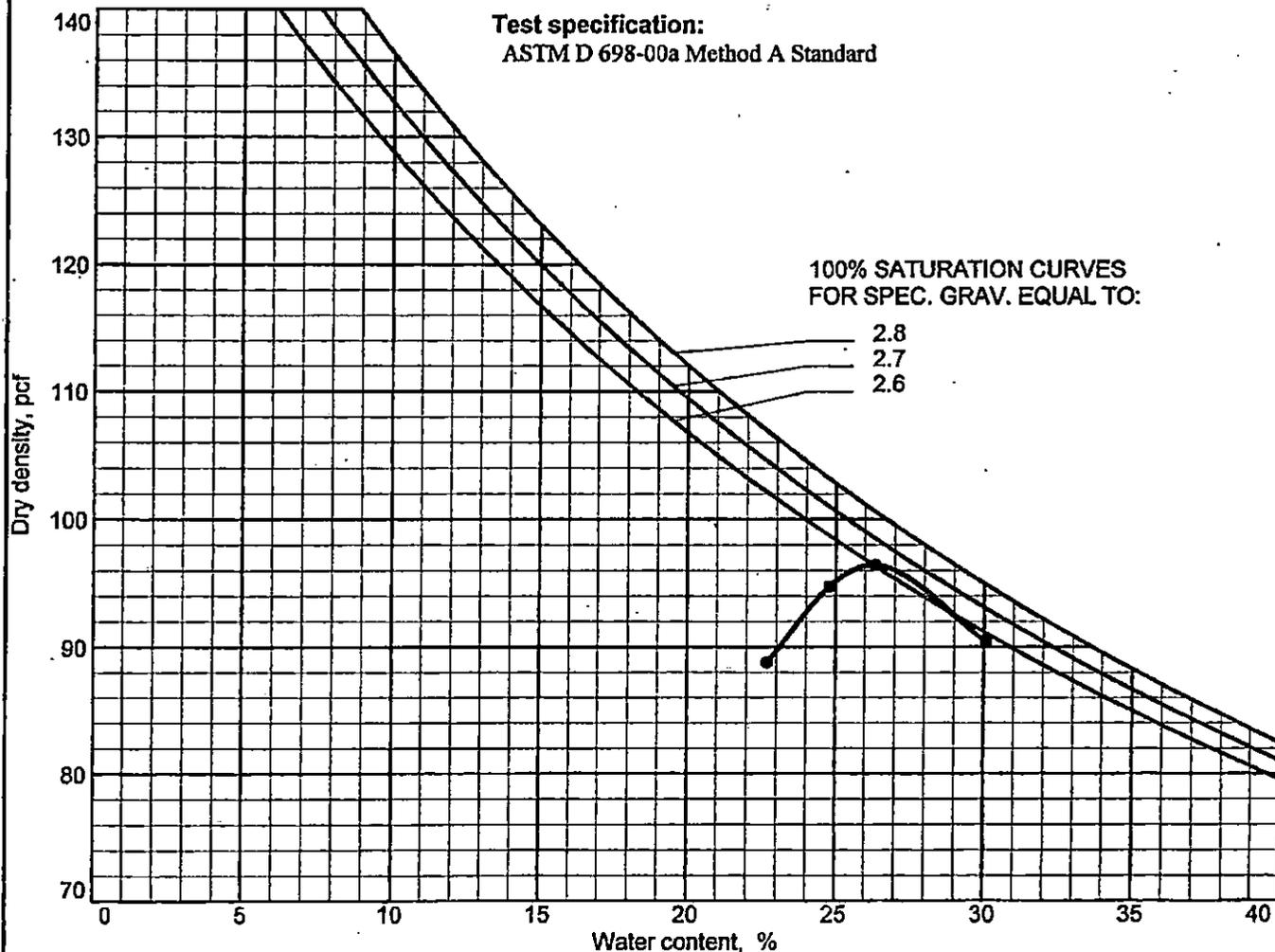
% > No.4 = 0.9 %

% < No.200 = 57.5 %

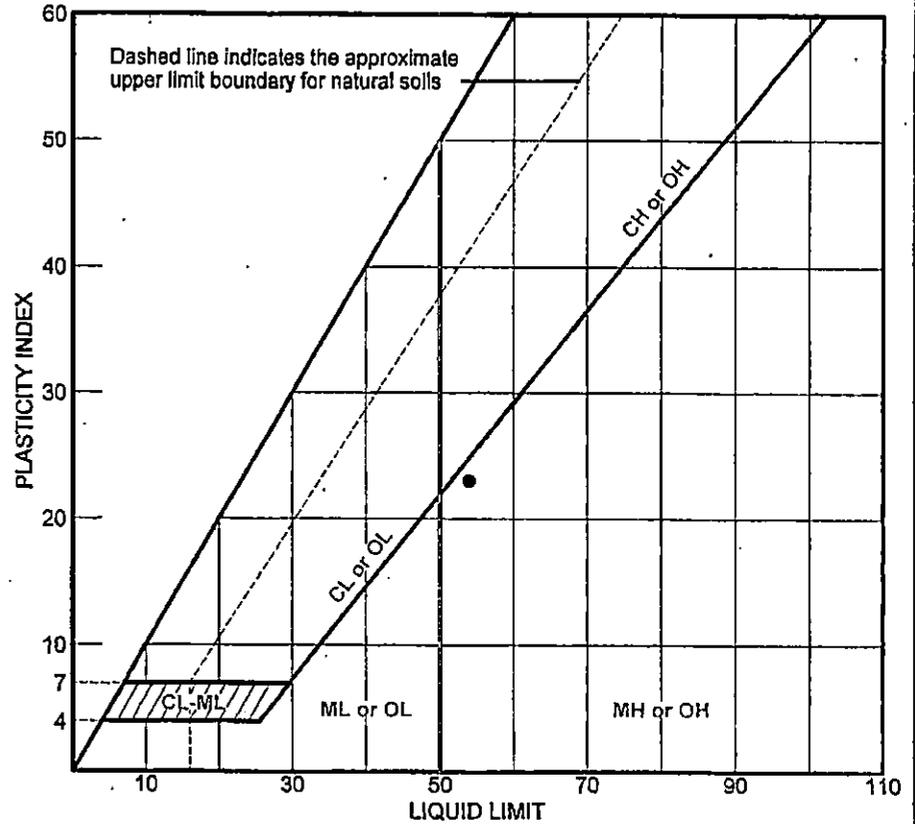
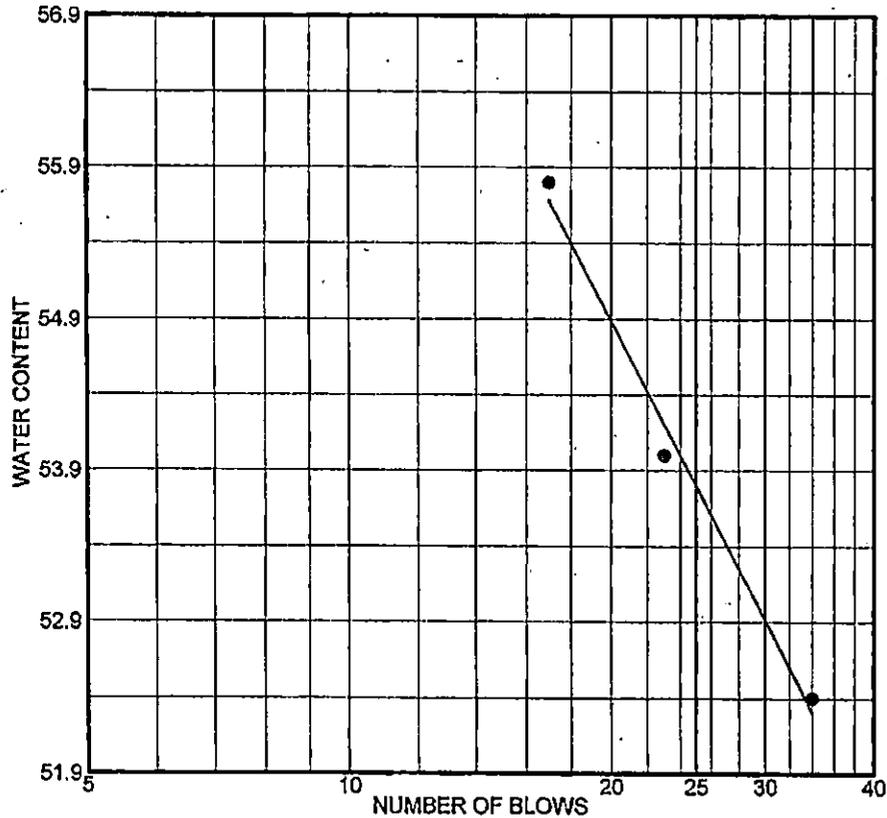
TEST RESULTS

Maximum dry density = 96.5 pcf

Optimum moisture = 26.5 %



LIQUID AND PLASTIC LIMITS TEST REPORT



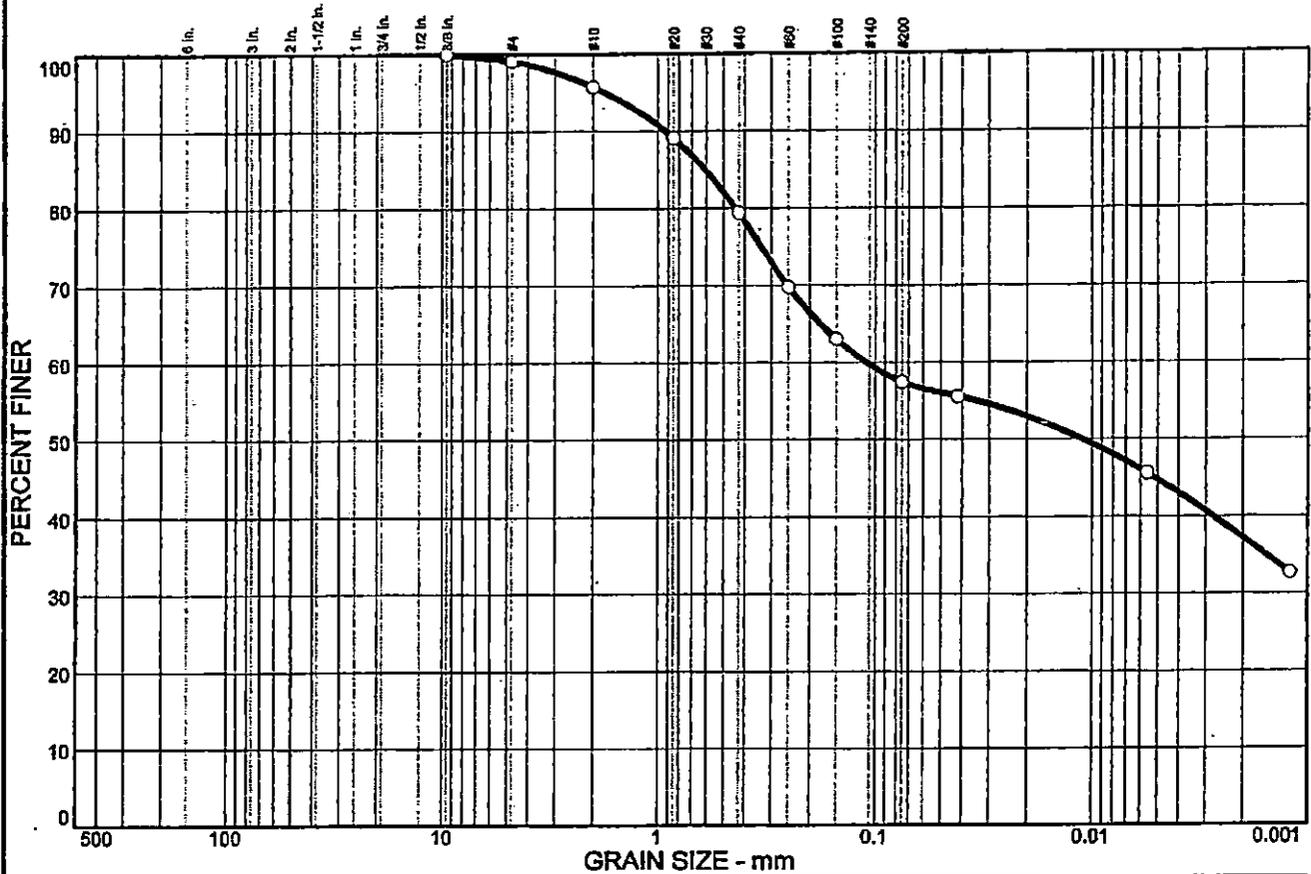
| SOURCE | SAMPLE # | DEPTH/ELEV. | DATE SAMPLED | USCS | MATERIAL DESCRIPTION | NM % | LL | PI |
|---|------------|-------------|--------------|------|--|------|----|----|
| ● LOCUST AVE., STA.6+16.7, 9.4' RT. C.L. | LAB #13887 | 1.1'-5.9' | 8-20-02 | MH | BROWN/TAN, GRAY MOTTLED, DAMP, HIGH PLASTICITY, STIFF, SANDY (WEATHERED CHERT FRAGMENTS) ELASTIC SILT (MH), A-7-5(12). | 25.7 | 54 | 23 |
| | | | | | | | | |

Client SHERMAN CARTER BARNHART, PSC
 Project MEADOWS-NORTHLAND-ARLINGTON
 NEIGHBORHOOD IMPROVEMENT PROJECT
 Project No. 2095

**GREGG
 LABORATORIES, INC.**

● LOCUST AVE., STA.6+16.7, 9.4' RT. C.L.
 LAB #13887

Particle Size Distribution Report



| % + 3" | % GRAVEL | | % SAND | | | % FINES | |
|--------|----------|------|--------|--------|------|---------|------|
| | CRS. | FINE | CRS. | MEDIUM | FINE | SILT | CLAY |
| 0.0 | 0.0 | 0.9 | 3.4 | 16.3 | 21.9 | 12.7 | 44.8 |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|------------|---------------|----------------|--------------|
| .375 in. | 100.0 | | |
| #4 | 99.1 | | |
| #10 | 95.7 | | |
| #20 | 89.1 | | |
| #40 | 79.4 | | |
| #60 | 69.8 | | |
| #100 | 63.0 | | |
| #200 | 57.5 | | |

Soil Description
 BROWN/TAN, GRAY MOTTLED, DAMP, HIGH PLASTICITY, STIFF, SANDY (WEATHERED CHERT FRAGMENTS) ELASTIC SILT (MH), A-7-5(12).

Atterberg Limits
 PL= 31 LL= 54 PI= 23

Coefficients
 D₈₅= 0.608 D₆₀= 0.110 D₅₀= 0.0110
 D₃₀= D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= MH AASHTO= A-7-5(12)

Remarks
 LOCUST AVE. STA.6+16.7, 9.4' RT. C.L.
 LAB #13887
 F.M.=0.38

* (no specification provided)

Sample No.: LAB #13887
 Location:

Source of Sample: LOCUST AVE., STA.6+16.7, 9.4' RT. C.L. Date: 8-20-02
 Elev./Depth: 1.1'-5.9'

GREGG
LABORATORIES, INC.

