

PROJECT MANUAL FOR

PRINCETON-CALDWELL COUNTY INDUSTRIAL AUTHORITY

CALDWELL COUNTY, KENTUCKY

PRINCETON INDUSTRIAL PARK

BUILD READY SITE PREPARATION PROJECT

OCTOBER, 2014

PRINCETON-CALDWELL COUNTY INDUSTRIAL AUTHORITY

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SECTION 00020 - ADVERTISEMENT FOR BIDS
Princeton-Caldwell County Industrial Authority
Princeton Industrial Park Build Ready Site Preparation Project
Caldwell County, Kentucky

Sealed bids for the construction of the Princeton Industrial Park, Building Pad Site Preparation for the KY Certified "Build Ready" Program for the Princeton-Caldwell County Industrial Authority, will be received in the office of the Farmers Bank, 111 West Washington Street, Princeton, KY, 42445 Attn: Scott M. Laffoon, Chairman, until 2:00 p.m., local time, November 7, 2016 and then at said office will be publicly opened and read aloud. General questions may be directed to Glen Ross, Project Engineer at (859) 223-5694.

Work includes earth work for a building pad, approximately 200,000 sq. ft. in size at the Princeton Industrial Park. The CONTRACT DOCUMENTS may be reviewed at the following locations:

MSE of Kentucky, Inc., 624 Wellington Way, Lexington, KY 40503
MSE Web Site (viewed or downloaded): mselex.com under Bid Opportunities (call MSE engineers at 859-223-5694)
Princeton-Caldwell County Industrial Authority at location stated above.

Printed/Copies of the Contract Documents may be obtained at the office of Lynn Imaging, 328 E. Vine St., Lexington, KY 40507, (859) 226-5850 upon receipt of a check made payable to Lynn Imaging in the amount of \$150.00 (non-refundable). All orders must be prepaid. There will be a 24 hour turn-around on all orders.

A certified check or bank draft, payable to the Princeton-Caldwell County Industrial Authority, government bonds, or a satisfactory bid bond executed by the bidder and acceptable sureties in an amount equal to five percent of the bid shall be submitted with bid. The successful bidder will be required to furnish and pay for a performance and payment bond for 100% of the contract price.

The Owner may consider informal any bid not prepared and submitted in accordance with the provisions of this advertisement and/or the specifications and may waive any informalities or reject any and all Bids. Any proposal received after the time and date specified shall not be considered and will be returned unopened to the proposer.

Sealed bid should be labeled "Princeton Industrial Park Build Ready Site Preparation Project". If mailed, bid should be enclosed in another envelope and addressed to: Princeton-Caldwell County Industrial Authority c/o Farmers Bank, Attn: Scott M. Laffoon, Chairman, P.O. Box 559, Princeton, KY 42445. No Bidder may withdraw his Bid for a period of sixty (60) days after the actual date of the opening thereof.

State Wage Rates do not apply to this project.

Award will be made to the lowest, responsive, responsible bidder. Bidding is for the sole benefit of the Princeton-Caldwell County Industrial Authority.

SECTION 00200 - INFORMATION FOR BIDDERS

Bids will be received by the Princeton-Caldwell County Industrial Authority (herein called the "Owner") at the time and place described in the invitation to bid and then at said office publicly opened and read aloud.

Each Bid must be submitted in a sealed envelope, addressed to Scott M. Laffoon, Chairman, Princeton-Caldwell County Industrial Authority, c/o Farmers Bank, 111 West Washington St., Princeton, KY 42445. Each sealed envelope containing a Bid must be plainly marked on the outside as "Bid for Princeton Industrial Park Build Ready Site Preparation Project", and the envelope should bear on the outside the BIDDER'S name, address and license number if applicable. If forwarded by mail, the sealed envelope containing the Bid must be enclosed in another envelope addressed to the Princeton-Caldwell County Industrial Authority, Attn: Scott M. Laffoon, Chairman, c/o Farmers Bank, P.O. Box 559, Princeton, KY 42445.

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

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

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

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

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

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

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

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

The party(s) to whom the contract(s) are awarded will be required to execute the Agreement and obtain the Performance Bond and Payment Bond within ten (10) calendar days from the date when Notice of Award is delivered to the BIDDER. The Notice of Award shall be accompanied by the necessary Agreement and Bond forms. In case of failure of the BIDDER to execute the Agreement, the OWNER may consider the BIDDER in default, in which case the Bid Bond accompanying the proposal shall become the property of the OWNER.

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

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

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

A conditional or qualified Bid will not be accepted.

Award will be made to the lowest responsible BIDDER.

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

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

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

End of Section

SECTION 00310 - BID FORM

PRINCETON-CALDWELL COUNTY INDUSTRIAL AUTHORITY

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

In compliance with your Invitation to Bid, BIDDER hereby proposes to furnish all equipment, materials, and labor for the work required to construct the Princeton Industrial Park Build Ready Site Preparation Project, in strict accordance with the Contract Documents, within the time set forth therein, and at the prices stated below.

ITEM & DESCRIPTION	ESTIMATED QUANTITY		UNIT PRICE	TOTAL

1. Erosion Control Measures. Prepare "Best Management Practice" plan for erosion control and send "Notice of Intent" to the Natural Resources and Environmental Protection Cabinet. Implement erosion control measures. Remove erosion control structures after all work completed. Send "Notice of Termination" to the Cabinet upon completion of work.				
A. Silt Fence	2,100	L.F.	\$ _____	\$ _____
B. Stone Filled Bag Silt Checks, Type D	2	Ea.	\$ _____	\$ _____
C. Erosion Control Blanket	10,000	S.Y.	\$ _____	\$ _____
D. Clean Silt Fence	2,100	L.F.	\$ _____	\$ _____
E. All Other Erosion Control Requirements		L.S.		\$ _____
2. Strip and Stockpile Topsoil. Furnish all labor, equipment and materials and clear and strip embankment areas prior to earth and rock work.				
Strip and Stockpile Topsoil		L.S.		\$ _____
3. Earth and Rock Work (Unclassified). Furnish all labor and equipment and excavate undercut, re-fill and construct fill to elevations shown. Proof roll pad for suitability for quality control.				
Earth and Rock Work		L.S.		\$ _____
4. Crushed Stone Road. Furnish all labor, equipment and materials and place crushed stone aggregate for entrance road (includes filter fabric).				
A. Crushed Stone Base	250	Ton	\$ _____	\$ _____
B. Road Stripping/Earthwork		L.S.		\$ _____
5. Grassed Surface Restoration. Furnish all labor, equipment and materials to fertilize, seed and straw areas disturbed by earth and rock work. Includes spreading of any stockpiled topsoil/soil. Any large rocks or boulders removed by excavation are to be re-buried.				
A. Re-Spread Topsoil		L.S.		\$ _____
B. Grassed Surface Restoration (Seeding)		L.S.		\$ _____
6. Allowance for Quality Assurance Testing. A qualified firm designated by the Engineer will provide testing and inspection services. Any unused portion of the allowance will be retained by the Owner.				
Allowance for Testing		L.S.		\$ <u>12,000</u>

7. Other Costs. Include mobilization, demobilization, construction staking, project sign and other costs.

Other Costs	L.S.	\$ _____
	TOTAL BID	\$ _____

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

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

BIDDER hereby agrees to commence Work under this contract on or before a date to be specified in the Notice to Proceed and to complete the work within one hundred twenty (120) days. BIDDER further agrees to pay as liquidated damages, the sum of \$500 for each consecutive calendar day thereafter as provided in the General Conditions and the Special Conditions.

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

BIDDER acknowledges receipt of the following Addenda:

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

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

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

Within ten (10) calendar days after receiving written notice of the acceptance of this Bid by the OWNER, the Bidder will execute and deliver to the OWNER three (3) copies of the Agreement and such other required Contract Documents.

BIDDER: _____
(Name of Company or Partnership)

By: _____
(Signature) (Date)

(Print Name)

(Title)

(Address)

(Phone Number)

Attested By: _____
(Signature) (Date)

Seal (If bid is by a corporation)

End of Section

SECTION 00320 - BID BOND

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

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

Signed and sealed this _____ day of _____ 2015.

Principal

Witness

By: _____

Surety

Witness

By: _____
Attorney-in-fact

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

End of Section

SECTION 00490 - NOTICE OF AWARD

TO: _____

Project Description: _____

The OWNER has considered the BID submitted by you for the above described WORK in response to its Invitation to Bid dated _____, 20 ____ and Information for Bidders.

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

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

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

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

Dated this _____ day of _____, 20_____.

Owner

By: _____

(Name, Title)

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by _____, this
the _____ day of _____, 20 _____.

By: _____

(Name, Title)

SECTION 00500 - AGREEMENT

THIS AGREEMENT, made this _____ day of _____, 20____, by and between _____, hereinafter called "OWNER" and _____, doing business as _____ (insert "a corporation", "a partnership", or "an individual" as applicable) hereinafter called "CONTRACTOR".

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

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

shall all be done in compliance with the General Conditions. Upon final completion of the work and settlement of all claims, OWNER shall pay the remainder of the Contract Price.

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

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

 (Owner)

By: _____
 (Signature) (Date)

 (Name, Title)

 (Contractor)

By: _____
 (Signature) (Date)

 (Name, Title)

Attest:

By: _____
 (Signature) (Date)

 (Name, Title)

Attest:

By: _____
 (Signature) (Date)

 (Name, Title)

End of Section

SECTION 00600 - PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

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

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

(Name of Owner)

(Address of Owner)

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

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

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

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

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

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

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

ATTEST:

(Principal) Secretary
By: _____
Principal

(SEAL)

(Witness as to Principal)

(Address)

(Address)

(Surety)

ATTEST:

(Surety) Secretary
(SEAL)

(Witness as to Surety)

(Address)

(Address)

Attorney-in-fact

(Address)

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

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

End of Section

SECTION 00602 - PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

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

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

(Name of Owner)

(Address of Owner)

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

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

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

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

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

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

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

ATTEST:

_____	_____
(Principal) Secretary	Principal
(SEAL)	By: _____
_____	_____
(Witness as to Principal)	(Address)
_____	_____
(Address)	
_____	_____
	(Surety)

ATTEST:

(Surety) Secretary	
(SEAL)	
_____	_____
(Witness as to Surety)	Attorney-in-fact
_____	_____
(Address)	(Address)
_____	_____

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

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

End of Section

SECTION 00680 - NOTICE TO PROCEED

TO: _____

Date: _____
Project: _____

You are hereby notified to commence WORK in accordance with the Agreement dated _____, 20____, on or before _____, 20____, and you are to complete the WORK within _____ consecutive calendar days thereafter.

The date of completion of all work is therefore _____, 20_____.

Owner

By: _____

Name

Title

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by _____, this the _____ day of _____, 20_____.