Client: SHERMAN CARTER BARNHART, PSC
 Project: MEADOWS-NORTHLAND-ARLINGTON
 NEIGHBORHOOD IMPROVEMENT PROJECT
 Project No: 2095 Plate

COMPACTION TEST REPORT

Curve No.: 16

Date: 9-21-02

Project No.: 2095

Project: MEADOWS-NORTHLAND-ARLINGTON
NEIGHBORHOOD IMPROVEMENT PROJECT

Location: PHASE 5

Elev./Depth: 0.9'-4.6'

Remarks: LOCUST AVE. STA.12+11, 9.3' RT. C.L.
LAB #13909

MATERIAL DESCRIPTION

Description: REDDISH BROWN TO DARK BROWN, DAMP, HIGH PLASTICITY, STIFF FAT CLAY (CH) WITH SAND (PHOSPHATE NODULES), A-7-6(28).

Classifications -

USCS: CH

AASHTO: A-7-6(28)

Nat. Moist. = 28.1 %

Sp.G. = 2.72

Liquid Limit = 56

Plasticity Index = 33

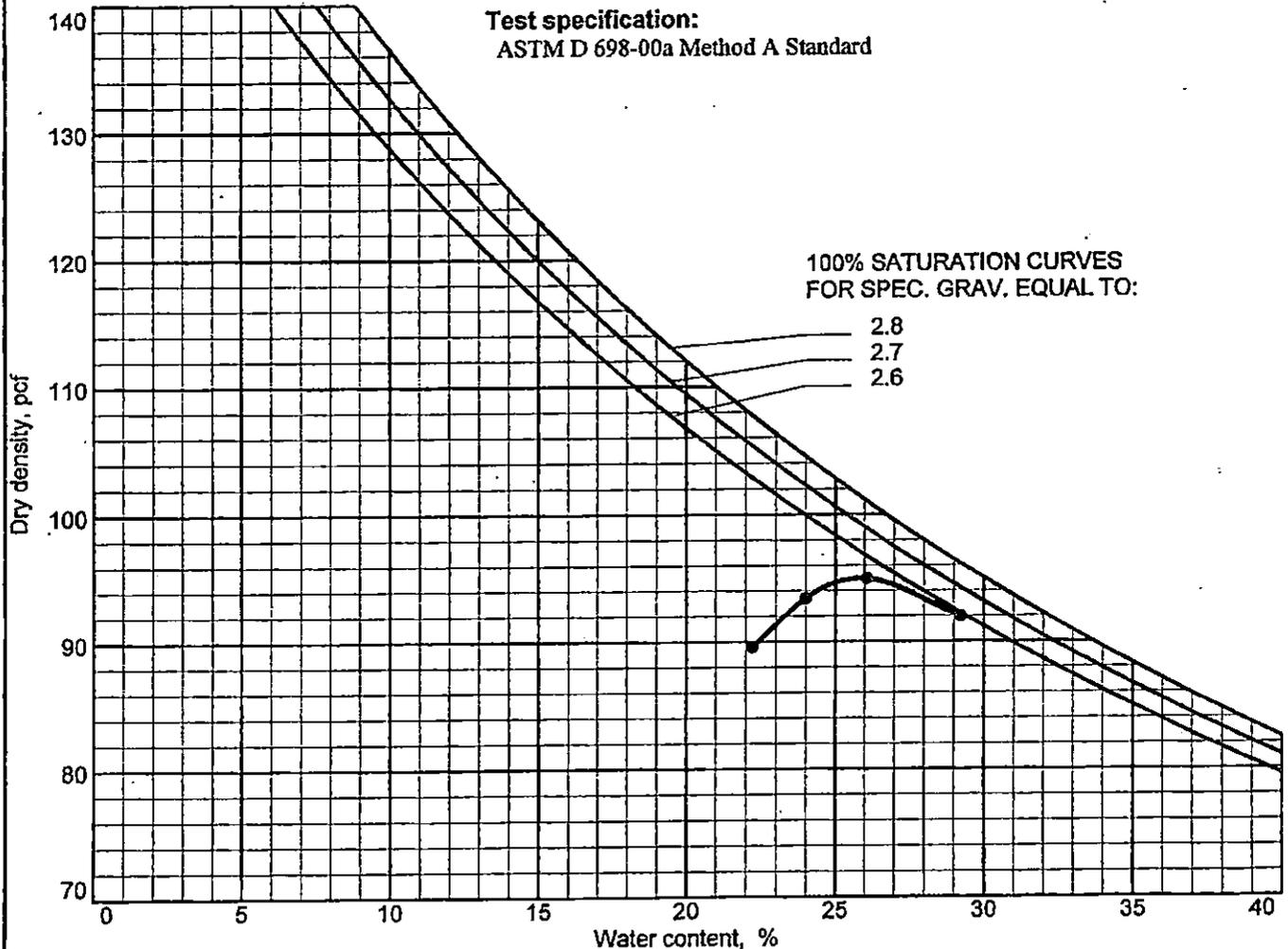
% > No.4 = 1.2 %

% < No.200 = 80.8 %

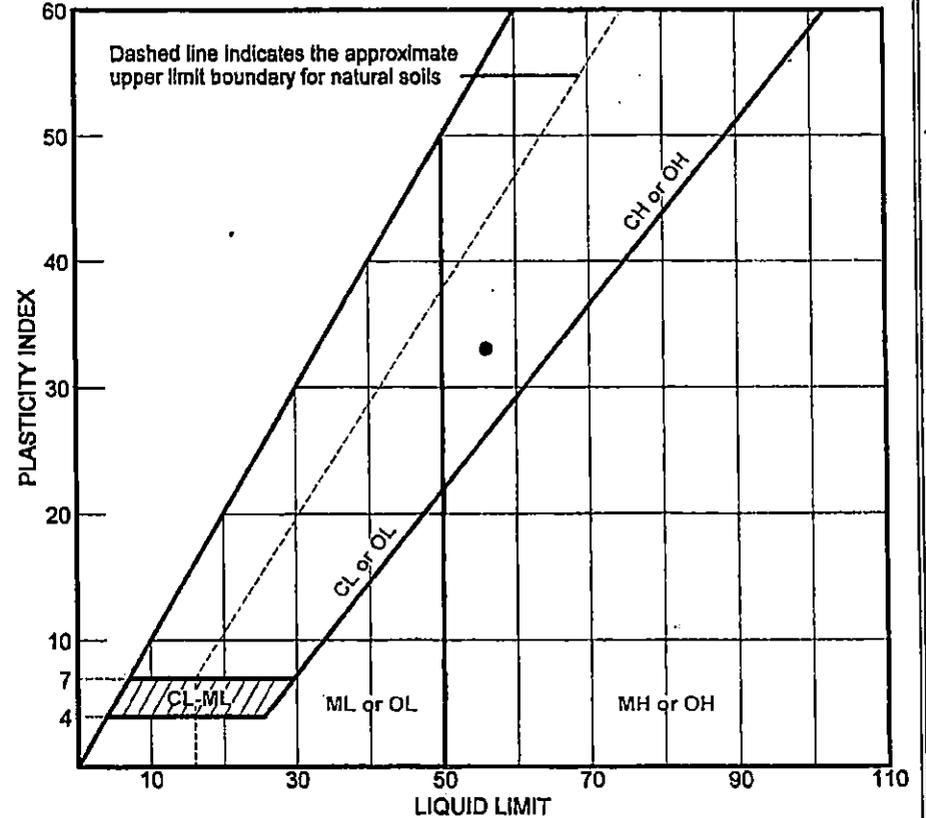
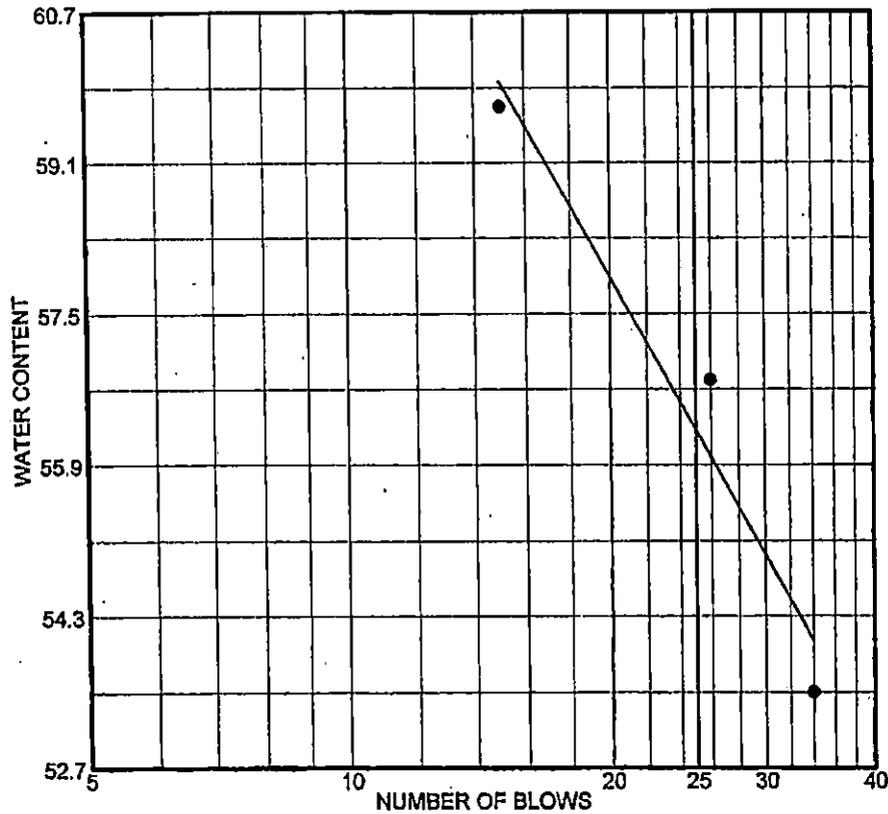
TEST RESULTS

Maximum dry density = 95 pcf

Optimum moisture = 26 %



LIQUID AND PLASTIC LIMITS TEST REPORT



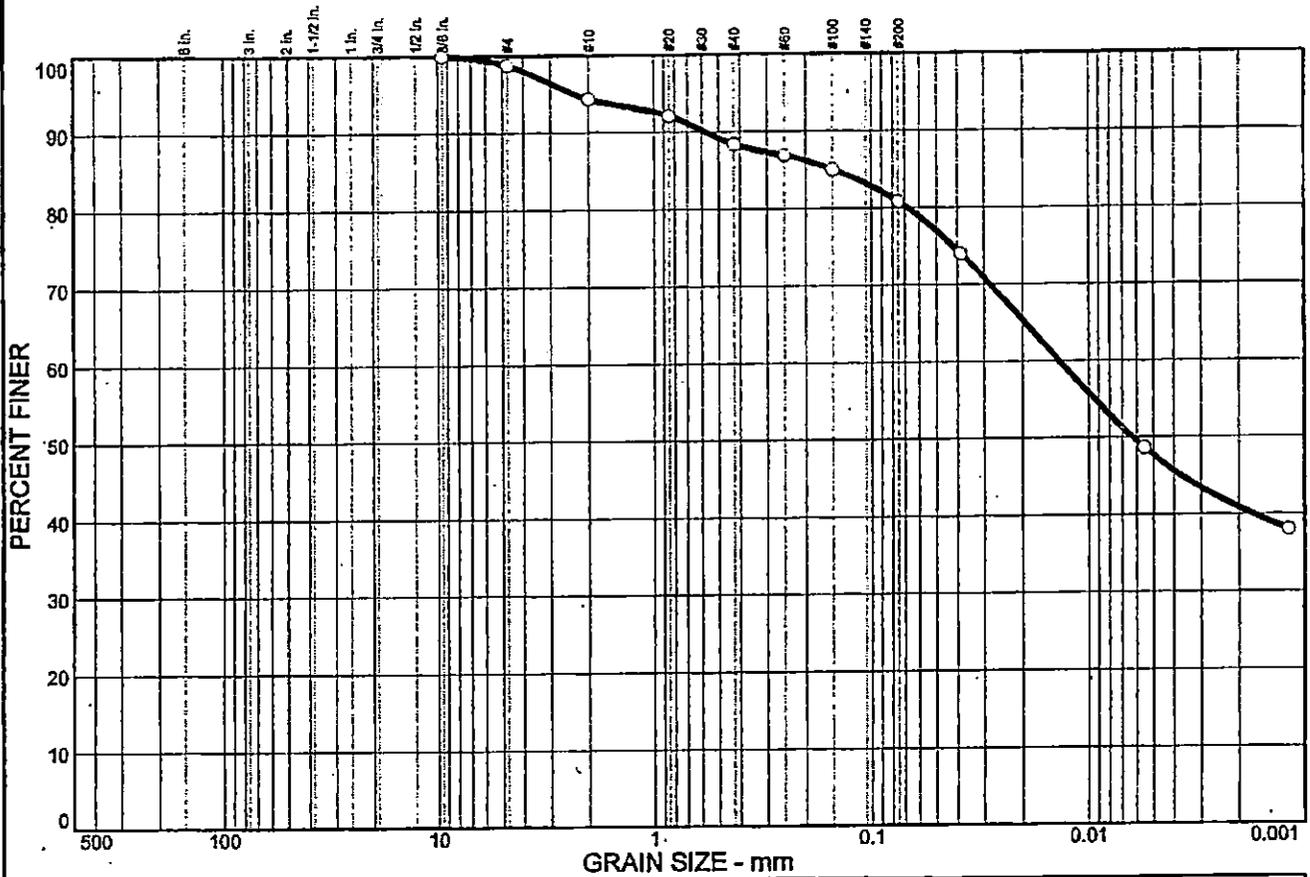
| SOURCE | SAMPLE # | DEPTH/ELEV. | DATE SAMPLED | USCS | MATERIAL DESCRIPTION | NM % | LL | PI |
|---|----------|-------------|--------------|------|---|------|----|----|
| • LOCUST AVE. STA.12+11, 9.3' RT. C.L. | 13909 | 0.9'-4.6' | 8-21-02 | CH | REDDISH BROWN TO DARK BROWN, DAMP, HIGH PLASTICITY, STIFF FAT CLAY (CH) WITH SAND (PHOSPHATE NODULES), A-7-6(28). | 28.1 | 56 | 33 |
| | | | | | | | | |

Client SHERMAN CARTER BARNHART, PSC
 Project MEADOWS-NORTHLAND-ARLINGTON
 NEIGHBORHOOD IMPROVEMENT PROJECT
 Project No. 2095

**GREGG
 LABORATORIES, INC.**

• LOCUST AVE. STA.12+11, 9.3' RT. C.L.
 LAB #13909

Particle Size Distribution Report



| % + 3" | % GRAVEL | | % SAND | | | % FINES | |
|--------|----------|------|--------|--------|------|---------|------|
| | CRS. | FINE | CRS. | MEDIUM | FINE | SILT | CLAY |
| 0.0 | 0.0 | 1.2 | 4.4 | 6.0 | 7.6 | 33.1 | 47.7 |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|------------|---------------|----------------|--------------|
| .375 in. | 100.0 | | |
| #4 | 98.8 | | |
| #10 | 94.4 | | |
| #20 | 92.1 | | |
| #40 | 88.4 | | |
| #60 | 86.9 | | |
| #100 | 85.0 | | |
| #200 | 80.8 | | |

Soil Description

REDDISH BROWN TO DARK BROWN, DAMP, HIGH PLASTICITY, STIFF FAT CLAY (CH) WITH SAND (PHOSPHATE NODULES), A-7-6(28).

Atterberg Limits

PL= 23 LL= 56 PI= 33

Coefficients

D₈₅= 0.150 D₆₀= 0.0136 D₅₀= 0.0062
 D₃₀= D₁₅= D₁₀=
 C_u= C_c=

Classification

USCS= CH AASHTO= A-7-6(28)

Remarks

LOCUST AVE. STA.12+11, 9.3' RT. C.L.
 LAB #13909
 F.M.=0.16

* (no specification provided)

Sample No.: 13909 Source of Sample: LOCUST AVE. STA.12+11, 9.3' RT. C.L. Date: 8-21-02
 Location: Elev./Depth: 0.9'-4.6'

| | |
|--|--|
| <h2 style="margin: 0;">GREGG</h2> <h3 style="margin: 0;">LABORATORIES, INC.</h3> | Client: SHERMAN CARTER BARNHART, PSC Project: MEADOWS-NORTHLAND-ARLINGTON NEIGHBORHOOD IMPROVEMENT PROJECT Project No: 2095 Plate |
|--|--|

COMPACTION TEST REPORT

Curve No.: 4

Date: 9-20-01

Project No.: 2095

Project: MEADOWS-NORTHLAND-ARLINGTON
NEIGHBORHOOD IMPROVEMENT PROJECT

Location: PHASE 5

Elev./Depth: 0.8'-3.7'

Remarks: OAK HILL DR., STA.1+85, 6.6' RT. C.L.
LAB #13886

MATERIAL DESCRIPTION

Description: DARK BROWN, DAMP, SLIGHT PLASTICITY, MEDIUM SILT (ML), A-4(7).

Classifications -

USCS: ML

AASHTO: A-4(7)

Nat. Moist. = 26.8 %

Sp.G. = 2.68

Liquid Limit = 31

Plasticity Index = 7

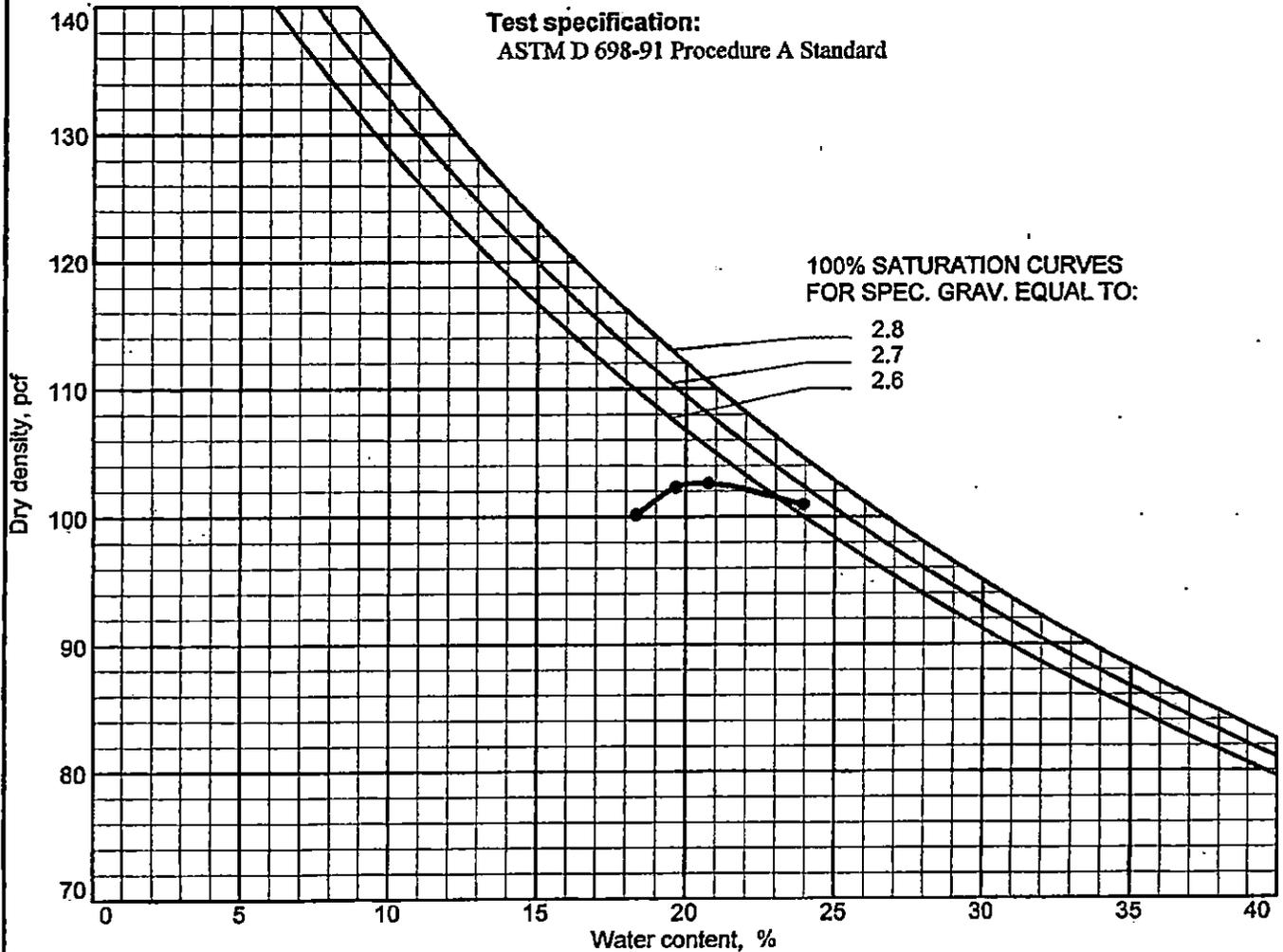
% > No.4 = 0.1 %

% < No.200 = 92.6 %

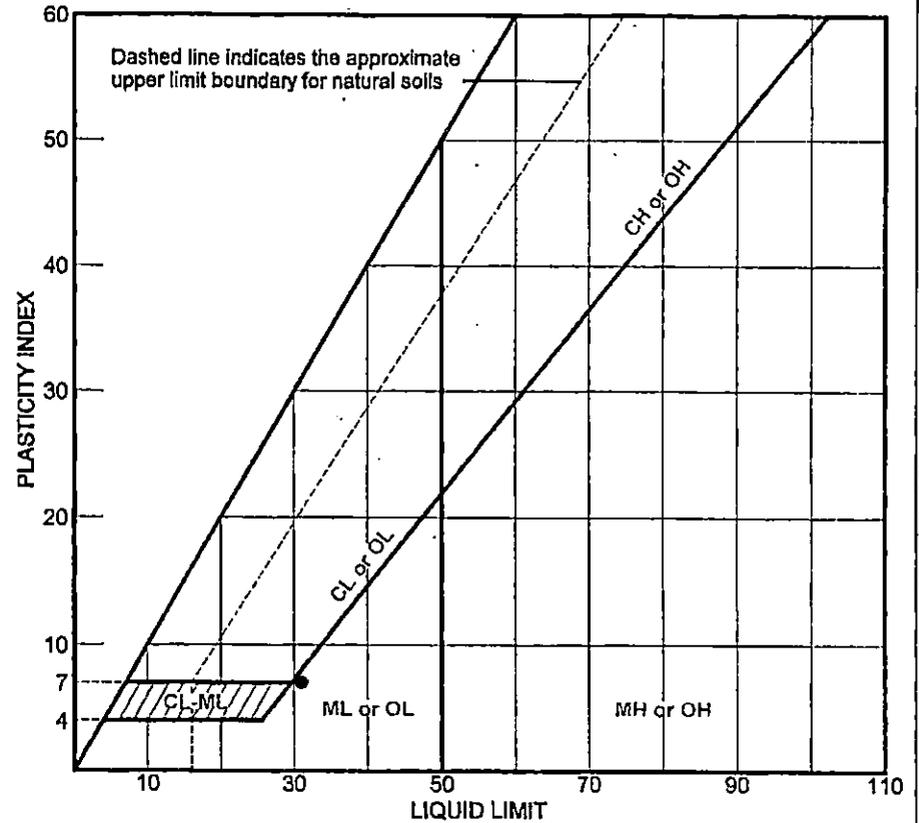
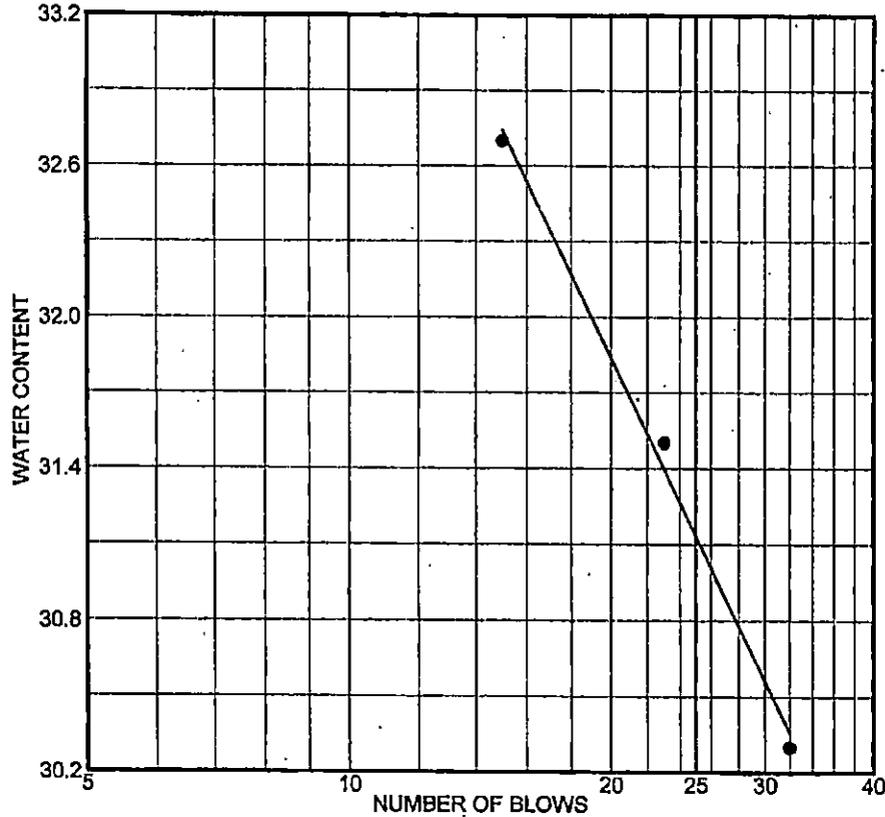
TEST RESULTS

Maximum dry density = 102.5 pcf

Optimum moisture = 20.5 %



LIQUID AND PLASTIC LIMITS TEST REPORT



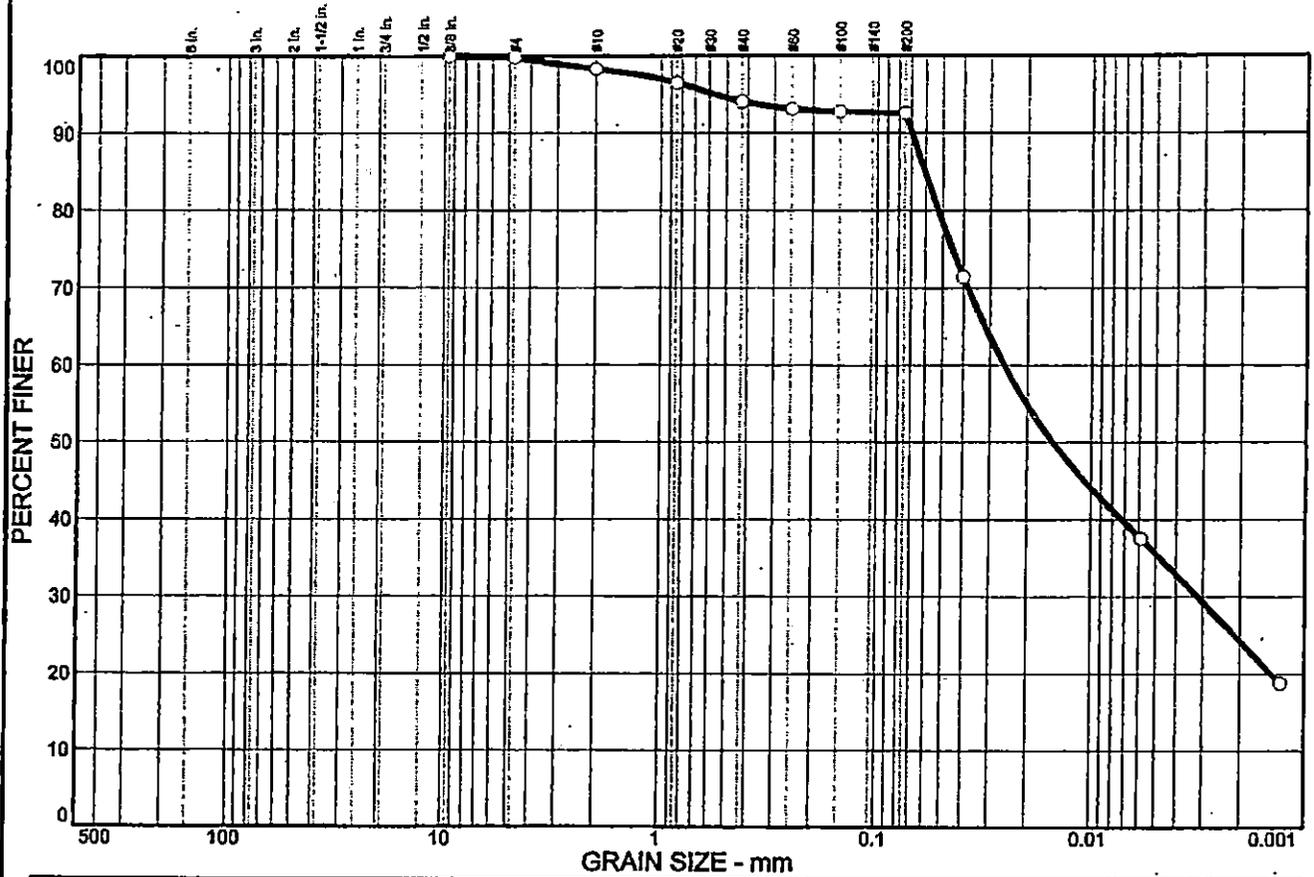
| SOURCE | SAMPLE # | DEPTH/ELEV. | DATE SAMPLED | USCS | MATERIAL DESCRIPTION | NM % | LL | PI |
|---|----------|-------------|--------------|------|--|------|----|----|
| • OAK HILL DR., STA.1+85, 6.6' RT. C.L. | 13886 | 0.8'-3.7' | 8-20-02 | ML | DARK BROWN, DAMP, SLIGHT PLASTICITY, MEDIUM SILT (ML), A-4(7). | 26.8 | 31 | 7 |
| | | | | | | | | |
| | | | | | | | | |

Client SHERMAN CARTER BARNHART, PSC
 Project MEADOWS-NORTHLAND-ARLINGTON
 NEIGHBORHOOD IMPROVEMENT PROJECT
 Project No. 2095

**GREGG
 LABORATORIES, INC.**

• OAK HILL DR., STA.1+85, 6.6' RT. C.L.
 LAB #13886

Particle Size Distribution Report



| % + 3" | % GRAVEL | | % SAND | | | % FINES | |
|--------|----------|------|--------|--------|------|---------|------|
| | CRS. | FINE | CRS. | MEDIUM | FINE | SILT | CLAY |
| 0.0 | 0.0 | 0.1 | 1.6 | 4.2 | 1.5 | 56.9 | 35.7 |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|------------|---------------|----------------|--------------|
| .375 in. | 100.0 | | |
| #4 | 99.9 | | |
| #10 | 98.3 | | |
| #20 | 96.5 | | |
| #40 | 94.1 | | |
| #60 | 93.1 | | |
| #100 | 92.8 | | |
| #200 | 92.6 | | |

Soil Description

DARK BROWN, DAMP, SLIGHT PLASTICITY, MEDIUM SILT (ML), A-4(7).