By: _____

Name

Title

End of Section

SECTION 00700 - GENERAL CONDITIONS

1. Definitions
2. Execution, Correlation and Intent of Documents
3. Starting the Project
4. Contract Documents
5. Contractor's Pre-Start Representations
6. Indemnity
7. Insurance
8. Guaranty Bond
9. Additional Bonds and Insurance
10. Availability of Lands
11. Unforeseen Physical Conditions
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13. Superintendence - Supervision
14. Materials, Appliances, Employees
15. Substitute Materials or Equipment
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18. Permits, Laws and Regulations
19. Taxes
20. Safety and Protection
21. Shop Drawings and Samples
22. Record Drawings
23. Use of Premises
24. Cleaning
25. Work By Others
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27. Engineer's Decision on Disagreements
28. Status of Engineer's Project Representative
29. Changes in the Work
30. Changes of Contract Price
31. Cash Allowance
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37. Stopping the Work
38. Correction of Work Before Final Payment
39. One Year Correction Period
40. Acceptance of Defective Work
41. Neglected Work By Contractor
42. Application for Payment
43. Approval of Payments
44. Substantial Completion
45. Partial Utilization
46. Final Payment
47. Owner's Right to Suspend Work
48. Owner's Right to Terminate Contract
49. Contractor's Right to Stop Work or Terminate
50. Arbitration by Mutual Consent
51. Computation of Time
52. Assignments
53. Ownership of Drawings
54. Compliance With Prevailing Wage Law (Where Applicable)
55. Measurement and Computation of Quantities
56. Project Signs

1. Definitions

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Drawings - The drawings which show the character and scope of work to be performed and which have been prepared or approved by Engineer and are referred to in the Contract Documents. Included with the plan sheet drawings are Atmos Energy drawings and standard details.

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

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

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

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

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

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

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

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

Specifications - Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the work. Included by reference are Atmos Energy gas system construction standards and specifications.

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

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

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

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

2. Execution, Correlation and Intent of Documents

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

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

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

The Contract Documents are complementary; what is called for by one is as binding as if called for by all. If Contractor finds a conflict, error or discrepancy in the Contract Documents, he shall call it to Engineer's

attention in writing at once and before proceeding with the work affected thereby; however, he shall not be liable to Owner or Engineer for his failure to discover any conflict, error or discrepancy in the Specifications or Drawings. In resolving such conflicts, errors and discrepancies, the documents shall be given precedence in the following order: Agreement, Modifications, Addenda, Special Conditions, Information for Bidders, General Conditions, Specifications and Drawings. Figure dimensions on Drawings shall govern over general Drawings. Any work that may reasonably be inferred from the Specifications or Drawings as being required to produce the intended result shall be supplied whether or not it is specifically called for. Work, materials or equipment described in words which so applied have a well-known technical or trade meaning shall be deemed to refer to such recognized standards.

3. Starting the Project

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

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

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

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

4. Contract Documents

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

5. Contractor's Pre-Start Representations

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

6. Indemnity

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

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

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

7. Insurance

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

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

- a. Compensation Insurance - The Contractor shall take out and maintain during the life of this contract Workmen's Compensation Insurance for all of his employees employed at the site of the project, and, in case any work is sublet, the Contractor shall require the subcontractor similarly to provide Workmen's Compensation Insurance for all of the latter's employees unless such employees are covered by the protection afforded by the Contractor.
- b. Public Liability and Property Damage Insurance - The Contractor shall take out and maintain during the life of this contract such Public Liability and Property Damage Insurance as shall protect him and any subcontractor performing work covered by this contract, from claims for

damages for personal injury, including accidental death, as well as for claims for property damages which may arise from operations under this contract, whether such operations be by himself or by any subcontractor or by anyone directly or indirectly employed by either of them. The insurance will include as additional named insured: the Owner and Engineer and his Consultants; and each of their officers, agents and employees.

- c. Contingent Public Liability and Property Damage Insurance - If any subcontracts are awarded, subparagraph "b" above shall be interpreted to require that the General Contractor shall take out and maintain Contractor's contingent public liability and property damage insurance in the amounts required under the "Special Conditions".
- d. Builder's Risk Insurance or Installation Floater - The Contractor shall provide "All Risk" type Builder's Risk Insurance including coverage for fire, lightning, explosion, wind, hail, riot, aircraft, smoke, collapse, extended coverage, vandalism and malicious mischief. Unless specifically authorized by the Owner, the amount of such insurance shall not be less than the contract price totaled in the bid. Deductible amount shall not exceed \$250.

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

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

8. Guaranty Bond

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

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

9. Additional Bonds and Insurance

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

10. Availability of Lands

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

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

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

11. Unforeseen Physical Conditions

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

12. Reference Points

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

13. Superintendence - Supervision

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

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

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

14. Materials, Appliances, Employees

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

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

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

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

The Contractor shall provide competent, suitably qualified personnel to survey and lay out the work and perform construction as required by the Contract Documents. The Contractor shall at all times enforce strict discipline and good order among his employees, and shall not employ on the work any unfit person or anyone not skilled in the work assigned to him.

15. Substitute Materials or Equipment

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

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

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

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

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

16. Subcontracts

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

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

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

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

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

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

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

17. Patent Fees and Royalties

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

18. Permits, Laws and Regulations

Contractor shall obtain and pay for all construction permits and licenses and shall pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of

his bid. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall also pay all public utility charges.

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

19. Taxes

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

20. Safety and Protection

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

- a. All employees on the Work and other persons who may be affected thereby.
- b. All the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site.
- c. Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

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

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

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

Price or an extension of the Contract Time, he may make a claim therefor as provided in these Specifications.

21. Shop Drawings and Samples

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

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

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

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

The Engineer will review and approve with reasonable promptness Shop Drawings and samples, but his review and approval shall be only for conformance with the design concept of the project and for compliance with the information given in the Contract Documents. The approval of a separate item as such will not indicate approval of the assembly in which the item functions. Contractor shall make any corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and resubmit new samples until approved. Contractor shall direct specific attention in writing or on resubmitted Shop Drawings to revisions other than the corrections called for by Engineer on previous submissions. Contractor's stamp of approval on any Shop Drawing or sample shall constitute a representation to Owner and Engineer that Contractor has either determined and verified all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data or he assumes full responsibility for doing so, and that he has reviewed or coordinated each Shop Drawing or sample with the requirements of the Work and the Contract Documents.

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

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

- a. All concrete reinforcement, water stops, pre cast concrete and location of construction joints.
- b. Structural steel, miscellaneous metal and fencing.
- c. Windows and doors.
- d. Piping layouts, including small piping layouts.
- e. Mechanical equipment.
- f. Pumps and related equipment, including pump control equipment.

- g. Building service equipment.
- h. Control and instrumentation, metering equipment.
- i. Electrical equipment and wiring diagrams.
- j. Plumbing, heating, ventilating and air conditioning equipment.

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

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

22. Record Drawings

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

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

23. Use of Premises

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

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

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

24. Cleaning

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

25. Work By Others

The Owner reserves the right to perform additional work related to the project by himself or to let other contracts in connection with the Work. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate his work with theirs.

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

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

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

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

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

26. Engineer's Status During Construction

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

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

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

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

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

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

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

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

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

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

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

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

27. Engineer's Decision on Disagreements

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

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

initiated, such decision may be entered as evidence but shall not supersede the arbitration proceedings, except where the decision is acceptable to the parties concerned.

28. Status of Engineer's Project Representative

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

Resident Project Representative shall:

- a. Schedules: Review the progress schedule, schedule of Shop Drawing submissions, schedule of values and other schedules prepared by Contractor and consult with Engineer concerning their acceptability.
- b. Conferences: Attend pre construction conferences. Arrange a schedule of progress meetings and other job conferences as required in consultation with Engineer and notify in advance those expected to attend. Attend meetings, and maintain and circulate copies of minutes thereof.
- c. Liaison:
 1. Serve as Engineer's liaison with Contractor working principally through Contractor's Superintendent and assist him in understanding the intent of the Contract Documents. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-site operations.
 2. As requested by Engineer, assist in obtaining from Owner additional details or information, when required at the job site for proper execution of the work.
 3. In the interest of preserving the proper channels of communication, advise Engineer of any direct communication between Owner and Contractor.
- d. Shop Drawings and Samples:
 1. Receive and record date of receipt of Shop Drawings and samples which have been approved by Engineer.
 2. Receive samples which are furnished at the site by Contractor for Engineer's approval, and notify Engineer of their availability for examination.
 3. Advise Engineer and Contractor or his Superintendent immediately of the commencement of any Work requiring a Shop Drawing or sample submission if the submission has not been approved by Engineer.
- e. Review of Work, Rejection of Defective Work, Inspections and Tests:
 1. Conduct on-site observations of the Work in progress to assist Engineer in determining that the project is proceeding in accordance with the Contract Documents and that completed Work will conform to the Contract Documents.
 2. Report to Engineer whenever he believes that any Work is unsatisfactory, faulty or defective or does not conform to the Contract Documents, or has been damaged, or does not meet the requirements of any inspections, tests or approvals required to be made;

and advise Engineer when he believes Work should be corrected or rejected or should be uncovered for observation, or requires special testing or inspection.

3. Verify that tests, equipment and system's startups and operating and maintenance instructions are conducted as required by the Contract Documents and in presence of the required personnel, and that Contractor maintains adequate records thereof; observe, record and report to Engineer appropriate details relative to the test procedures and startups.
 4. Accompany Owner and visiting inspectors representing public or other agencies having jurisdiction over the Project, record the outcome of these inspections and report to Engineer.
- f. Interpretation of Contract Documents: Transmit to Contractor clarification and interpretation of the Contract Documents as issued by Engineer.
- g. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report them with recommendations to Engineer.
- h. Records:
1. Maintain at the job site orderly files for correspondence, reports of job conferences, Shop Drawings and sample submissions, reproductions of original Contract Documents including all addenda, change orders, field orders, additional Drawings issued subsequent to the execution of the Contract, Engineer's clarifications and interpretations of the Contract Documents, progress reports and other project-related documents.
 2. Keep a diary or log book, recording hours on the job site, weather conditions, data relative to questions of extras or deductions, list of principal visitors, daily activities, decisions, observations in general and specific observations in more detail as in the case of observing test procedures. Send Copies to Engineer.
 3. Record names, address and telephone numbers of all Contractors, Subcontractors and major suppliers of equipment and materials.
 4. Advise Engineer whenever Contractor is not currently maintaining an up-to-date copy of Record Drawings at the site.
- i. Reports:
1. Furnish Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the approved progress schedule, schedule of Shop Drawing submissions and other schedules.
 2. Consult with Engineer in advance of scheduled major tests, inspections or start of important phases of the Work.
- j. Payment Requisitions: Review Applications for Payment with Contractor for compliance with the established procedure for their submission and forward them with recommendations to Engineer, noting particularly their relation to the schedule of values, Work completed and materials and equipment delivered at the site.
- k. Guarantees, Certificates, Maintenance and Operation Manuals: During the course of the Work verify that guarantees, certificates, maintenance and operation manuals and other data required to be assembled and furnished by Contractor are applicable to the items actually installed and

deliver these data to Engineer for his review and forwarding to Owner prior to final acceptance of the Project.