Atterberg Limits

PL= 24 LL= 31 PI= 7

Coefficients

D₈₅= 0.0605 D₆₀= 0.0256 D₅₀= 0.0150
 D₃₀= 0.0032 C_u= D₁₅= D₁₀=
 C_c=

Classification

USCS= ML AASHTO= A-4(7)

Remarks

OAK HILL DR. STA.1+85, 6.6' RT. C.L.
 LAB #13886
 F.M.=0.07

(no specification provided)

Sample No.: 13886
 Location:

Source of Sample: OAK HILL DR., STA.1+85, 6.6' RT. C.L. Date: 8-20-02
 Elev./Depth: 0.8'-3.7'

GREGG
 LABORATORIES, INC.

Client: SHERMAN CARTER BARNHART, PSC
 Project: MEADOWS-NORTHLAND-ARLINGTON
 NEIGHBORHOOD IMPROVEMENT PROJECT
 Project No: 2095 Plate

COMPACTION TEST REPORT

Curve No.: 3

Project No.: 2095

Date: 9-21-02

Project: MEADOWS-NORTHLAND-ARLINGTON
NEIGHBORHOOD IMPROVEMENT PROJECT

Location: PHASE 5

Elev./Depth: 1.1'-3.8'

Remarks: OAK HILL DR. STA.9+33, 8.3' RT. C.L.
LAB #13885

MATERIAL DESCRIPTION

Description: MEDIUM BROWN/ORANGE BROWN, DAMP, VERY HIGH PLASTICITY, STIFF FAT CLAY (CH) WITH SAND (PHOSPHATES NODULES), A-7-6(25).

Classifications -

USCS: CH

AASHTO: A-7-6(25)

Nat. Moist = 23.5 %

Sp.G. = 2.68

Liquid Limit = 55

Plasticity Index = 34

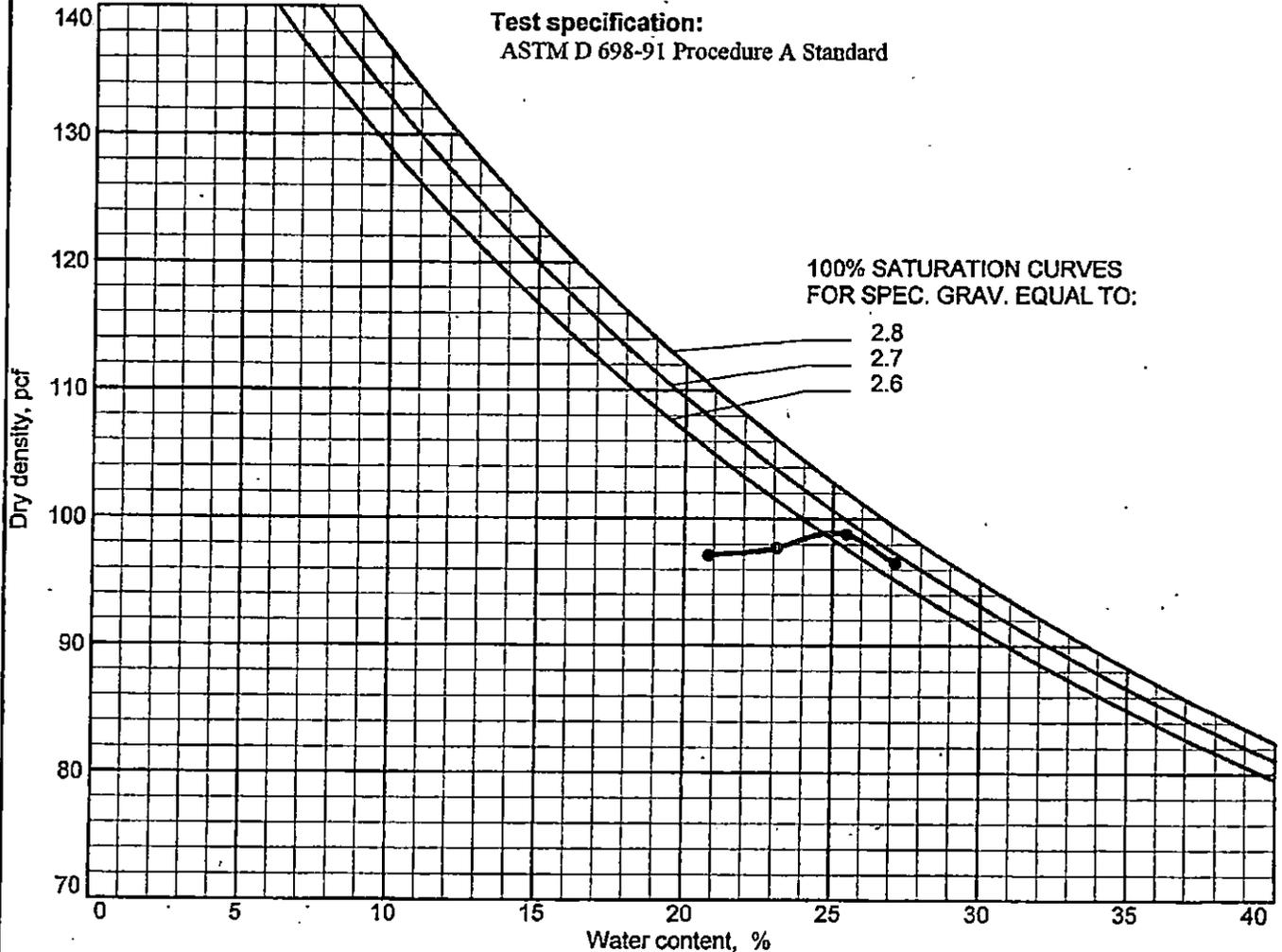
% > No.4 = 1.0 %

% < No.200 = 74.6 %

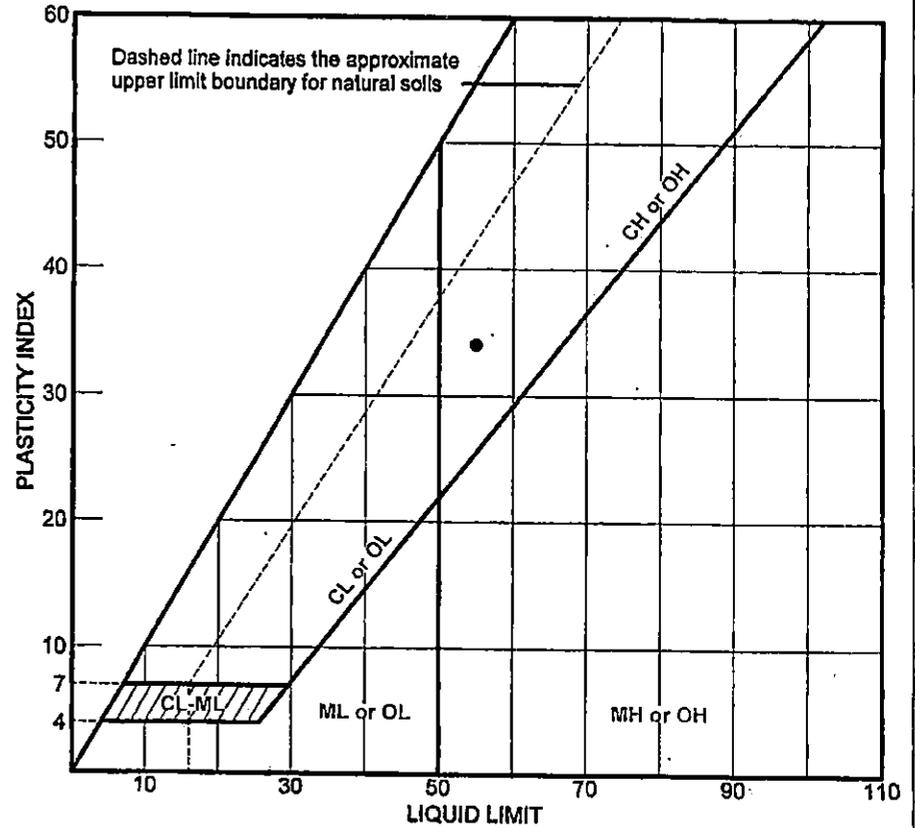
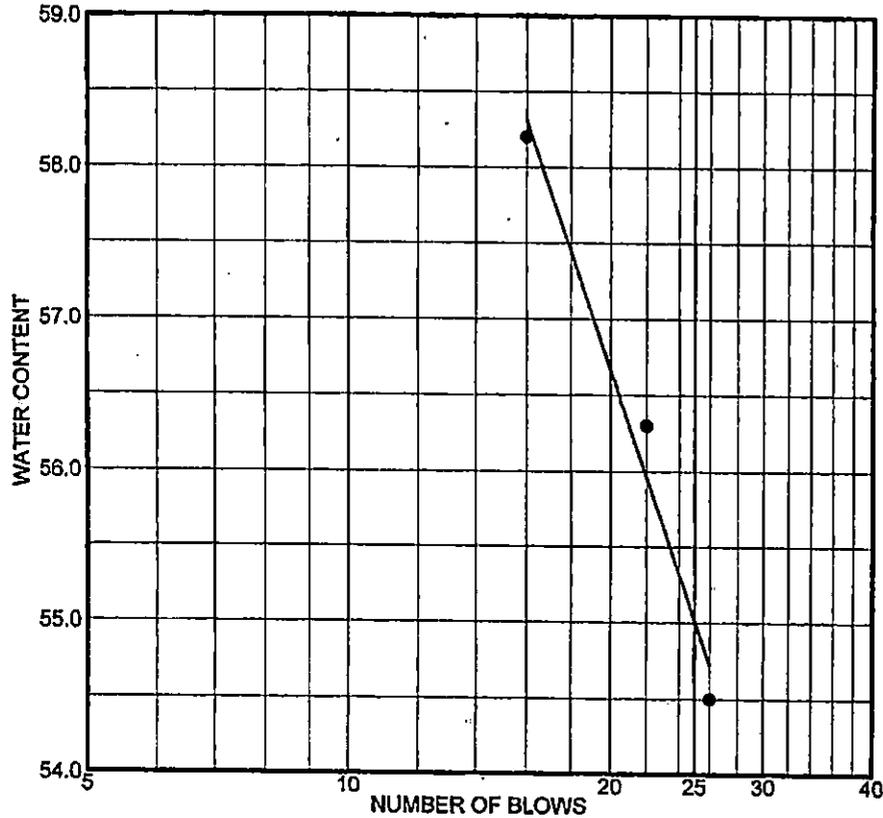
TEST RESULTS

Maximum dry density = 99 pcf

Optimum moisture = 25 %



LIQUID AND PLASTIC LIMITS TEST REPORT



| SOURCE | SAMPLE # | DEPTH/ELEV. | DATE SAMPLED | USCS | MATERIAL DESCRIPTION | NM % | LL | PI |
|---|----------|-------------|--------------|------|---|------|----|----|
| • OAK HILL DR. STA.9+33, 8.3' RT. C.L. | 13885 | 1.1'-3.8' | 8-20-02 | CH | MEDIUM BROWN/ORANGE BROWN, DAMP, VERY HIGH PLASTICITY, STIFF FAT CLAY (CH) WITH SAND (PHOSPHATES NODULES), A-7-6(25). | 23.5 | 55 | 34 |
| | | | | | | | | |

Client SHERMAN CARTER BARNHART, PSC
 Project MEADOWS-NORTHLAND-ARLINGTON
 NEIGHBORHOOD IMPROVEMENT PROJECT
 Project No. 2095 Plate

**GREGG
 LABORATORIES, INC.**

• OAK HILL DR., STA.9+33, 8.3' RT. C.L.
 LAB #13885

COMPACTION TEST REPORT

Curve No.: 1

Project No.: 2095

Date: 9-21-02

Project: MEADOWS-NORTHLAND-ARLINGTON
NEIGHBORHOOD IMPROVEMENT PROJECT

Location: PHASE 5

Elev./Depth: 1.2'-2.2'

Remarks: OAK HILL DR., STA.14+52.8, 6' RT. C.L.
LAB #13883

MATERIAL DESCRIPTION

Description: LIGHT BROWN TO DARK BROWN, DAMP, MEDIUM PLASTICITY, MEDIUM SANDY (WEATHERED
CHERT FRAGMENTS AND PHOSPHATE NODULES) LEAN CLAY (CL), A-6(5).