I. Completion:

1. Before Engineer issues a Certificate of Substantial Completion, submit to Contractor a list of observed items requiring correction.
2. Conduct final inspection in the company of Engineer, Owner and Contractor and prepare a final list of items to be corrected.
3. Verify that all items on final list have been corrected and make recommendations to Engineer concerning acceptance.

Except upon written instructions of Engineer, Resident Project Representative:

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

29. Changes in the Work

Without invalidating the Agreement, Owner may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by Change Orders. Upon receipt of a Change Order, Contractor shall proceed with the Work involved. All such Work shall be executed under the applicable conditions of the Contract Documents. If any Change Order causes an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, an equitable adjustment will be made as provided in Article 30 on the basis of a claim made by either party.

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

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

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

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

30. Changes of Contract Price

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

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

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

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

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

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

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

30.2 Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and manufacturer's field service required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and

refunds, and all returns from sale of surplus materials and equipment shall accrue to Owner and Contractor shall make provisions so that they may be obtained.

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

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

30.5 Supplemental costs including the following:

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

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

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

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

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

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

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

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

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

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

Payroll costs and other compensation of Contractor's officers, executives, principals (of partnership and sole proprietorships), general managers, engineers, architects, estimators, lawyers, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by

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Contractor whether at the site or in his principal or a branch office for general administration of the work and not specifically included in the schedule referred to in subparagraph 30.1 -- all of which are to be considered administrative costs covered by the Contractor's Fee.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

31. Cash Allowance

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

32. Delays and Extension of Time

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

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

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

33. Warranty and Guarantee

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

34. Tests and Inspections

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

The Contractor shall give Engineer timely notice of readiness of the Work for all inspections, tests or approvals. If such Work required so to be inspected, tested or approved is covered without written approval of Engineer, it must, if requested by Engineer, be uncovered for observation, and such uncovering shall be at Contractor's expense unless Contractor has given Engineer timely notice of his intention to cover such Work and Engineer has not acted with reasonable promptness in response to such notice.

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

35. Access to Work

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

36. Uncovering Work

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

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

37. Stopping the Work

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

38. Correction of Work Before Final Payment

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

39. One Year Correction Period

If, after the approval of final payment and prior to the expiration of one year after the date of substantial completion or such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents, any Work is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions, either correct such defective Work, or, if it has been rejected by Owner, remove it from the site and replace it with non-defective Work. If Contractor does not promptly comply with the terms of such instructions, Owner may

have the defective Work corrected or the rejected Work removed and replaced, and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, shall be paid by Contractor.

40. Acceptance of Defective Work

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

41. Neglected Work By Contractor

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

42. Application for Payment

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

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

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

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

43. Approval of Payments

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

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

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

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

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

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

44. Substantial Completion

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

45. Partial Utilization

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

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

46. Final Payment

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

After Contractor has completed all such corrections to the satisfaction of Engineer and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection and other documents -- all as required by the Contract Documents, he may make Application for final Payment

following the procedure for progress payments. The final Application for Payment shall be accompanied by such date and scheduling as Engineer may reasonably require, together with complete and legally effective releases or waivers (satisfactory to Owner) of all Liens arising out of the Contract Documents and the labor and services performed and the material and equipment furnished hereunder. In lieu thereof and as approved by Owner, Contractor may furnish receipts or releases in full, an affidavit of Contractor that the releases and receipts include all labor, services, material and equipment for which a Lien could be filled, and that all payrolls, material and equipment bills, and other indebtedness connected with the work for which Owner or his property might in any way be responsible, have been paid or otherwise satisfied; and consent of the Surety, if any, to final payment. If any Subcontractor, material man, fabricator or supplier fails to furnish a release or receipt in full, Contractor may furnish a Bond or other collateral satisfactory to Owner to indemnify him against any Lien.

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

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

The making and acceptance of final payment shall constitute:

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

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

47. Owner's Right to Suspend Work

Owner may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety (90) days by notice in writing to Contractor and Engineer which shall fix the date on which Work shall be resumed. Contractor shall resume the Work on the date so fixed. Contractor will be

allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if he makes a claim therefore as provided in these Contract Documents.

48. Owner's Right to Terminate Contract

If the Contractor should be adjudged a bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper material, or if he should fail to make prompt payment to subcontractors or for material or labor, or persistently disregard laws, ordinances or the instruction of the Engineer, or otherwise be guilty of a substantial violation of any provision of the Contract, then the Owner, upon the certificate of the Engineer that sufficient cause exists to justify such action, may without prejudice to any other right or remedy and after giving the Contractor and his Surety a minimum of seven (7) days from delivery of a written notice, take possession of the premises and of all materials, tools and appliances thereof and finish the Work by whatever method he may deem expedient. In such case the Contractor shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price shall exceed the expense of finishing the Work including compensation for additional managerial and administrative services, such excess shall be paid to the Contractor. If any such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The expense incurred by the Owner as herein provided, and the damage incurred through the Contractor's default, shall be certified by the Engineer and incorporated in a Change Order.

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

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

49. Contractor's Right to Stop Work or Terminate

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

50. Arbitration by Mutual Consent

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

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

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

51. Computation of Time

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

52. Assignments

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

53. Ownership of Drawings

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

54. Compliance With Prevailing Wage Law (Where Applicable)

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

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

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

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

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

55. Measurement and Computation of Quantities

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

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

SECTION 00700 - GENERAL CONDITIONS

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

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

56. Project Signs

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

End of Section

SECTION 00800 - SPECIAL CONDITIONS

1. Description of the Work and Designation of the Owner
2. Available Funds
3. Time of Completion and Liquidated Damages
4. Insurance
5. Performance and Payment Bond
6. Additional Bonds and Insurance
7. Sequence of Work
8. Site Dimensions
9. Damage to Equipment Stored and/or In Place Prior to Initial Operations
10. Equipment Rental - Charges for Extra Work
11. Salvaged Materials and Equipment
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20. Layout of the Work
21. Conflict With or Damage to Existing Utilities and Facilities
22. Personal Liability of Public Officials
23. Blasting
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25. Occupational Safety and Health
26. Construction Warning Signs
27. Pipeline Right-of-way
28. Responsibility for Trench Settlement
29. Permission to Use Property Other Than That Provided by Owner
30. Resolving Conflicts in Contract Documents
31. Access to the Work
32. Lubrication
33. Labor Regulations
34. Preconstruction Conference
35. Record Drawings

1. Description of the Work and Designation of the Owner

These specifications and accompanying plans describe the work to be done and the materials to be furnished for the construction of the Build Ready Site Preparation Project for the Princeton-Caldwell County Industrial Authority.

All references to the Owner in these specifications, Contract Documents and plans shall mean the Northeast KY Regional Industrial Development Authority.

2. Available Funds

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

3. Time of Completion and Liquidated Damages

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

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

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

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

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

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

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

Liquidated damages are fixed at \$500 per day for each calendar day of overrun beyond the date set for completion or authorized extension thereof for the contract.

4. Insurance

Insurance is to be furnished by the Contractor for the benefit of the Owner, Contractor and subcontractors as their interests may appear. The minimum amounts of insurance coverage to be furnished under these contracts, in accordance with the applicable provisions of the General Conditions are:

- (a) Workmen's Compensation ----- Statutory
- (b) Comprehensive General Liability - Including coverage for the explosion, collapse, and underground hazards where applicable; also including contractual liability and also products and/or completed operations liability coverage (no deductible clauses are acceptable for these coverages):
 - Bodily Injury Liability \$1,000,000 Each Person
 \$3,000,000 Each Occurrence
 \$500,000 Aggregate Products
 - Property Damage Liability \$1,000,000 Each Occurrence
 \$2,000,000 General Aggregate
 \$1,000,000 Aggregate Products
 \$1,000,000 Aggregate Contractual
 \$3,000,000 Excess/Umbrella Property Insurance
- (c) Comprehensive Automobile Liability - Including hired car and employers' nonownership liability coverage:
 - Bodily Injury Liability \$1,000,000 Each Person
 \$3,000,000 Each Occurrence
 \$3,000,000 Excess/Umbrella Property Insurance
 - Property Damage Liability \$1,000,000 Each Occurrence
- (d) Builder's Risk (Building Construction) - Including coverage for fire, extended coverages, vandalism, and malicious mischief; 100% of insurable values.
- (e) Installation Floater (Non-Building Construction): 100% of insurable values.
- (f) Flood Hazard Insurance - In accordance with General Conditions.

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

5. Performance and Payment Bond

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

6. Additional Bonds and Insurance

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

7. Sequence of Work

Contractor shall apply their forces as necessary to complete the project within the allowed time.

8. Site Dimensions

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

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

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

10. Equipment Rental - Charges for Extra Work

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

11. Salvaged Materials and Equipment

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

12. Sanitary Facilities

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

13. Utilities

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

14. Cash Allowances

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

15. Nondiscrimination in Employment

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

16. Minimum Wage Rates

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

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

17. Property Protection

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

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

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

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

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

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

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

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

18. Rock Excavation

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

19. Extra Fill Material

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

20. Layout of the Work

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

21. Conflict With or Damage to Existing Utilities and Facilities

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

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

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

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

Should shutdowns in service be in excess of the time of duration agreed upon and such excessive shutdown time be due to the Contractor's negligence, faulty work and/or inability to perform, then and in

that event, the Contractor shall be held liable to the Owner, by reason of such excessive shutdown periods.

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

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

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

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

22. Personal Liability of Public Officials

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

23. Blasting

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

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

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

The Contractor shall keep a blasting log and, for each blast, shall record the date, time of blast, number of holes, type of explosive, number of delays, amount of charge per delay, stemming and number and type

of caps. An inventory of all explosives handled and stored shall also be kept. Blasting operations shall be covered by comprehensive general liability insurance or separate public liability insurance to cover blasting as set forth in the General Conditions.

24. Control of Erosion

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

25. Occupational Safety and Health

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

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

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

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

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

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

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

26. Construction Warning Signs

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

27. Pipeline Right-of-way

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

28. Responsibility for Trench Settlement

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

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

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

30. Resolving Conflicts in Contract Documents

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

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

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

31. Access to the Work

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

32. Lubrication

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

33. Labor Regulations

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

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

34. Pre construction Conference

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

35. Record Drawings

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

End of Section

SECTION 01200 - PROJECT MEETINGS

PART 1. GENERAL

1.1 Requirements Included

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

1.2 Related Requirements

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

1.3 Pre-construction Conferences

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

1.4 Progress Meetings

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

1.5 Pre-installation Conferences

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

1.6 Pre-final Inspection

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

1.7 Final Inspection

- A. When punch list work is complete, attend a final inspection.
- B. Review completion of punch list items.

PART 2. PRODUCTS

Not Used

PART 3. EXECUTION

Not Used

End of Section

SECTION 01300 - SUBMITTALS

PART 1. GENERAL

1.1 Requirements Included

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

1.2 Related Requirements

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

1.3 Procedures

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

1.4 Construction Progress Schedules

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

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

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

1.5 Shop Drawings

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

1.6 Product Data

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

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

1.7 Manufacturer's Instruction

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

1.8 Record Drawings

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

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

PART 2. PRODUCTS

Not Used

PART 3. EXECUTION

Not Used

End of Section

SECTION 01400 - QUALITY CONTROL

PART 1. GENERAL

1.1 Requirements Included

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

1.2 Related Requirements

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

1.3 Quality Control, General

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

1.4 Workmanship

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

1.5 Manufacturer's Instructions

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

1.6 Manufacturer's Certificates

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

1.7 Manufacturer's Field Services

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

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

PART 2. PRODUCTS

Not Used

PART 3. EXECUTION

Not Used

End of Section

SECTION 01420 - INSPECTION OF THE WORK

PART 1. GENERAL

1.1 The Engineer's Duties

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

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

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

1.2 The Contractor's Duties

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

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

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

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

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

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

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

Accompany submittal with transmittal letter in duplicate, containing:

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

PART 2. PRODUCTS

Not Used.

PART 3. EXECUTION

Not Used.

End of Section

SECTION 01500 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1. GENERAL

1.1 Requirements Included

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

1.2 Related Requirements

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

1.3 Barriers

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

1.4 Protection of Installed Work

- A. Provide temporary protection for installed products. Control traffic in immediate area to minimize damage.

1.5 Cleaning During Construction

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

1.6 Project Identification

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

1.7 Removal

- A. Remove temporary materials, equipment, services, and construction prior to Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary facilities.

SECTION 01500 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 2. PRODUCTS

Not Used

PART 3. EXECUTION

Not Used

End of Section

SECTION 01700 - CONTRACT CLOSE-OUT

PART 1. GENERAL

1.1 Requirements Included

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

1.2 Related Requirements

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

1.3 Close-out Procedures

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

1.4 Project Record Documents

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

1.5 Operation and Maintenance Data

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

1.6 Warranties and Bonds

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

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

1.7 Spare Parts and Maintenance Materials

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

PART 2. PRODUCTS

Not Used

PART 3. EXECUTION

Not Used

End of Section

SECTION 01720 - PROJECT RECORD DOCUMENTS

PART 1. GENERAL

1.1 Work Included

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

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

1.2 Related Requirements

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

1.3 Recording

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

1.4 Submittals

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

PART 2. PRODUCTS

Not Used.

PART 3. EXECUTION

Not Used.

End of Section

SECTION 02100 - EROSION CONTROL

PART 1. GENERAL

1.1 Work Included

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

1.2 Related Work

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

PART 2. PRODUCTS

Not used

PART 3. EXECUTION

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

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

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

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

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

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

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

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

Upon completion of the project, provide the Engineer with a copy of the submitted KPDES Notice of Termination (NOT) form. Retain all records for 3 years or provide them to the Engineer for retention.

End of Section

SECTION 02110 - SITE CLEARING

PART 1. GENERAL

1.1 Work Included

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

1.2 Related Work

- A. Section 02200 - Earth and Rock Work.

PART 2. PRODUCTS

Not used.

PART 3. EXECUTION

3.1 Protection

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

3.2 Site Clearing

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

3.3 Removal

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

End of Section

SECTION 02200 - EARTH AND ROCK WORK

PART 1. GENERAL

1.1 Work Included

- A. This section includes all labor, materials, equipment, and related items to complete all earth and rock work.
- B. The extent of earth and rock work is shown on drawings. The following work is included:
 1. Strip top soil and vegetation from the work area.
 2. Undercut the pad area as shown on the drawing.
 3. Perform earthwork to achieve the required grades. Re-use suitable undercut materials by re-compacting in layers in the undercut excavation.
 4. Establish and maintain horizontal and vertical ground control throughout the work.
 5. Locate and clearly mark all utilities (if any) on or adjacent to the site.

1.2 Related Work Specified Elsewhere

- A. Section 02100 - Erosion Control
- B. Section 02110 - Site Clearing
- C. Section 02936 - Seeding

1.3 Excavation Classification

- A. All mass, structural, and trench excavation shall be considered unclassified. No adjustments will be allowed to the contract price for rock encountered during mass or structural excavation.

1.4 Quality Assurance

- A. Codes and Standards: Perform earth and rock work in compliance with applicable requirements of governing authorities having jurisdiction. Applicable references include the following:
 - ASTM D422 Particle Size Analysis of Soils.
 - ASTM D423 Test for Liquid Limit of Soils.
 - ASTM D424 Test for Plastic Limit and Plasticity Index of Soils.
 - ASTM D698 Laboratory Compaction Characteristics of Soil Using Standard Effort
 - ASTM D3017 Moisture content of Soil Aggregates in Place by Nuclear Methods (Shallow Depth).
- B. Testing and Inspection Service: A testing laboratory will be employed using the allowance in the bid, to perform soil testing and inspection services for quality control testing during earth and rock work operations. Testing laboratory employed is to observe, test and report to the Engineer that the compaction requirements specified herein have been obtained.

1.5 Submittals

- A. Test Reports-Excavating: Coordinate and schedule in a timely manner the following quality related items. The following reports shall be submitted directly to the Engineer from the testing services, with copy to the Contractor:
 - Test reports on borrow material.
 - Field density test reports of sufficient number to verify compaction of structural fill.
 - One optimum moisture-density curve for each type of soil encountered. Determine particle size, liquid limit, plastic limit, plasticity index and maximum density of each type of soil.
 - Observe proof-rolling.

1.6 Job Conditions

- A. Site Information. Data on indicated subsurface conditions are not intended as representations or warranties of accuracy or continuity between soil borings. It is expressly understood that the Owner will not be responsible for interpretations or conclusions drawn by the Contractor. The data is made available for the convenience of the Contractor and is not guaranteed to represent all condition that may be encountered. No claim for extra compensation, or for extension of time, will be allowed on account of subsurface conditions inconsistent with the data shown. Additional test borings and other site examination and exploratory operations may be made by Contractor at no cost to Owner. Notify Owner prior to making any subsurface exploration.
- B. Groundwater. Groundwater may be encountered during the excavation. Control the ground water to a level at least three feet below the top of the subgrade or bottom of the excavation as appropriate.
- C. Explosives. Blasting shall only be conducted by licensed blasters and shall be in accordance with state and local requirements, and after conducting a thorough pre-blast survey.
- D. Protection of Persons and Property. Barricade open excavations occurring as part of this work and post with warning lights.
- E. Bench Marks and Monuments. Maintain carefully all bench marks, monuments and other reference points. If disturbed or destroyed, replace as directed at no cost to the owner.
- F. Notify the Engineer 48 hours prior to the beginning of any excavation work.

PART 2. PRODUCTS

2.1 Materials

- A. Satisfactory soil. Satisfactory soils are materials complying with Unified Soil Classification System (USCS), ASTM D 2487-93, soil classification group SP, SM, SC, ML, MH and CL.

PART 3. EXECUTION

3.1 Excavation

- A. Excavation consists of removal and disposal of material encountered when establishing required finish grade elevations. For the purpose of this contract, mass, structural and trench excavation of all materials shall be considered unclassified. Adjustments for rock or similar materials will not be considered.
- B. Unauthorized excavation. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of Engineer.
 - Unauthorized excavation, as well as remedial work directed by Engineer, shall be at Contractor's expense.
 - Backfill and compact unauthorized excavations, as specified for authorized excavations of same classification, unless otherwise directed by Engineer.

- C. Additional Excavation. When excavation has reached required subgrade elevations, notify Engineer who will make an inspection of conditions.
- If unsuitable bearing materials are encountered at required subgrade elevations, carry excavations deeper and replace excavated material as directed by Engineer.
 - Removal of unsuitable bearing material and its replacement as directed will be paid on basis of contract conditions relative to changes in work.
- D. Stability of Excavations. Slope sides of excavations to comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible because of space restriction or stability of material excavated. Maintain sides and slopes of excavations in safe condition until completion of backfilling.
- E. Shoring and Bracing. Provide materials for shoring and bracing, such as sheet piling, uprights, stringers, and cross-braces, in good serviceable condition.
- Establish requirements for trench shoring and bracing to comply with local codes and authorities having jurisdiction.
 - Maintain shoring and bracing in excavations, regardless of time period excavations will be open. Carry down shoring and bracing as excavation progresses.
- F. Dewatering. Prevent surface water and subsurface or ground water from flowing into excavations and flooding project site and surrounding area.
- Do not allow water to accumulate in excavations. Remove water to prevent softening of excavation bottoms and soil changes detrimental to stability of subgrades. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.
 - Convey water removed from excavations and rain water to collecting or run-off areas. Establish and maintain temporary drainage ditches and other diversions outside excavation limits for each structure. Do not use trench excavations as temporary drainage ditches. Site grading should be maintained during construction so that positive drainage of the site is promoted at all times.
- G. Material Storage. Stockpile satisfactory excavated materials, where directed by Engineer, until required for backfill or fill. Place, grade and shape stockpiles for proper drainage.
- Locate and retain soil materials away from edge of excavations. Do not store within drip line of trees indicated to remain. Do not fill in or disturb wetland areas.
 - Dispose of excess soil material and waste materials as herein specified. Maximum rock size allowed in fill is 12" in any one direction.
- H. Cold Weather Protection. Protect excavation bottoms against freezing when atmospheric temperature is less than 35 degrees F (1 degree C).
- I. Proofrolling. After excavation and before any fill placement, entire subgrade shall be proof-rolled with a loaded pneumatic tired vehicle, such as a dual axle dump truck with a gross weight of 16 to 20 tons, or similar equipment. Remove any soft, organic, or highly plastic soil encountered during proof-rolling and replace it with properly compacted fill. The exposed undercut subgrade shall then be densified through the use of caterpillar C-443C Compactor, or equivalent, by a minim of six passes over the entire undercut area.

3.2 Compaction

- A. General. Control soil compaction during construction, providing minimum percentage of density specified for each area classification.
- B. Lift Thickness. Soil used for structural fill construction should be placed in layers no greater than eight (8) inches in loose placement for heavy equipment placement, or 5 inches for hand operated whacker or vibratory plate placement. Normal density testing can not usually be accomplished with any degree of accuracy in rocky fills. Observation and monitoring of the fill performance in those areas is required.
- C. Percentage of Maximum Density Requirements. Compact soil to within 98% of optimum maximum dry density as measured by the Standard Proctor Test. The contractor shall provide 2 samples of the excavated material for performance of Standard Proctor Tests for compaction control. These tests will be paid for in the testing allowance..
- D. Moisture Control. Maintain soil moisture to + or – 2% of optimum moisture content. Where soil must be moisture conditioned before compaction, uniformly apply water to prevent free water from appearing on surface during or subsequent to compaction operations. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by disking, harrowing or pulverizing until moisture content is reduced to a satisfactory value.