Classifications -

USCS: CL

AASHTO: A-6(5)

Nat. Moist. = 20.5 %

Sp.G. = 2.65

Liquid Limit = 37

Plasticity Index = 14

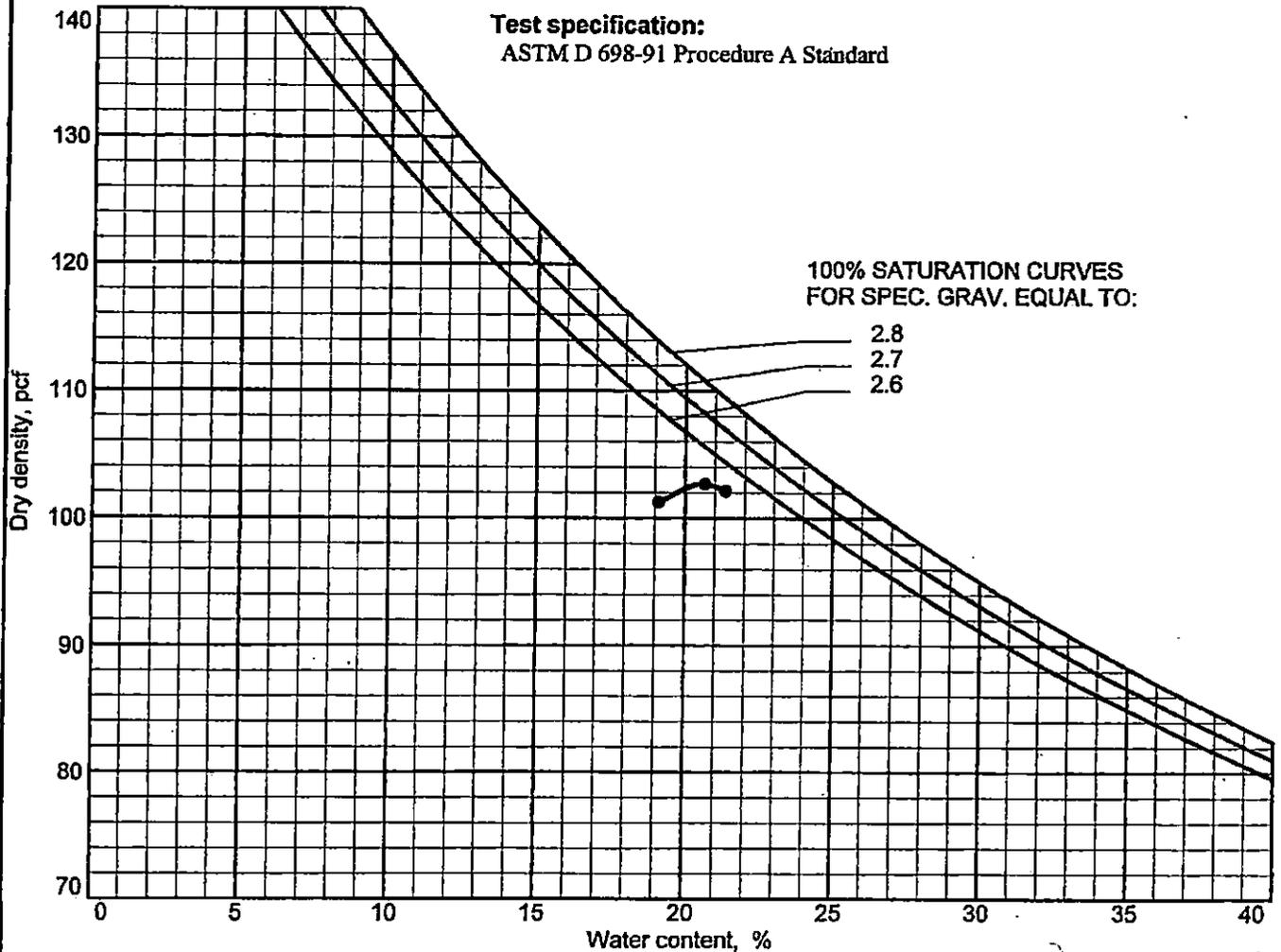
% > No.4 = 0.6 %

% < No.200 = 52.6 %

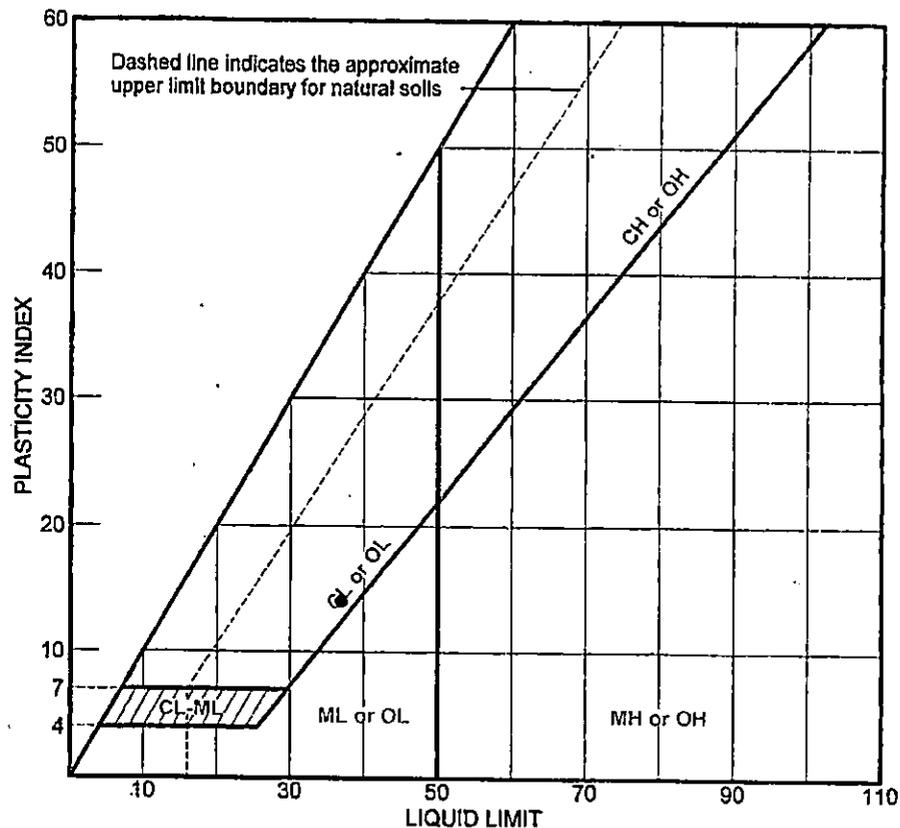
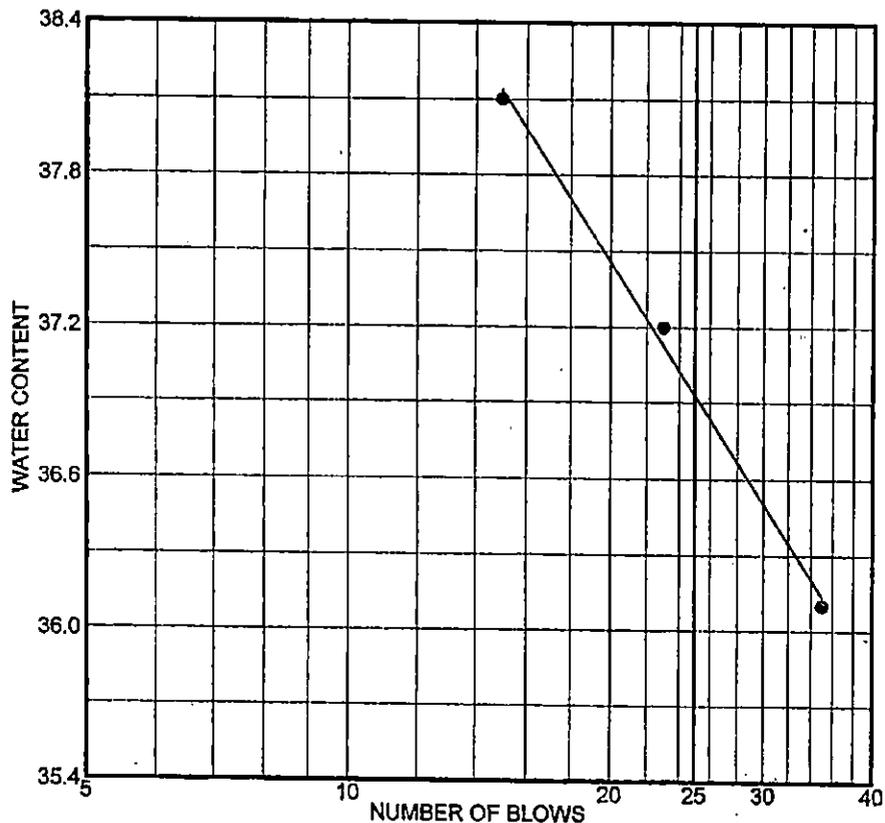
TEST RESULTS

Maximum dry density = 102.5 pcf

Optimum moisture = 20.5 %



LIQUID AND PLASTIC LIMITS TEST REPORT



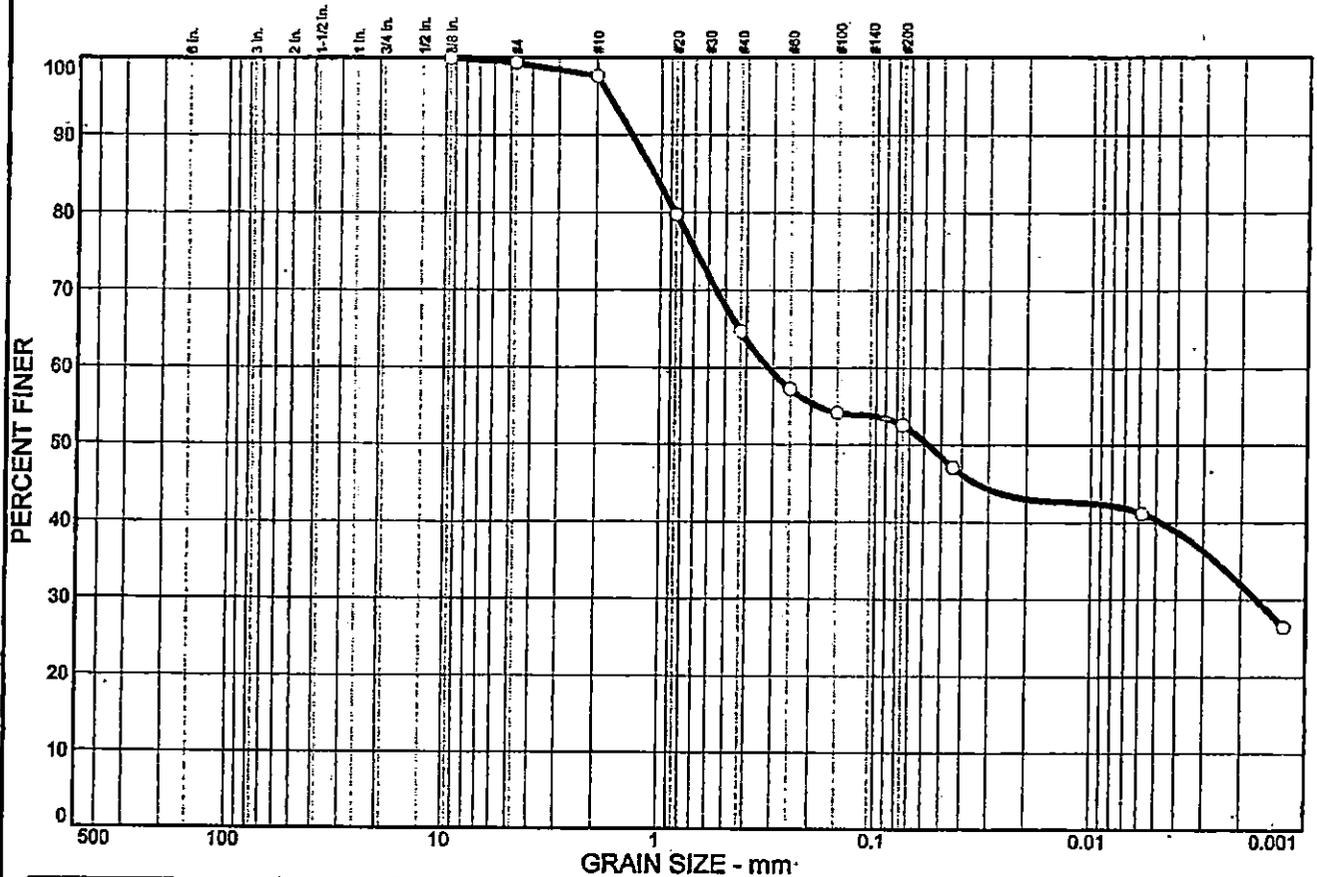
| SOURCE | SAMPLE # | DEPTH/ELEV. | DATE SAMPLED | USCS | MATERIAL DESCRIPTION | NM % | LL | PI |
|--|----------|-------------|--------------|------|--|------|----|----|
| • OAK HILL DR., STA.14+52.8, 6' RT. C.L. | 13883 | 1.2'-2.2' | 8-20-02 | CL | LIGHT BROWN TO DARK BROWN, DAMP, MEDIUM PLASTICITY, MEDIUM SANDY (WEATHERED CHERT FRAGMENTS AND PHOSPHATE NODULES) LEAN CLAY (CL), A-6(5). | 20.5 | 37 | 14 |
| | | | | | | | | |
| | | | | | | | | |

Client SHERMAN CARTER BARNHART, PSC
 Project MEADOWS-NORTHLAND-ARLINGTON
 NEIGHBORHOOD IMPROVEMENT PROJECT
 Project No. 2095

**GREGG
 LABORATORIES, INC.**

• OAK HILL DR., STA.14+52.8, 6' RT. C.L.
 LAB #13883

Particle Size Distribution Report



COMPACTION TEST REPORT

Curve No.: 2

Project No.: 2095

Date: 9-20-02

Project: MEADOWS-NORTHLAND-ARLINGTON
NEIGHBORHOOD IMPROVEMENT PROJECT

Location: PHASE 5

Elev./Depth: 2.2'-4.2'

Remarks: OAK HILL DR. STA.14+52.8, 6' RT. C.L.
LAB #13884

MATERIAL DESCRIPTION

Description: BROWN TO REDDISH BROWN, DAMP, HIGH PLASTICITY, STIFF FAT CLAY (CH) WITH SAND
(WEATHERED CHERT FRAGMENTS), A-7-6(23).

Classifications -

USCS: CH

AASHTO: A-7-6(23)