3.3 Backfill and Fill

- A. General. Place acceptable soil material in layers to required subgrade elevations.
- B. Backfill excavations as promptly as work permits, but not until acceptance of construction below finish grade and removal of trash and debris.
- C. Ground Surface Preparation. Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Plow, strip, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface.
- D. Placement and Compaction. Place backfill and fill materials in layers to provide lift thickness.

3.4 Grading

- A. Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.

3.5 Field Quality Control

- A. Quality Control Testing During Construction. Allow testing service to inspect and approve subgrades and fill layers before further construction work is performed. It shall be the Contractor's responsibility to notify the testing agency at least 24 hours prior to beginning any work which requires testing.
- B. If in opinion of Engineer, based on testing service reports and inspection, subgrade or fills which have been placed are below specified density, provide additional compaction and testing at no additional expense to the Owner.

3.6 Maintenance

- A. Protection of Graded Areas. Protect newly graded areas from traffic and erosion. Keep free of trash and debris. Repair and reestablish grades in settled, eroded and rutted areas to specified tolerances.
- B. Reconditioning Compacted Areas. Where completed compacted areas are disturbed by subsequent construction operations or weather, scarify surface, reshape and compact to required density prior to further construction.
- C. Settling. Where settling is measurable or observable at excavated areas during general project warranty period, add backfill material, compact, and replace surface treatment. Restore appearance, quality and condition of surface or finish to match adjacent work, and eliminate evidence of restoration to greatest extent possible.
- D. Desiccation. Where desiccation cracks are observable, remove and replace soil to restore appearance, quality and condition of surface.

3.7 Disposal of Excess and Waste Materials

- A. Excess excavated material shall be re-spread, uniformly graded and seeded at a location near the site designated by the Engineer.

End of Section

SECTION 02937 – SEEDING FOR PASTURE TYPE AREAS

PART 1. GENERAL

1.1 Work Included

The work described herein shall consist of application of seed, fertilizer and agricultural limestone to establish turf on all areas shown on the drawings and disturbed by the construction work and not intended to receive other surfaces.

1.2 Submittals

Submit certificates of analysis and weight for all fertilizers to the Engineer.

PART 2. PRODUCTS

2.1 Seed

Seed shall be certified seed to be the latest season's crop and shall be delivered in original sealed packages bearing the producer's guaranteed analysis for percentages of mixtures and pure live seed. Seed shall be labeled in conformance with U.S. Department of Agriculture rules and regulations under the Federal Seed Act and applicable state seed laws. Seed that has become wet, moldy, or otherwise damaged will not be acceptable.

Seed Mixture	Lbs./Acre PLS
--------------	---------------

For permanent cover:

Kentucky 31 Tall Fescue	12
Birdsfoot Trefoil	7

For temporary cover during application period from February 15 to May 15 and August 1 to November 1:

Either	
Annual Ryegrass	5
or	
Perennial Ryegrass	10

For temporary cover during application period from May 15 to August 1:

Either	
Foxtail Millet	12
Pearl Millet	10
Japanese Millet	15
Weeping Lovegrass	2.5
or Bermuda Grass	4

For temporary cover for application period from November 1 to February 15:

Winter Wheat	100
--------------	-----

SECTION 02936 - SEEDING

2.2 Agricultural Limestone

Agricultural limestone shall have a minimum calcium carbonate equivalent of not less than 85 percent and shall be ground to such a fineness that at least 90 percent will pass a 20-mesh sieve and at least 50 percent will pass a 100-mesh sieve.

2.3 Fertilizer

Fertilizer shall be commercial grade, free flowing, uniform in composition.

Fertilizer shall be 10-10-10.

2.4 Mulch

Mulch shall be clean straw.

PART 3. EXECUTION

3.1 General

Seed all areas disturbed by the construction work not scheduled for other surfaces.

3.2 Preparation for Planting Lawns (N/A)

The finished surface shall be free of bumps, depressions or other irregularities or foreign materials. Spread topsoil evenly. Ground limestone shall be applied evenly at a rate of 50 pounds per 1,000 square feet. Fertilizer shall be applied evenly at a rate of 20 pounds per 1,000 square feet.

3.3 Seeding

A. Sowing of Seed. Immediately before any seed is to be sown, the ground shall be scarified as necessary and shall be dragged until the surface is smooth, friable and of uniform texture.

B. Mulching. All seeded areas shall be mulched with a straw and asphalt mat or netting or with a spray mulch of an approved material. Straw and asphalt mat shall be applied at the rate of eighty (80) pounds of straw and eight (8) gallons of asphalt per one thousand square feet. Asphalt shall either be emulsified RS1 grade or cutback RC1 grade. The type and method of mulching may be varied at the discretion of the Contractor on his own responsibility to establish a uniform turf free of erosion.

3.4 Maintenance

Seeded areas shall be protected and maintained by watering and replanting as may be necessary to produce a uniform stand of grass. Maintenance shall continue until a dense, uniform turf is established composed of the grasses specified and until acceptance, and shall include repair of damage caused by erosion.

End of Section

**GEOTECHNICAL INVESTIGATION REPORT
PROPOSED BUILDING PAD SITE**

**PRINCETON INDUSTRIAL PARK
CALDWELL COUNTY, KENTUCKY**

October 10, 2016

Prepared for:

**MSE of Kentucky, Inc.
624 Wellington Way
Lexington, Kentucky 40503**

Prepared By:



E. Douglas Dunbar

AEI Project #16-0152

**GEOTECHNICAL INVESTIGATION REPORT
PROPOSED BUILDING PAD SITE**

**PRINCETON INDUSTRIAL PARK
CALDWELL COUNTY, KENTUCKY**

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 - Geotechnical Boring Location Map**

**GEOTECHNICAL INVESTIGATION REPORT
PROPOSED BUILDING PAD SITE**

**PRINCETON INDUSTRIAL PARK
CALDWELL COUNTY, KENTUCKY**

1.0 INTRODUCTION

Associated Engineers, Inc. has completed a Geotechnical Investigation Report for proposed building pad construction located within the Princeton Industrial Park. As set forth by Glen Ross in an email dated April 29, 2013, the purpose of this investigation was to determine a typical soil profile and test a representative soil sample for Proctor density. Boring locations were provided and a maximum depth of 10 feet or to rock whichever was less was specified. This report is not intended to provide a complete subsurface characterization for building foundation design.

The findings of this report are based on borings, laboratory testing, published information, and computations. The geotechnical engineer advises that the findings, recommendations, and other professional advice contained herein have been prepared in accordance with generally accepted professional geotechnical engineering practices and that no other warranty is expressed or implied. Our *Warranty and Limitations of Study* is located at the end of this report.

2.0 SITE DESCRIPTION

The pad construction site is shown in the Proposed Building Ready Site Map provided by MSE of Kentucky, Inc. (attached with this report). Initially, the proposed pad was 150,000 sq. ft. Subsequently, it was revised to 200,000 sq. ft. (615 ft. X 325 ft.) which was the subject of this investigation. As shown on the map, the pad is situated on a subdued, northeast-southwest trending ridge. Present land use consists of an open field. Available historic maps and photos did not reveal any other features or usage back to 1952.

3.0 GEOLOGY

The U.S.G.S Princeton West Geologic Quadrangle Map (GQ-751) indicates the site to be underlain by bedrock units of the Mississippian Ste. Genevieve Limestone and upper member of the St. Louis Limestone. These units generally consist of medium grained limestone. Chert occurs sparsely in scattered nodules. Chert nodules can be present in the residual soils overlying the bedrock. The soils are typically clayey and reddish in color. Thickness can be variable due to an erratic bedrock surface but is generally less than 20 feet.

The Ste. Genevieve and St. Louis Limestones are well known for the development of caves, sinkholes, and other features associated with karst terrain. In karst terrain, groundwater has enlarged openings in soluble carbonate rocks to form a subsurface drainage system.

According to a map of karst occurrence in Kentucky published by the Kentucky Geological Survey (Map and Chart 33, Series XII, 2001), the Princeton area is underlain by bedrock with a high potential for karst development.

The Kentucky Geologic Map Information Service, Karst Potential Map (www.uky.edu/KGS/) shows numerous possible sinkhole depressions in the general vicinity of the site but none closer than approximately 800 feet.

Site inspection disclosed no surface evidence of sinkhole development. A possible sinkhole feature is located in a wooded area approximately 400 feet south of the site.

The inferred structural dip of bedrock units based on the limited data available is toward the north east at approximately 0.3 degrees. The closest mapped faulting lies about 0.8 miles northwest of the site. There is no evidence for movement along this fault in historic time.

Caldwell County is affected by earthquakes from several seismic zones in the region. The most important one is the New Madrid Seismic Zone, which roughly follows the course of the Mississippi River southward from Cairo, Illinois. A second area of notable seismic activity is the Wabash Valley Seismic Zone which centers around the Wabash Valley in southeastern Illinois and southwestern Indiana. Reasons for the use of conservative design ground motions in western Kentucky include large uncertainties in sources (faults), earthquake magnitude, frequency, and ground-motion attenuations. The Kentucky Building Code as adopted by the Kentucky Board of Housing, Buildings, and Construction mandates that non-residential structures be designed and constructed to resist the effects of earthquake motions in accordance with specified procedures.

4.0 INVESTIGATIVE PROCEDURES

Drilling operations were conducted on August 24 and 25, 2016. Seven borings were stipulated by MSE: one at each corner, one in the middle of each side, and one in the center of the pad. Locations are shown on the attached Geotechnical Boring Location Map. Locations were surveyed in the field by Associated Engineers and surface elevations provided.

Exploration was accomplished with a Mobile B-48 track-mounted rotary drill rig. Borings were advanced using hollow stem augers. Representative soil samples were obtained by the split-barrel (Standard Penetration Test) sampling procedure in accordance with ASTM D-1586. As specified by MSE, borings were terminated at a depth of 10 feet or to rock, whichever was less.

Preliminary field boring logs were prepared by the driller. These logs included visual descriptions of the materials encountered during drilling based on split-barrel samples, drill cuttings, and cores.

After completion of drilling and measuring water levels, the boreholes were backfilled with auger cuttings to the existing grade.

The collected soil and rock samples were delivered to the laboratory for evaluation and testing. Laboratory testing of representative samples (Appendix B) included sieve analysis, Atterberg Limits, moisture content, and soil classification.

Boring Logs included with this report (Appendix A) represent an interpretation of field logs with modifications based on laboratory data and examination by an engineering geologist. Descriptions are based on the Unified Soil Classification System as outlined in ASTM D2487.

The soil samples will be retained in our laboratory for 90 days after the date of this submittal, at which time we will dispose of them. If there is need to have Associated Engineers, Inc. retain the samples longer than 90 days, please notify us within the referenced time frame.

5.0 SUBSURFACE CONDITIONS

Subsurface conditions are depicted on the attached Boring Logs (Appendix A). All borings were terminated at a depth of 10 feet without encountering bedrock.