Nat. Moist. = 26.2 %

Sp.G. = 2.65

Liquid Limit = 50

Plasticity Index = 26

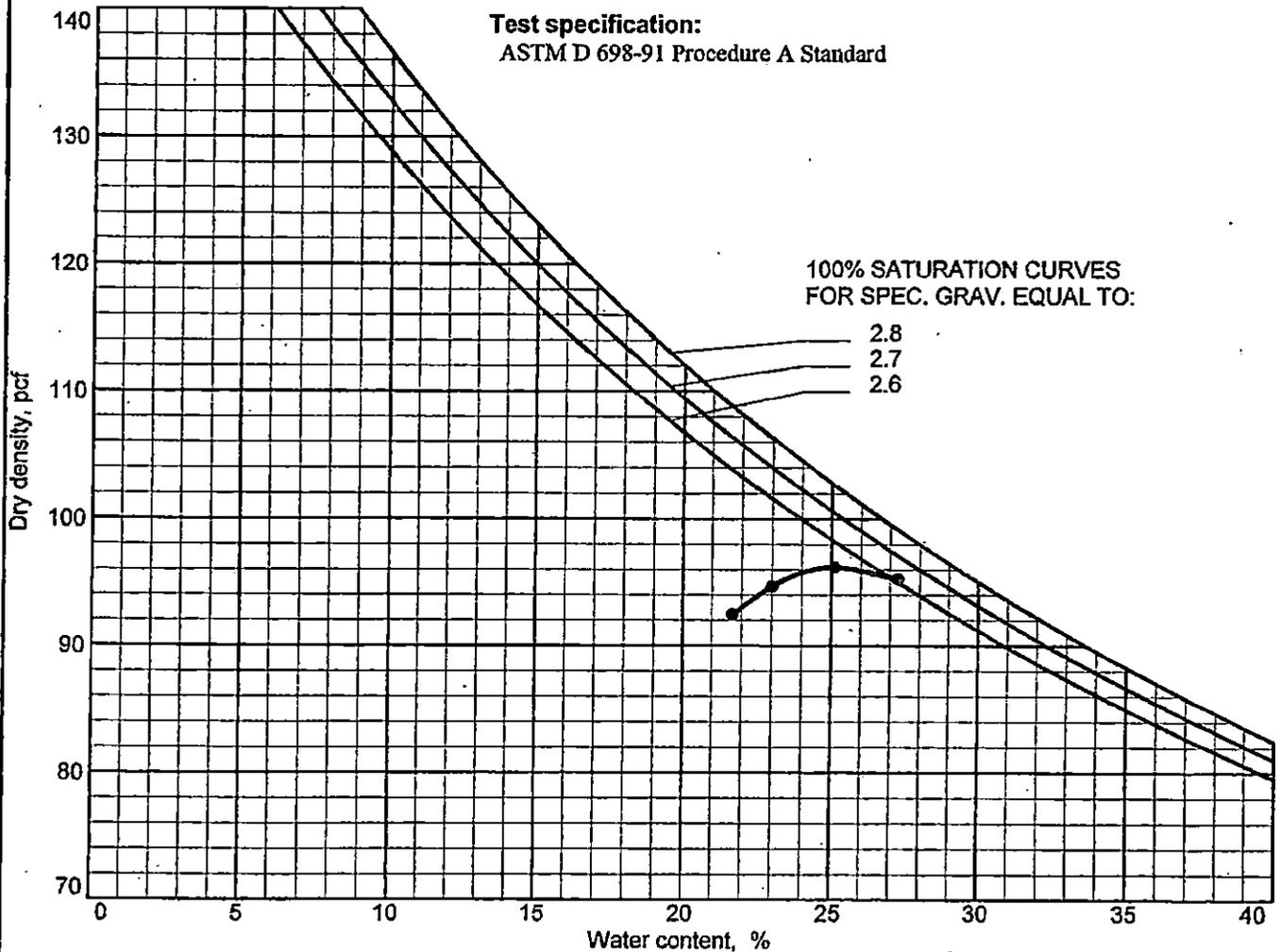
% > No.4 = 0.5 %

% < No.200 = 84.5 %

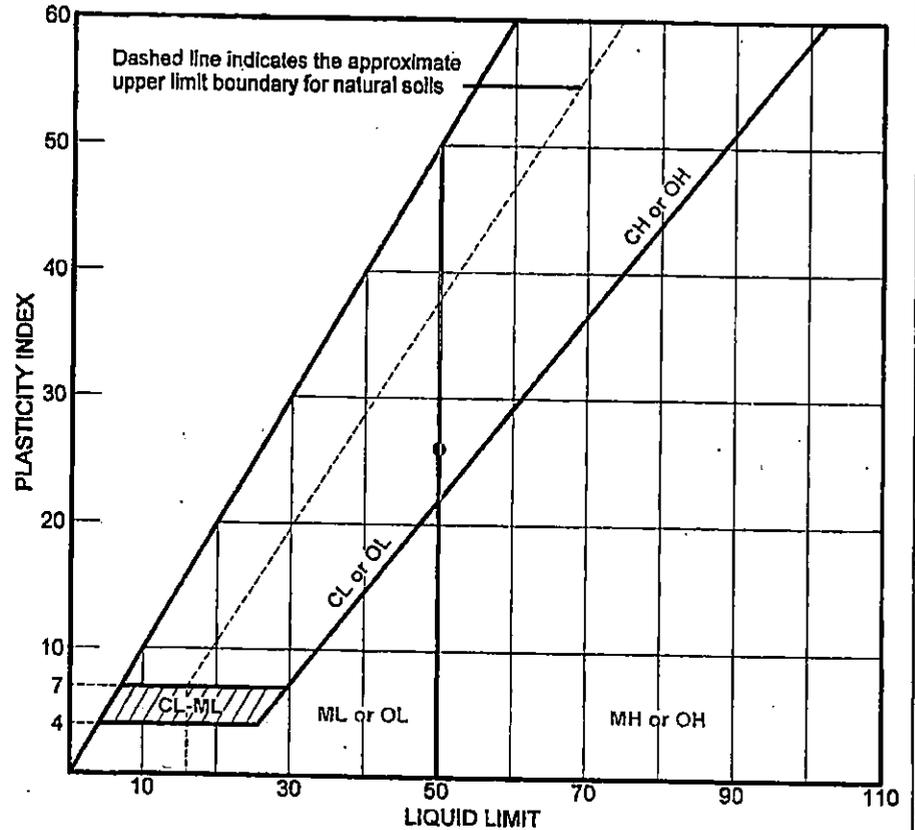
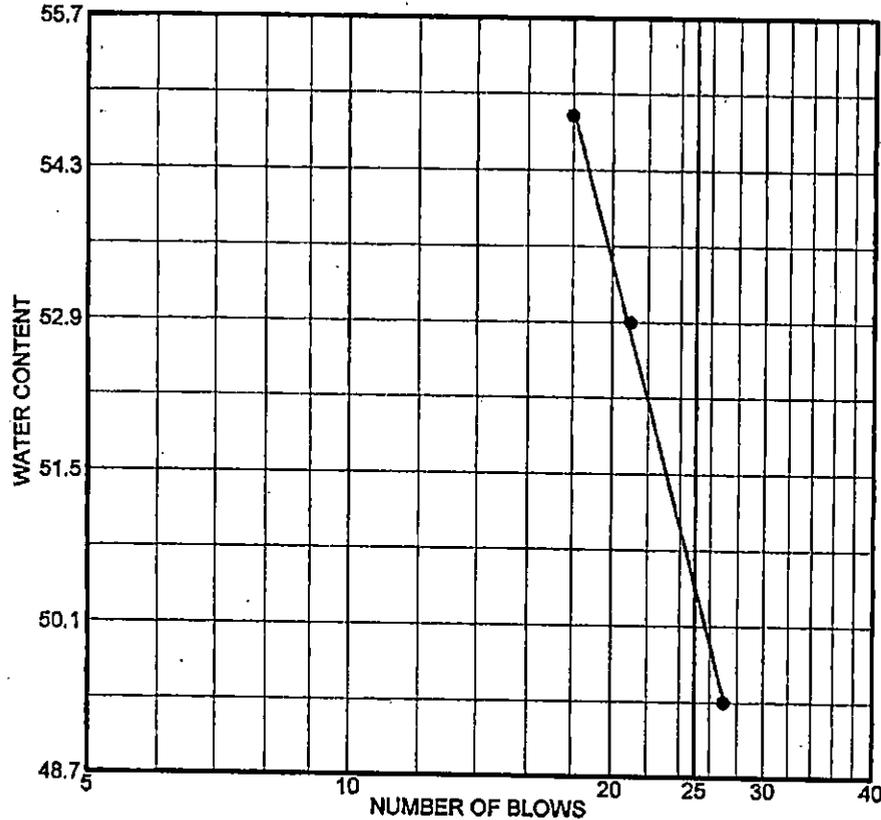
TEST RESULTS

Maximum dry density = 96 pcf

Optimum moisture = 25 %



LIQUID AND PLASTIC LIMITS TEST REPORT



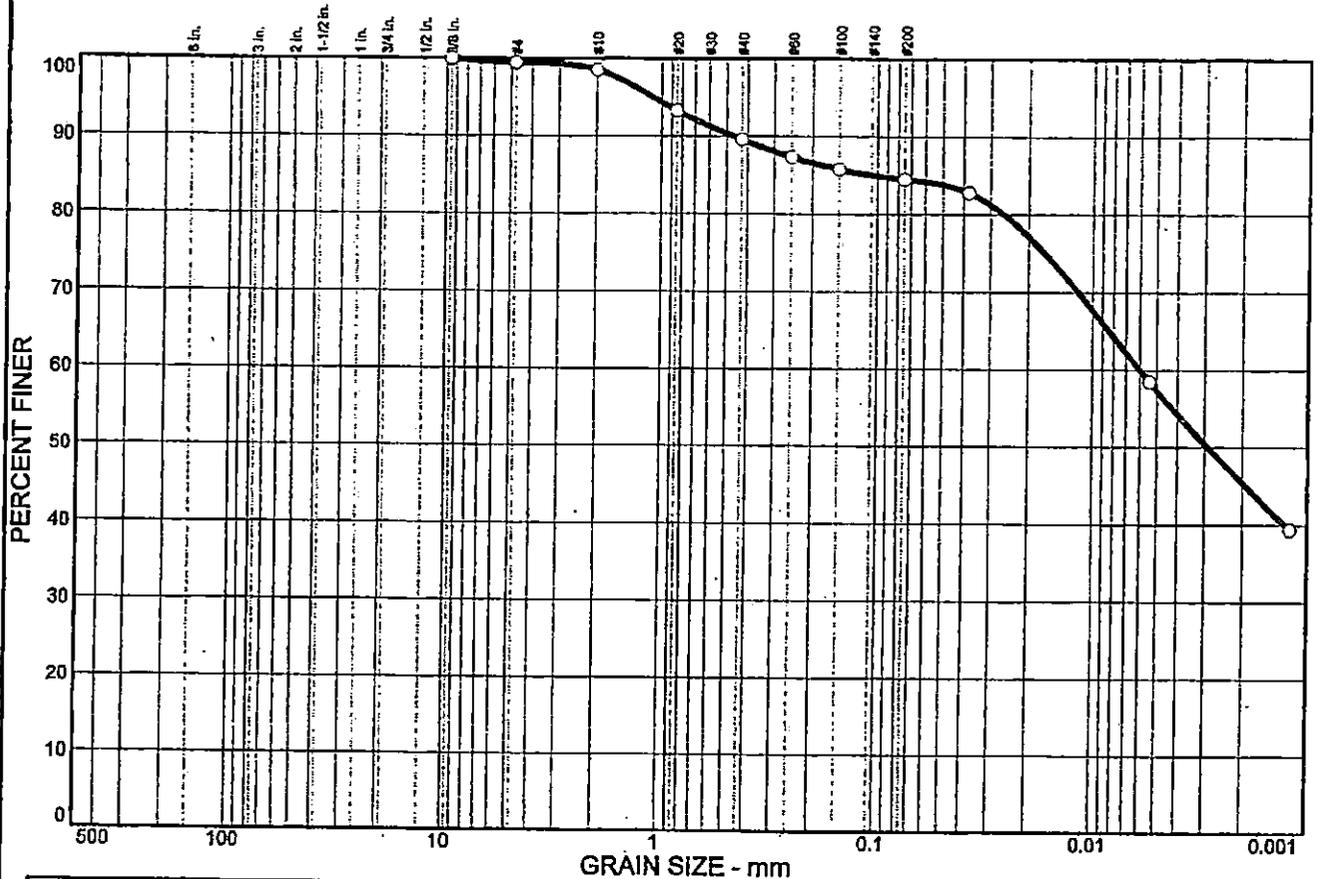
| SOURCE | SAMPLE # | DEPTH/ELEV. | DATE SAMPLED | USCS | MATERIAL DESCRIPTION | NM % | LL | PI |
|--|----------|-------------|--------------|------|--|------|----|----|
| • OAK HILL DR., STA.14+52.8, 6' RT. C.L. | 13884 | 2.2'-4.2' | 8-20-02 | CH | BROWN TO REDDISH BROWN, DAMP, HIGH PLASTICITY, STIFF FAT CLAY (CH) WITH SAND (WEATHERED CHERT FRAGMENTS), A-7-6(23). | 26.2 | 50 | 26 |
| | | | | | | | | |

Client SHERMAN CARTER BARNHART, PSC
 Project MEADOWS-NORTHLAND-ARLINGTON
 NEIGHBORHOOD IMPROVEMENT PROJECT
 Project No. 2095

**GREGG
 LABORATORIES, INC.**

• OAK HILL DR., STA.14+52.8, 6' RT. C.L.
 LAB #13884

Particle Size Distribution Report



| % + 3" | % GRAVEL | | % SAND | | | % FINES | |
|--------|----------|------|--------|--------|------|---------|------|
| | CRS. | FINE | CRS. | MEDIUM | FINE | SILT | CLAY |
| 0.0 | 0.0 | 0.5 | 1.0 | 8.9 | 5.1 | 27.1 | 57.4 |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|------------|---------------|----------------|--------------|
| .375 in. | 100.0 | | |
| #4 | 99.5 | | |
| #10 | 98.5 | | |
| #20 | 93.3 | | |
| #40 | 89.6 | | |
| #60 | 87.4 | | |
| #100 | 85.8 | | |
| #200 | 84.5 | | |

Soil Description
 BROWN TO REDDISH BROWN, DAMP, HIGH PLASTICITY, STIFF FAT CLAY (CH) WITH SAND (WEATHERED CHERT FRAGMENTS), A-7-6(23).

Atterberg Limits
 PL= 24 LL= 50 PI= 26

Coefficients
 D₈₅= 0.104 D₆₀= 0.0060 D₅₀= 0.0029
 D₃₀= D₁₅= D₁₀=
 C_u= C_c=

Classification
 USCS= CH AASHTO= A-7-6(23)

Remarks
 OAK HILL DR., STA.14+52.8, 6' RT., CL.L.
 LAB #13884
 F.M.=0.15

* (no specification provided)

Sample No.: 13884
 Location:

Source of Sample: OAK HILL DR., STA.14+52.8, 6' RT. C.L. Date: 8-20-02
 Elev./Depth: 2.2'-4.2'

| | |
|-------------------------------------|--|
| GREGG LABORATORIES, INC. | Client: SHERMAN CARTER BARNHART, PSC Project: MEADOWS-NORTHLAND-ARLINGTON NEIGHBORHOOD IMPROVEMENT PROJECT Project No: 2095 Plate |
|-------------------------------------|--|

COMPACTION TEST REPORT

Curve No.: 12

Project No.: 2095

Date: 9-21-02

Project: MEADOWS-NORTHLAND-ARLINGTON
NEIGHBORHOOD IMPROVEMENT PROJECT

Location: PHASE 5

Elev./Depth: 0.2'-5.2'

Remarks: PARK VIEW AVE. STA.0+99.7, 14.3' RT. C.L.
LAB #13905

MATERIAL DESCRIPTION

Description: LIGHT BROWN TO ORANGE BROWN, DAMP, HIGH PLASTICITY, STIFF FAT CLAY (CH) WITH SAND (PHOSPHATE NODULES), A-7-6(30).