Laboratory testing of representative soil samples was conducted to supplement visual/manual classification procedures.

Investigation disclosed a relatively uniform sequence of soil units to be present across the site. Below a thin topsoil cover, dark yellowish brown lean clay was encountered down to a depth of 3.0 to 4.5 feet. Dark reddish brown to light brown lean clay occurred next, followed by reddish brown to light brown fat clay (CH) reached at an approximate depth of 8.5 feet. Borings were terminated in the fat clay unit. The only exceptions to this sequence were at the southwest end of the pad where reddish brown lean clay (CL) was logged down to 4.0 feet in borings DH-1 and DH-2 instead of dark yellowish brown lean clay. Based on lab data, all of the lean clays should exhibit similar engineering properties.

Lean clay (CL) soils have good bearing capacity when compacted to maximum density but lose much of this capacity when moisture is absorbed. These soils possess little internal friction and have low stability at higher moisture contents. Hence, fills and subgrades should be placed and maintained at relatively low moisture content. The lean clays on the site should have a medium (1.5-5%) swell potential when water is absorbed.

Fat clays (CH) exhibit high volume change between wet and dry states (5-25%). When moisture content is properly controlled, they compact quite readily. They have a high dry strength but lose much of this strength when absorbing water. They will compress when wet, and shrink and swell with changes in moisture. When moisture is plentiful, expansion can occur; whereas when conditions are dry, loss of moisture can cause shrinkage directly proportional to the volume of water lost. This soil volume change can cause building slabs to raise and lower accordingly.

All borings were dry after 24 hours. All soil samples were moist, with no free water observed. From the data obtained it appears unlikely that construction will encounter significant groundwater above a depth of 10 ft.

6.0 GENERAL DESIGN AND CONSTRUCTION RECOMMENDATIONS

Allowable bearing capacity was assessed based on Standard Penetration Test data. On the northeast side of the pad (DH-3, DH-4, DH-5), recommended allowable bearing capacity is relatively low (1000 psf) down to 6.5 feet. In the remaining borings, 1500 psf is recommended down to 6.5 feet. At all boring locations, recommended allowable bearing capacity is 1750 psf from 6.5 feet to 8.5 feet and 2000 psf from 8.5 feet to 10.0 feet.

The soil types disclosed by this investigation are typical for the Princeton area. The lean clays (CL) are acceptable for use as engineered fill if compacted in accordance with procedures recommended by the geotechnical engineer. The high swell potential of the fat clays logged below 8.5 feet renders this material unsuitable for use as engineered fill. Foundations can be set on this material in an undisturbed state; however, due to high swell potential (5-25%), provisions should be made to prevent changes in moisture content during construction and on a long term basis after construction.

Compaction of lean clay soils should be a minimum of 98% of Standard Proctor Density and within +/-2% of optimum moisture within the footprint of the building and extending 5 ft outside the building; compaction to 95% of Standard Proctor Density is suitable in other areas. Care should be taken to avoid over-compaction. Fill material should be placed in layers not exceeding 8 inches in loose thickness. All engineered and processed fill should be free of lumps, wood, organics, topsoil, frozen soil, environmental contamination, or other deleterious material. The placement and compaction of engineered fill for structural applications should be monitored and tested by a qualified representative of the geotechnical engineer.

Fills and subgrades should be placed and maintained at relatively low moisture content. Site grading should be maintained during construction such that positive drainage is promoted away from construction areas. Footing excavations should not be left open to allow the accumulation of water. All of the soil units should have a low shrink-swell potential.

Although significant groundwater is not anticipated during construction, the possibility of limited amounts in the proposed cut area cannot be ruled out. This should be monitored by the geotechnical engineer during construction and provisions implemented under his/her direction to control or divert drainage as necessary.

Although this investigation disclosed no active karst features, the potential for future subsidence due to karst development cannot be ruled out. Karst subsidence is a risk that owners assume when building in the general project area. If available, we recommend the purchase of insurance specifically covering damage due to karst subsidence. In this geologic setting, construction and land use changes which alter surface runoff and infiltration rates have been known to induce sinkhole development and subsidence. Surface runoff should be diverted well away from structures and not allowed to pond. Designs which provide a bridging effect, such as grade beam or floating slab construction, can possibly reduce but not eliminate the potential for damage.

7.0 WARRANTY AND LIMITATIONS OF STUDY

Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. This warranty is in lieu of all other warranties, either expressed or implied. Associated Engineers, Inc. is not responsible for the independent conclusions, opinions, or recommendations made by others on the field explorations and laboratory test data presented in this report.

This report was prepared for the exclusive use of MSE of Kentucky, Inc., its agents, and assignees. The report may not be relied upon by any other person or entity without the written permission of MSE of Kentucky, Inc. and Associated Engineers, Inc.

This report is limited in that the engineering recommendations are determined from information obtained from test borings, samples, and laboratory soil tests indicating subsurface conditions at the particular location, date, times, and depths shown on the boring logs. Soil conditions at other locations may differ from those encountered in the test borings. Different periods during the year may cause the soil conditions to change from those described in this report.

Changes in the subsurface conditions at the site may not become evident until the course of construction. Construction monitoring by the geotechnical engineer or his representative is recommended to verify the subsurface conditions and to check that the soils connected construction phases are properly carried out. If other than minor changes are found, it may be necessary to review the recommendations of this report.

If the project characteristics are altered from those discussed in this report, if the project information contained in this report is incorrect, or if additional information becomes available, a review by this office is recommended to determine if any modification of geotechnical parameters is needed.

This report does not include any determinations of the existence of hazardous or toxic materials from samples and observation of the materials encountered during drilling, sampling, and testing. Surface and/or groundwater conditions encountered on the site at the times noted are shown on the Boring Logs included as Appendix A to this report.

APPENDIX A

Boring Logs



2740 North Main Street
 Madisonville, KY 42431-9470
 Phone: (270) 821-7732
 Fax: (270) 821-7789

FIELD BORING REPORT

CLIENT: MSE of Kentucky BORING NO.: DH#1
 PROJECT: MSE of KY Princeton Industrial Site Geotechnical Investigation DATE STARTED: 8/25/2016
 LOCATION: Park Avenue, Princeton, Kentucky DATE COMPLETED: 8/25/2016
 PROJECT NO.: 16-0152 BORING METHOD: Hollow Stem Auger SURFACE ELEV.: 519.35
 DRILLER: Robert Thomas RIG NO.: Mobile B-48 WEATHER: _____
 CASING DIA.: _____ CORE DIA.: _____ SHELBY TUBE O.D.: _____
 WATER DEPTH: IMMEDIATE _____, COMPLETION Dry, 24hrs HRS./DAYS AFTER COMPLETION Dry CAVED: 6.6
 BORING COORDINATES> NORTH: 1930527.505 EAST: 1010687.106 STATION: _____

DEPTH, FT.	SAMPLES	SPT N-VALUE/ RQD	UNCONFINED COMPRESSIVE STRENGTH (PSF)	MATERIAL CLASSIFICATION/DESCRIPTION	SYMBOL	ELEVATION/ DEPTH, FT.	ADDITIONAL INFORMATION
0				Topsoil.		518.85	
1				Lean clay (CL), reddish brown, trace to some carbonaceous films, moist.		0.5	
2	SS	6					
3				Lean clay (CL), dark reddish brown to light brown, trace carbonaceous films, moist.		515.35	
4							
5	SS	6					
6				Fat clay (CH), dark reddish brown to light brown, trace carbonaceous films, trace chert fragments, moist.		4.0	
7	SS	9					
8						510.85	
9	SS	10				8.5	
10						509.35	
11						10.0	10.0 Boring terminated.
12							
13							
14							
15							
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ABBREVIATIONS: HSA- Hollow Stem Auger SFA- Solid Flight Auger WD- Wash Drilling HA- Hand Auger SS- Split Spoon ST- Shelby Tube RC- Rock Core
 BS- Bag Sample SPT- Standard Penetration Test



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 Fax: (270) 821-7789

FIELD BORING REPORT

CLIENT: MSE of Kentucky BORING NO.: DH#2
 PROJECT: MSE of KY Princeton Industrial Site Geotechnical Investigation DATE STARTED: 8/25/2016
 LOCATION: Park Avenue, Princeton, Kentucky DATE COMPLETED: 8/25/2016
 PROJECT NO.: 16-0152 BORING METHOD: Hollow Stem Auger SURFACE ELEV.: 528.6
 DRILLER: Robert Thomas RIG NO.: Mobile B-48 WEATHER: _____
 CASING DIA.: _____ CORE DIA.: _____ SHELBY TUBE O.D.: _____
 WATER DEPTH: IMMEDIATE _____, COMPLETION Dry, 24hrs HRS./DAYS AFTER COMPLETION Dry CAVED: 6.5
 BORING COORDINATES> NORTH: 1930329.347 EAST: 1010944.675 STATION: _____

DEPTH, FT.	SAMPLES	SPT N-VALUE/ RQD	UNCONFINED COMPRESSIVE STRENGTH (PSF)	MATERIAL CLASSIFICATION/DESCRIPTION	SYMBOL	ELEVATION/ DEPTH, FT.	ADDITIONAL INFORMATION
0				Topsoil		528.1	
1				Lean clay (CL), reddish brown, trace roots, trace carbonaceous films, moist.		0.5	
2	SS	7					
3				Lean clay (CL), dark reddish brown to light brown, trace carbonaceous films, moist.		524.6	
4							
5	SS	10					
6				Fat clay (CH), dark reddish brown to light brown, trace carbonaceous films, moist.		4.0	
7	SS	9					
8						520.1	
9	SS	10				8.5	
10						518.6	
11						10.0	10.0 Boring terminated.
12							
13							
14							
15							
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FIELD BORING REPORT

CLIENT: MSE of Kentucky BORING NO.: DH#3
 PROJECT: MSE of KY Princeton Industrial Site Geotechnical Investigation DATE STARTED: 8/24/16
 LOCATION: Park Avenue, Princeton, Kentucky DATE COMPLETED: 8/24/2016
 PROJECT NO.: 16-0152 BORING METHOD: Hollow Stem Auger SURFACE ELEV.: 528.79
 DRILLER: Robert Thomas RIG NO.: Mobile B-48 WEATHER: _____
 CASING DIA.: _____ CORE DIA.: _____ SHELBY TUBE O.D.: _____
 WATER DEPTH: IMMEDIATE _____, COMPLETION Dry, 24hrs HRS./DAYS AFTER COMPLETION Dry CAVED: 7.5
 BORING COORDINATES> NORTH: 1930573.020 EAST: 1011132.255 STATION: _____

DEPTH, FT.	SAMPLES	SPT N-VALUE/ RQD	UNCONFINED COMPRESSIVE STRENGTH (PSF)	MATERIAL CLASSIFICATION/DESCRIPTION	SYMBOL	ELEVATION/ DEPTH, FT.	ADDITIONAL INFORMATION
0				Topsoil.		528.29	
1				Lean clay (CL), dark yellowish brown, moist, trace roots.		0.5	
2	SS	5					
3				Lean clay (CL), dark reddish brown to light brown, trace carbonaceous films, moist.		525.29	
4							
5	SS	8					
6				Fat clay (CH), dark reddish brown to light brown, trace carbonaceous films, moist.			
7	SS	9					
8						520.29	
9	SS	9				8.5	
10						518.79	
11						10.0	10.0 Boring terminated.
12							
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14							
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 BS- Bag Sample SPT- Standard Penetration Test



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FIELD BORING REPORT

CLIENT: MSE of Kentucky BORING NO.: DH#4
 PROJECT: MSE of KY Princeton Industrial Site Geotechnical Investigation DATE STARTED: 8/24/2016
 LOCATION: Park Avenue, Princeton, Kentucky DATE COMPLETED: 8/24/2016
 PROJECT NO.: 16-0152 BORING METHOD: Hollow Stem Auger SURFACE ELEV.: 523.84
 DRILLER: Robert Thomas RIG NO.: Mobile B-48 WEATHER: _____
 CASING DIA.: _____ CORE DIA.: _____ SHELBY TUBE O.D.: _____
 WATER DEPTH: IMMEDIATE _____, COMPLETION Dry, 24hrs HRS./DAYS AFTER COMPLETION Dry CAVED: 7.0
 BORING COORDINATES> NORTH: 1930816.745 EAST: 1011319.772 STATION: _____

DEPTH, FT.	SAMPLES	SPT N-VALUE/ RQD	UNCONFINED COMPRESSIVE STRENGTH (PSF)	MATERIAL CLASSIFICATION/DESCRIPTION	SYMBOL	ELEVATION/ DEPTH, FT.	ADDITIONAL INFORMATION
0				Topsoil.		523.34	
1				Lean clay (CL), dark yellowish brown, trace roots, moist.		0.5	
2	SS	4					
3				Lean clay (CL), dark reddish brown to light brown, trace carbonaceous films, moist.		519.34	
4							
5	SS	5					
6				Fat clay (CH), dark reddish brown to light brown, trace carbonaceous films, moist.		515.34	
7	SS	7					
8						513.84	
9	SS	9				8.5	
10						513.84	
11						10.0	10.0 Boring terminated.
12							
13							
14							
15							
16							
17							
18							
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FIELD BORING REPORT

CLIENT: MSE of Kentucky BORING NO.: DH#5
 PROJECT: MSE of KY Princeton Industrial Site Geotechnical Investigation DATE STARTED: 8/24/2016
 LOCATION: Park Avenue, Princeton, Kentucky DATE COMPLETED: 8/24/2016
 PROJECT NO.: 16-0152 BORING METHOD: Hollow Stem Auger SURFACE ELEV.: 523.83
 DRILLER: Robert Thomas RIG NO.: Mobile B-48 WEATHER: _____
 CASING DIA.: _____ CORE DIA.: _____ SHELBY TUBE O.D.: _____
 WATER DEPTH: IMMEDIATE _____, COMPLETION Dry, 24hrs HRS./DAYS AFTER COMPLETION Dry CAVED: 7.0
 BORING COORDINATES> NORTH: 1931014.968 EAST: 1011062.130 STATION: _____

DEPTH, FT.	SAMPLES	SPT N-VALUE/ RQD	UNCONFINED COMPRESSIVE STRENGTH (PSF)	MATERIAL CLASSIFICATION/DESCRIPTION	SYMBOL	ELEVATION/ DEPTH, FT.	ADDITIONAL INFORMATION
0				Topsoil.	-----	523.33	
1				Lean clay (CL), dark yellowish brown, trace roots, moist.		0.5	
2	SS	5					
3				Lean clay (CL), dark reddish brown to light brown, trace carbonaceous films, moist.		520.83	
4							
5	SS	5					
6				Fat clay (CH), dark reddish brown to light brown, trace carbonaceous film, moist.		3.0	
7	SS	7					
8						515.33	
9	SS	10				8.5	
10						513.83	
11						10.0	10.0 Boring terminated.
12							
13							
14							
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 BS- Bag Sample SPT- Standard Penetration Test



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FIELD BORING REPORT

CLIENT: MSE of Kentucky BORING NO.: DH#6
 PROJECT: MSE of KY Princeton Industrial Site Geotechnical Investigation DATE STARTED: 8/24/2016
 LOCATION: Park Avenue, Princeton, Kentucky DATE COMPLETED: 8/24/2016
 PROJECT NO.: 16-0152 BORING METHOD: Hollow Stem Auger SURFACE ELEV.: 526.36
 DRILLER: Robert Thomas RIG NO.: Mobile B-48 WEATHER: _____
 CASING DIA.: _____ CORE DIA.: _____ SHELBY TUBE O.D.: _____
 WATER DEPTH: IMMEDIATE _____, COMPLETION Dry, 24hrs HRS./DAYS AFTER COMPLETION Dry CAVED: 7.5
 BORING COORDINATES> NORTH: 1930771.300 EAST: 1010874.682 STATION: _____

DEPTH, FT.	SAMPLES	SPT N-VALUE/ RQD	UNCONFINED COMPRESSIVE STRENGTH (PSF)	MATERIAL CLASSIFICATION/DESCRIPTION	SYMBOL	ELEVATION/ DEPTH, FT.	ADDITIONAL INFORMATION
0				Topsoil.		525.86	
1				Lean clay (CL), dark yellowish brown, trace roots, moist.		0.5	
2	SS	8					
3				Lean clay (CL), dark reddish brown to light brown, trace carbonaceous films, moist.		522.36	
4	SS	6				4.0	
5				Lean clay (CL), dark reddish brown to light brown, trace to some carbonaceous films, moist.		520.36	
6	SS	7				6.0	
7				Fat clay (CH), dark reddish brown to light brown, trace carbonaceous films, moist.		517.86	
8	SS	9				8.5	
9						516.36	
10						10.0	10.0 Boring terminated.
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							

ABBREVIATIONS: HSA- Hollow Stem Auger SFA- Solid Flight Auger WD- Wash Drilling HA- Hand Auger SS- Split Spoon ST- Shelby Tube RC- Rock Core
 BS- Bag Sample SPT- Standard Penetration Test



2740 North Main Street
 Madisonville, KY 42431-9470
 Phone: (270) 821-7732
 Fax: (270) 821-7789

FIELD BORING REPORT

CLIENT: MSE of Kentucky BORING NO.: DH#7
 PROJECT: MSE of KY Princeton Industrial Site Geotechnical Investigation DATE STARTED: 8/24/2016
 LOCATION: Park Avenue, Princeton, Kentucky DATE COMPLETED: 8/24/2016
 PROJECT NO.: 16-0152 BORING METHOD: Hollow Stem Auger SURFACE ELEV.: 529.35
 DRILLER: Robert Thomas RIG NO.: Mobile B-48 WEATHER: _____
 CASING DIA.: _____ CORE DIA.: _____ SHELBY TUBE O.D.: _____
 WATER DEPTH: IMMEDIATE _____, COMPLETION Dry, 24hrs HRS./DAYS AFTER COMPLETION Dry CAVED: 6.8
 BORING COORDINATES> NORTH: 1930672.135 EAST: 1011003.427 STATION: _____

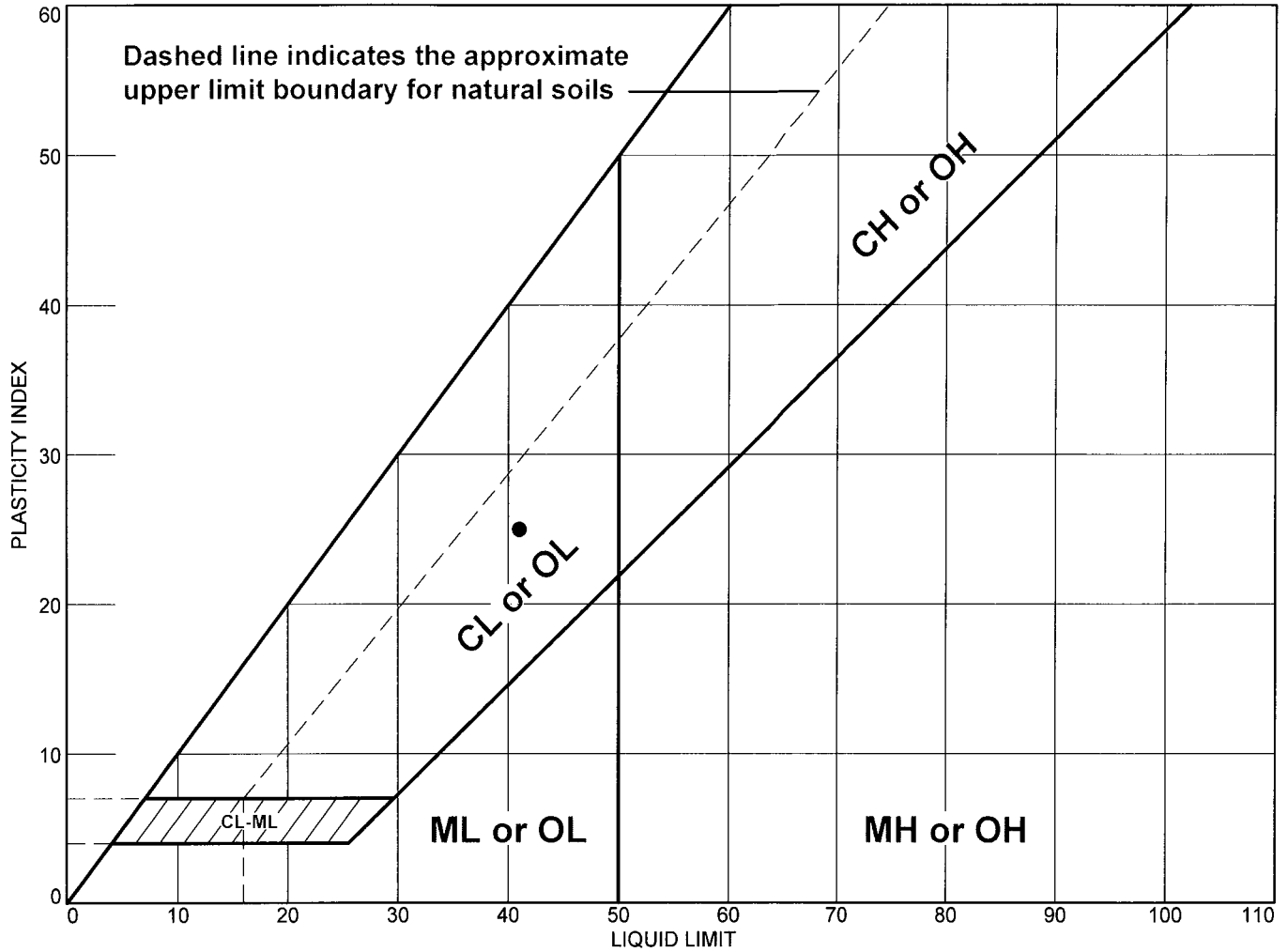
DEPTH, FT.	SAMPLES	SPT N-VALUE/ RQD	UNCONFINED COMPRESSIVE STRENGTH (PSF)	MATERIAL CLASSIFICATION/DESCRIPTION	SYMBOL	ELEVATION/ DEPTH, FT.	ADDITIONAL INFORMATION
0				Topsoil.		528.85	
1				Lean clay (CL), dark yellowish brown, trace roots, moist.		0.5	
2	SS	7					
3						525.85	
4				Lean clay (CL), dark reddish brown to light brown, trace carbonaceous films, moist.		3.5	
5	SS	6					
6						523.35	
7	SS	7		Lean clay (CL), dark reddish brown to light brown, trace to some carbonaceous films, moist.		6.0	
8						520.85	
9	SS	8		Fat clay (CH), dark reddish brown to light brown, trace to some carbonaceous films, moist.		8.5	
10						519.35	
11						10.0	10.0 Boring terminated.
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							