Classifications -

USCS: CH

AASHTO: A-7-6(30)

Nat. Moist = 24.4 %

Sp.G. = 2.78

Liquid Limit = 59

Plasticity Index = 33

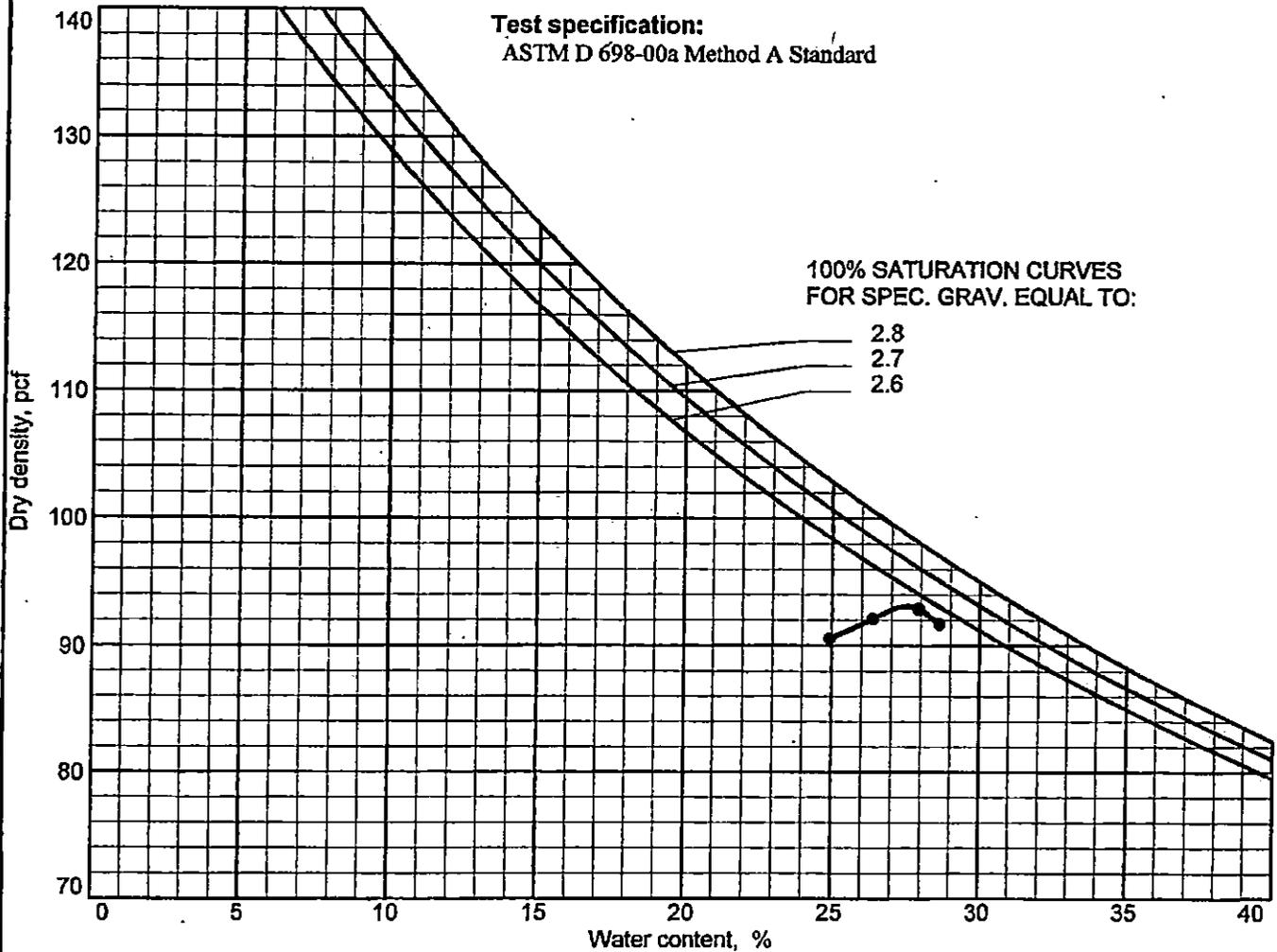
% > No.4 = 0.0 %

% < No.200 = 82.7 %

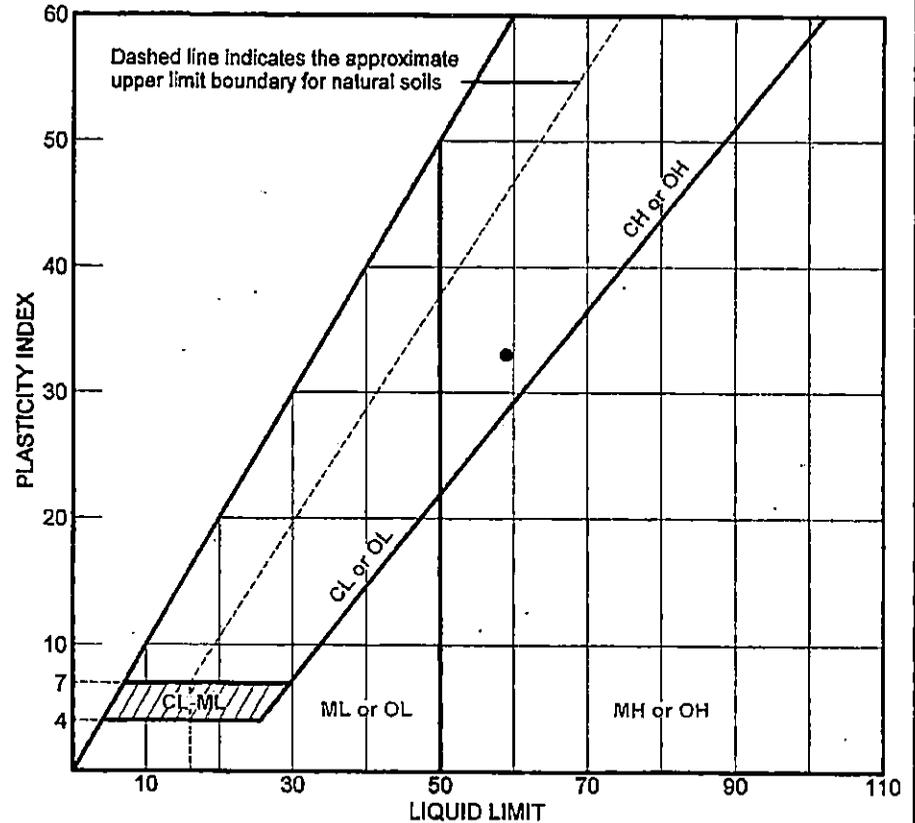
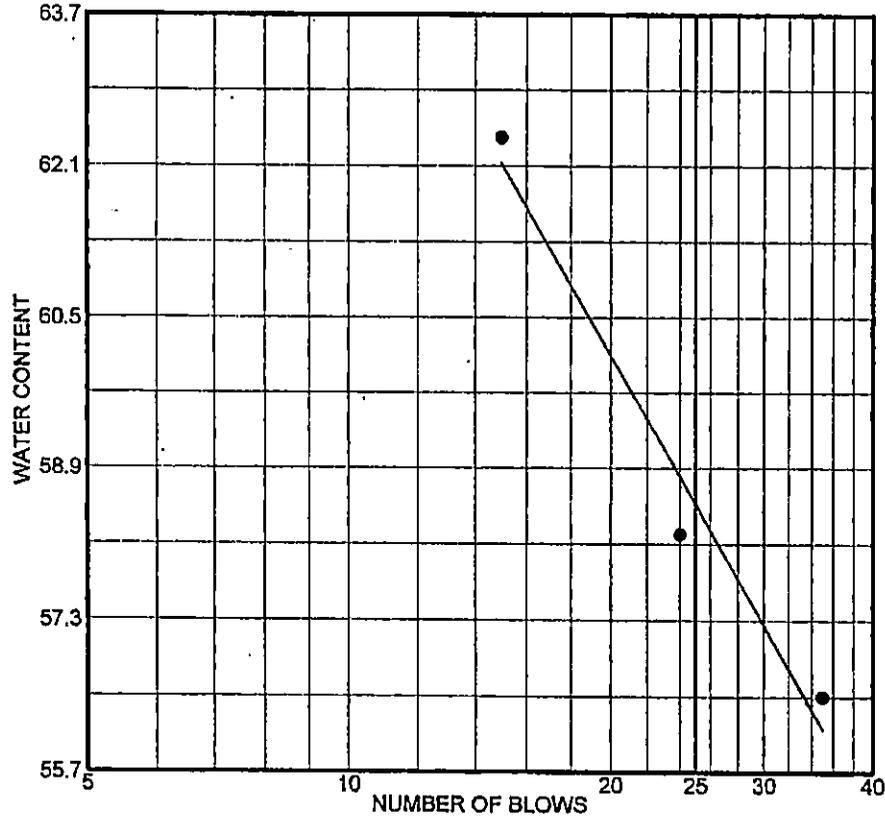
TEST RESULTS

Maximum dry density = 93 pcf

Optimum moisture = 27.5 %



LIQUID AND PLASTIC LIMITS TEST REPORT



| SOURCE | SAMPLE # | DEPTH/ELEV. | DATE SAMPLED | USCS | MATERIAL DESCRIPTION | NM % | LL | PI |
|---|----------|-------------|--------------|------|---|------|----|----|
| ● PARK VIEW AVE. STA.0+99.7, 14.3' RT. C.L. | 13905 | 0.2'-5.2' | 8-21-02 | CH | LIGHT BROWN TO ORANGE BROWN, DAMP, HIGH PLASTICITY, STIFF FAT CLAY (CH) WITH SAND (PHOSPHATE NODULES), A-7-6(30). | 24.4 | 59 | 33 |
| | | | | | | | | |

Client SHERMAN CARTER BARNHART, PSC
 Project MEADOWS-NORTHLAND-ARLINGTON
 NEIGHBORHOOD IMPROVEMENT PROJECT
 Project No. 2095 Plate

**GREGG
 LABORATORIES, INC.**

● PARK VIEW AVE. STA.0+99.7, 14.3' RT. C.L.
 LAB #13905

COMPACTION TEST REPORT

Curve No.: 11

Project No.: 2095

Date: 9-21-02

Project: MEADOWS-NORTHLAND-ARLINGTON
NEIGHBORHOOD IMPROVEMENT PROJECT

Location: PHASE 5

Elev./Depth: 0.9'-3.7'

Remarks: PARK VIEW AVE. STA.4+58.2, 13.2' RT. C.L.
LAB #13904

MATERIAL DESCRIPTION

Description: BROWN TO YELLOW/BROWN, DAMP, HIGH PLASTICITY, STIFF FAT CLAY (CH) WITH SAND (PHOSPHATE NODULES), A-7-6(24).

Classifications -

USCS: CH

AASHTO: A-7-6(24)

Nat. Moist = 31.9 %

Sp.G. = 2.68

Liquid Limit = 54

Plasticity Index = 26

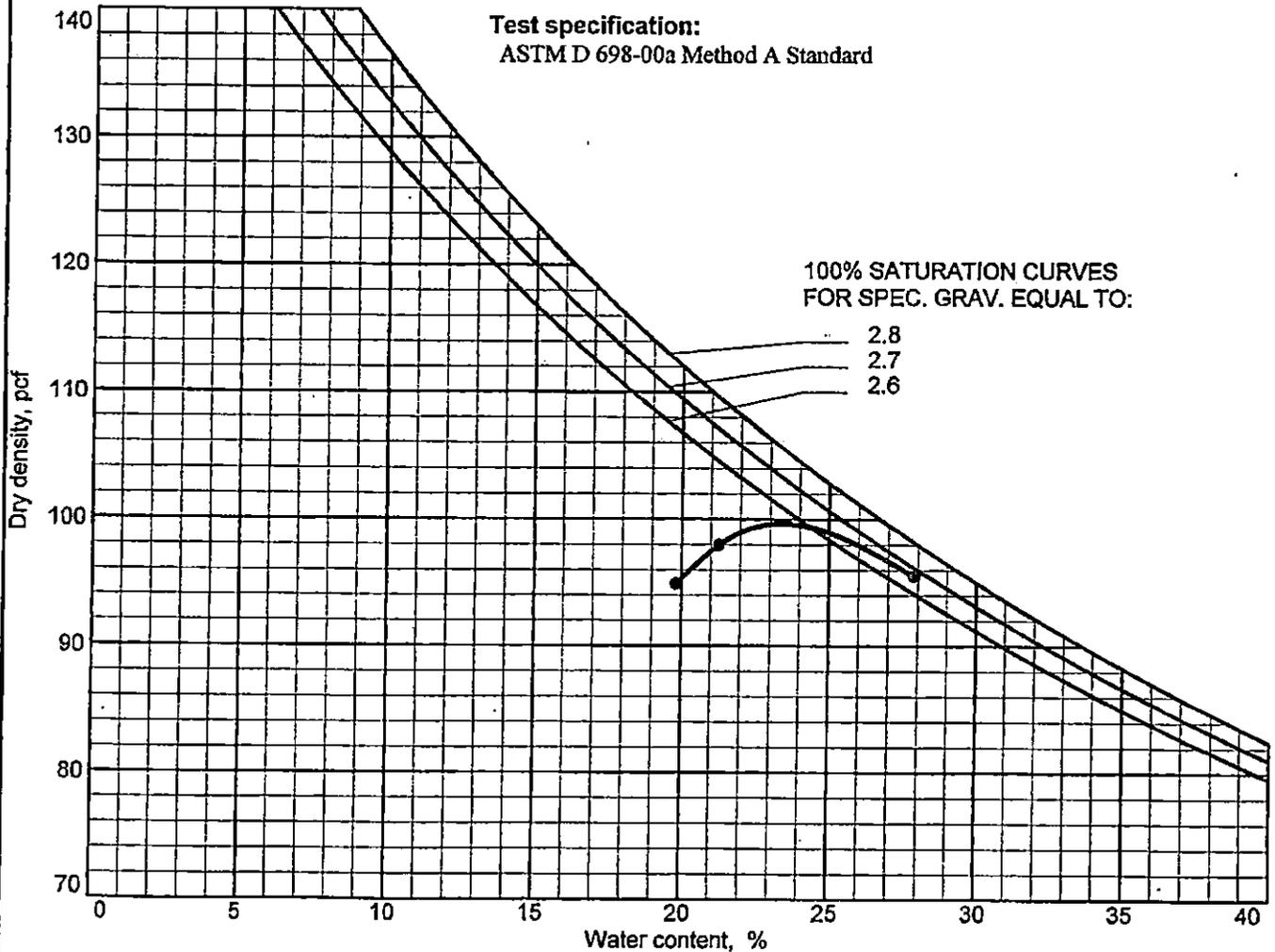
% > No.4 = 2.0 %

% < No.200 = 83.8 %

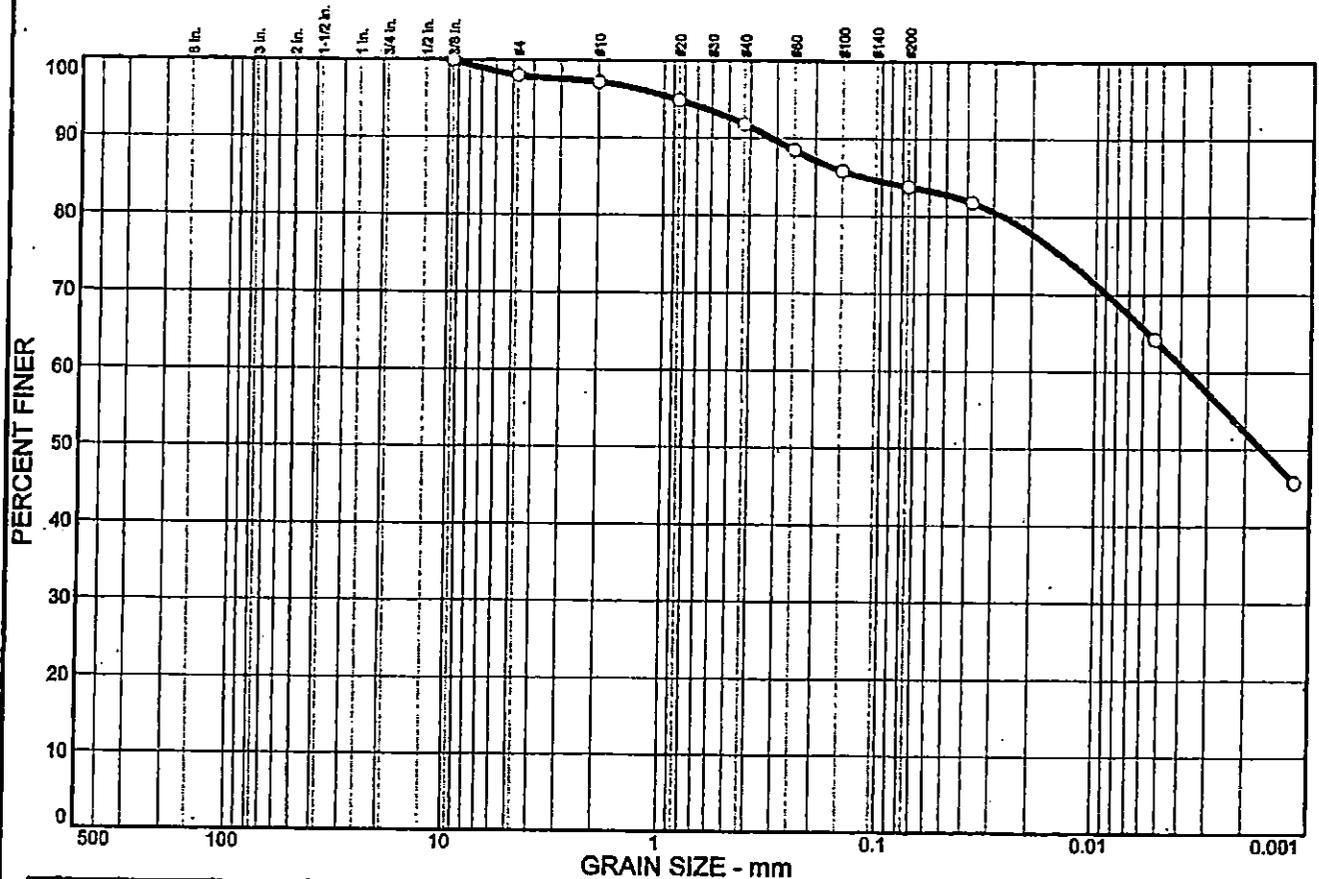
TEST RESULTS

Maximum dry density = 99 pcf

Optimum moisture = 23 %



Particle Size Distribution Report



| % + 3" | % GRAVEL | | % SAND | | | % FINES | |
|--------|----------|------|--------|--------|------|---------|------|
| | CRS. | FINE | CRS. | MEDIUM | FINE | SILT | CLAY |
| 0.0 | 0.0 | 2.0 | 0.8 | 5.4 | 8.0 | 20.3 | 63.5 |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|------------|---------------|----------------|--------------|
| .375 in. | 100.0 | | |
| #4 | 98.0 | | |
| #10 | 97.2 | | |
| #20 | 94.9 | | |
| #40 | 91.8 | | |
| #60 | 88.5 | | |
| #100 | 85.8 | | |
| #200 | 83.8 | | |

Soil Description

BROWN TO YELLOW/BROWN, DAMP, HIGH PLASTICITY, STIFF FAT CLAY (CH) WITH SAND. (PHOSPHATE NODULES), A-7-6(24).

Atterberg Limits

PL= 28 LL= 54 PI= 26

Coefficients

D₈₅= 0.120 D₆₀= 0.0037 D₅₀= 0.0017
 D₃₀= D₁₅= D₁₀=
 C_u= C_c=

Classification

USCS= CH AASHTO= A-7-6(24)

Remarks

PARK VIEW AVE. STA.4+58.2, 13.2' RT. C.L.
 LAB #13904
 F.M.=0.16

* (no specification provided)

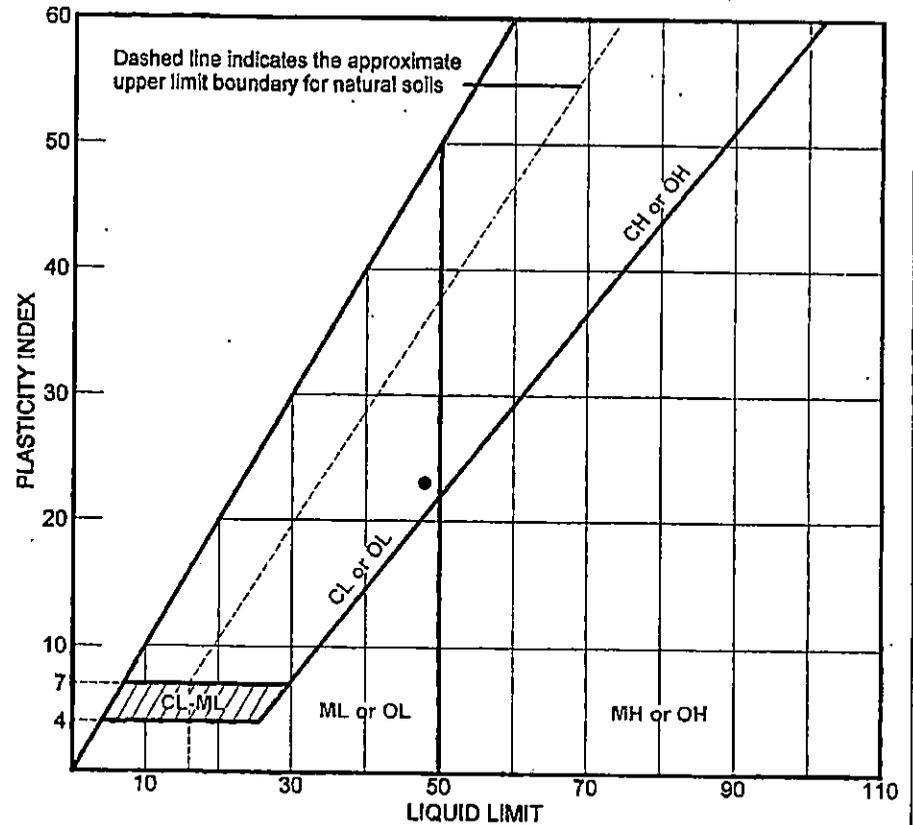
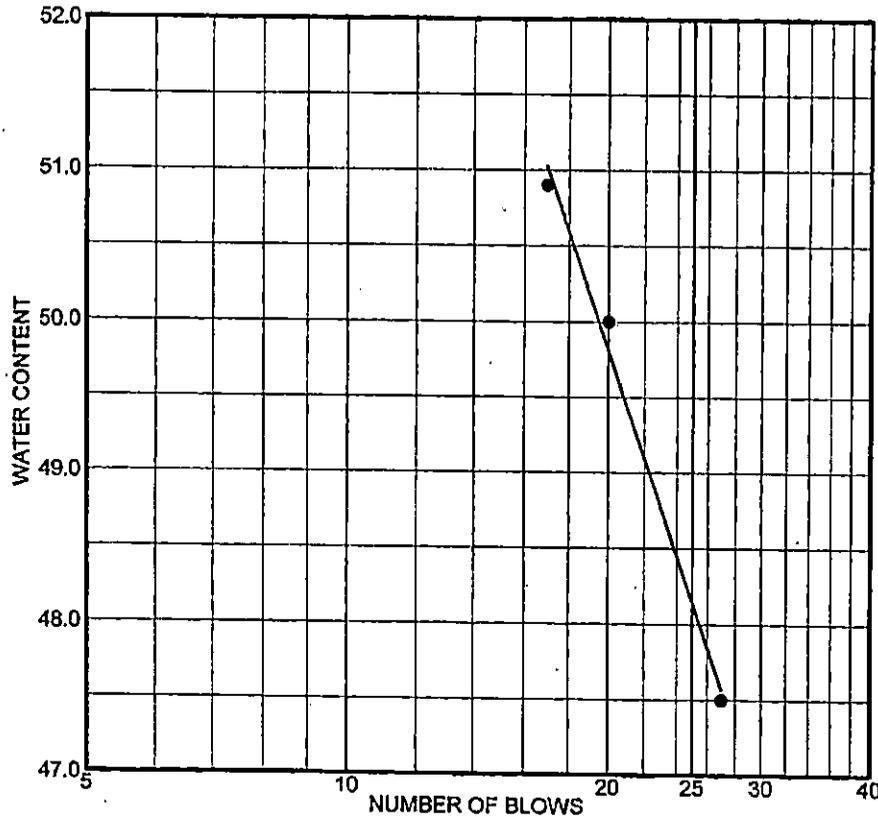
Sample No.: 13904
 Location:

Source of Sample: PARK VIEW AVE. STA.4+58.2, 13.2' RT. C.L. Date: 8-22-02
 Elev./Depth: 0.9'-3.7'

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Client: SHERMAN CARTER BARNHART, PSC
 Project: MEADOWS-NORTHLAND-ARLINGTON
 NEIGHBORHOOD IMPROVEMENT PROJECT
 Project No: 2095 Plate

LIQUID AND PLASTIC LIMITS TEST REPORT



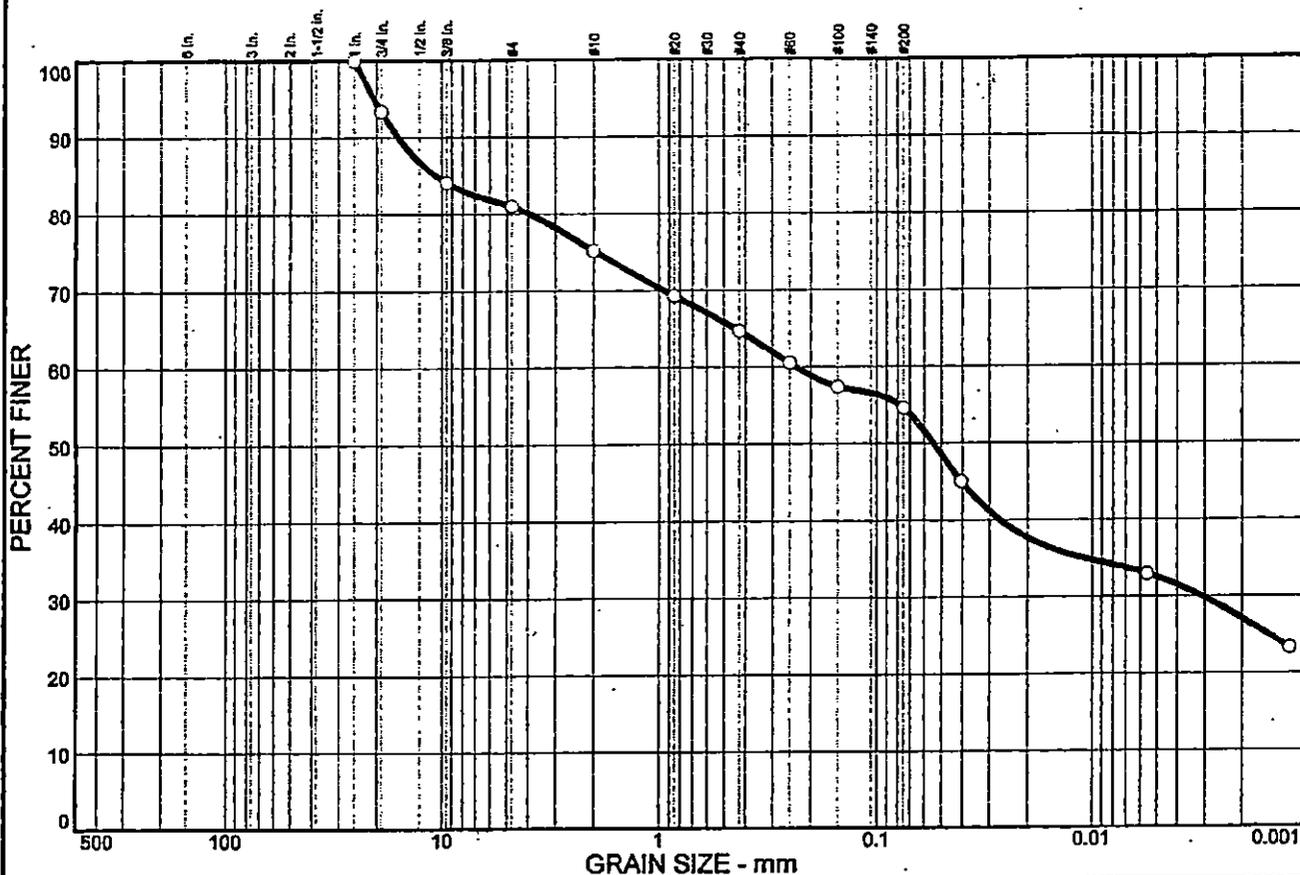
| SOURCE | SAMPLE # | DEPTH/ELEV. | DATE SAMPLED | USCS | MATERIAL DESCRIPTION | NM % | LL | PI |
|---|----------|-------------|--------------|------|--|------|----|----|
| ● PARK VIEW AVE., STA. 12+89.6, 9.5' RT. C.L. | 13903 | 0.7'-3.7' | 8-22-02 | CL | BROWN TO DARK BROWN, DAMP, HIGH PLASTICITY, MEDIUM, SANDY LEAN CLAY (CL) WITH GRAVEL (CRUSHED AGGREGATE LIMESTONE), A-7-6(10). | 24.2 | 48 | 23 |
| | | | | | | | | |

Client SHERMAN CARTER BARNHART, PSC
 Project MEADOWS-NORTHLAND-ARLINGTON
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 Project No. 2095

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● PARK VIEW AVE. STA. 12+89.6, 9.5' RT. C.L.
 LAB #13903

Particle Size Distribution Report



| % + 3" | % GRAVEL | | % SAND | | | % FINES | |
|--------|----------|------|--------|--------|------|---------|------|
| | CRS. | FINE | CRS. | MEDIUM | FINE | SILT | CLAY |
| 0.0 | 6.6 | 12.4 | 5.8 | 10.5 | 10.1 | 22.0 | 32.6 |

| SIEVE SIZE | PERCENT FINER | SPEC.* PERCENT | PASS? (X=NO) |
|------------|---------------|----------------|--------------|
| 1 in. | 100.0 | | |
| .75 in. | 93.4 | | |
| .375 in. | 84.1 | | |
| #4 | 81.0 | | |
| #10 | 75.2 | | |
| #20 | 69.3 | | |
| #40 | 64.7 | | |
| #60 | 60.5 | | |
| #100 | 57.4 | | |
| #200 | 54.6 | | |

Soil Description

BROWN TO DARK BROWN, DAMP, HIGH PLASTICITY, MEDIUM, SANDY LEAN CLAY (CL) WITH GRAVEL (CRUSHED AGGREGATE LIMESTONE), A-7-6(10).

Atterberg Limits

PL= 25 LL= 48 PI= 23

Coefficients

D₈₅= 10.7 D₆₀= 0.234 D₅₀= 0.0542
 D₃₀= 0.0031 D₁₅= D₁₀=
 C_u=

Classification

USCS= CL AASHTO= A-7-6(10)

Remarks

PARK VIEW AVE. STA.12+89.6, 9.5' RT. C.L.
 LAB #13903
 F.M.=0.84

* (no specification provided)

Sample No.: 13903
 Location:

Source of Sample: PARK VIEW AVE., STA.12+89.6, 9.5' RT. Date: 8-22-02
 Elev./Depth: 0.7'-3.7'

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Client: SHERMAN CARTER BARNHART, PSC
 Project: MEADOWS-NORTHLAND-ARLINGTON
 NEIGHBORHOOD IMPROVEMENT PROJECT
 Project No: 2095 Plate