ABBREVIATIONS: HSA- Hollow Stem Auger SFA- Solid Flight Auger WD- Wash Drilling HA- Hand Auger SS- Split Spoon ST- Shelby Tube RC- Rock Core
 BS- Bag Sample SPT- Standard Penetration Test

APPENDIX B

Laboratory Test Data

LIQUID AND PLASTIC LIMITS TEST REPORT



	Material Description	Sampled	Tested	Technician	LL	PL	PI	%<#40	USCS
○	Lean clay (CL), reddish brown, trace to some carbonaceous films, moist.		9/19/16	J. Short	41	16	25	99.6	CL

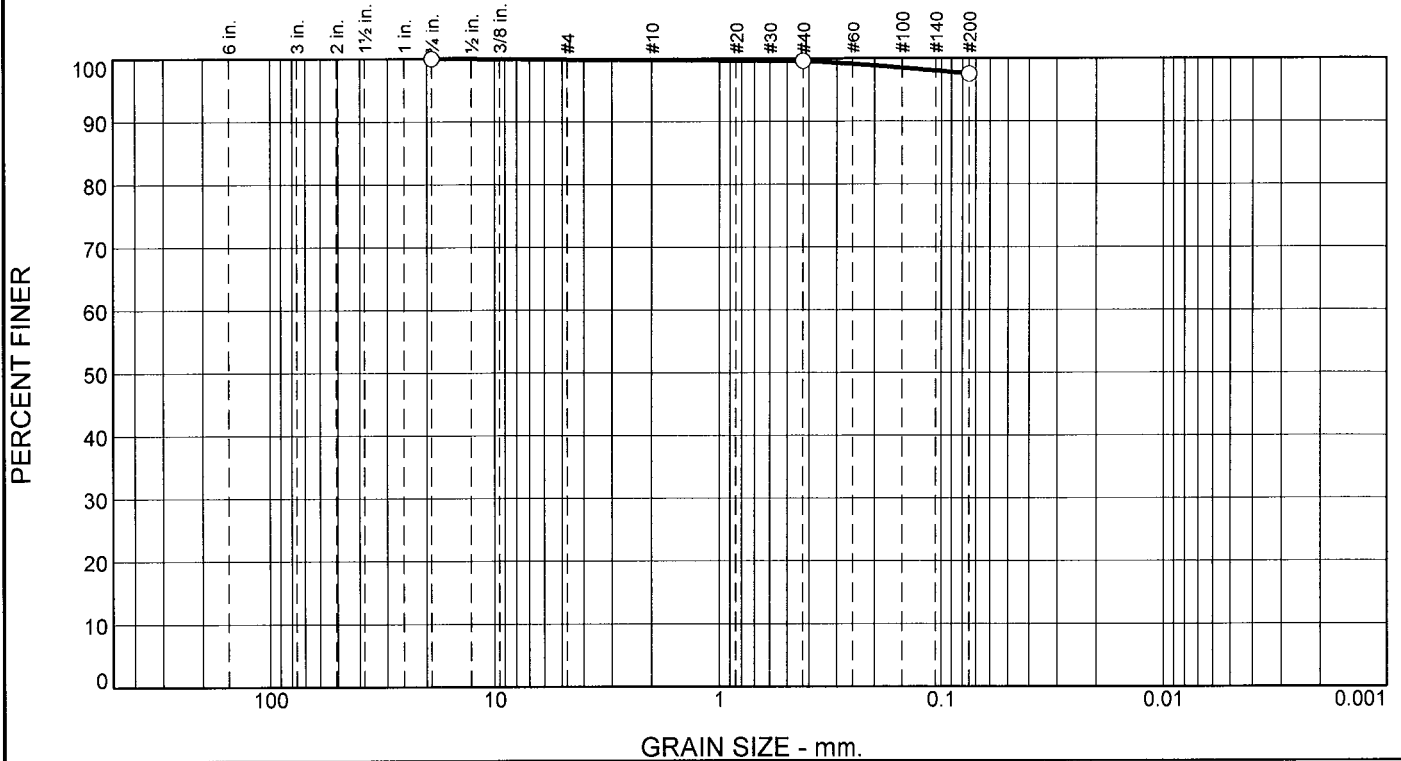
Project No. 16-0152 **Client:** MSE of Kentucky
Project: MSE of KY Princeton Industrial Site Geotechnical Investigation

○ **Source of Sample:** DH#1 **Depth:** 1.0

ASSOCIATED ENGINEERS, INC.
Madisonville, Kentucky

Checked by: B. Parks
Title:
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	0.2	2.1	97.5	

TEST RESULTS			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3/4	100.0		
#40	99.6		
#200	97.5		

* (no specification provided)

Material Description

Lean clay (CL), reddish brown, trace to some carbonaceous films, moist.

Atterberg Limits (ASTM D 4318)

PL= 16 LL= 41 PI= 25

Classification

USCS (D 2487)= CL AASHTO (M 145)= A-7-6(25)

Coefficients

D ₉₀ =	D ₈₅ =	D ₆₀ =
D ₅₀ =	D ₃₀ =	D ₁₅ =
D ₁₀ =	C _u =	C _c =

Remarks

Date Received: _____ Date Tested: 9/19/16

Tested By: J. Short

Checked By: B. Parks

Title: _____

Source of Sample: DH#1 Depth: 1.0

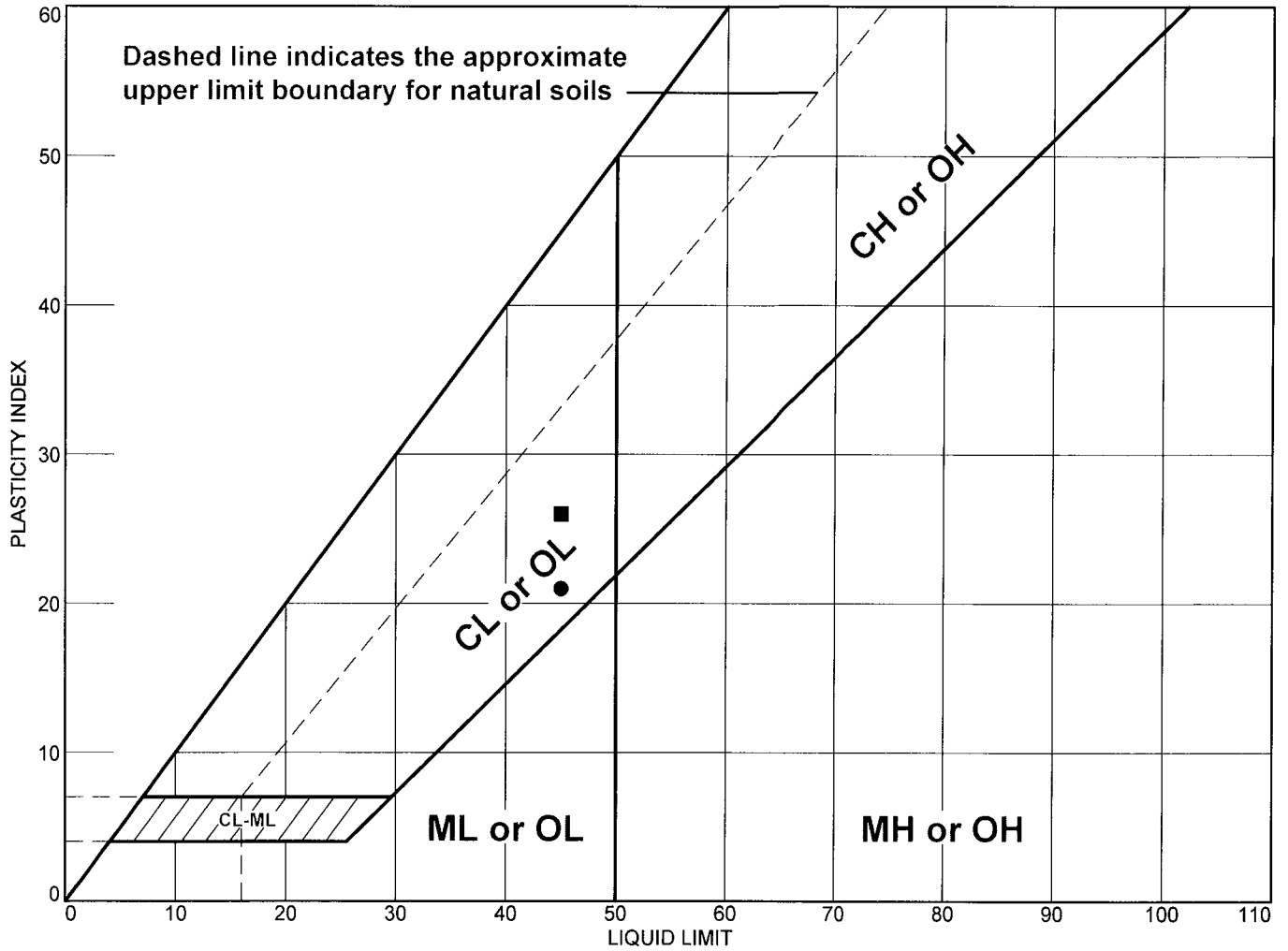
Date Sampled:

ASSOCIATED ENGINEERS, INC.

Madisonville, Kentucky

Client: MSE of Kentucky
 Project: MSE of KY Princeton Industrial Site Geotechnical Investigation
 Project No: 16-0152 Figure

LIQUID AND PLASTIC LIMITS TEST REPORT



	Material Description	Sampled	Tested	Technician	LL	PL	PI	%<#40	USCS
○	Lean clay (CL), dark yellowish brown, trace roots, moist.		9/19/16	J. Short	45	24	21	99.9	CL
□	Lean clay (CL), dark reddish brown to light brown, trace carbonaceous films, moist.		9/19/16	J. Short	45	19	26	98.6	CL

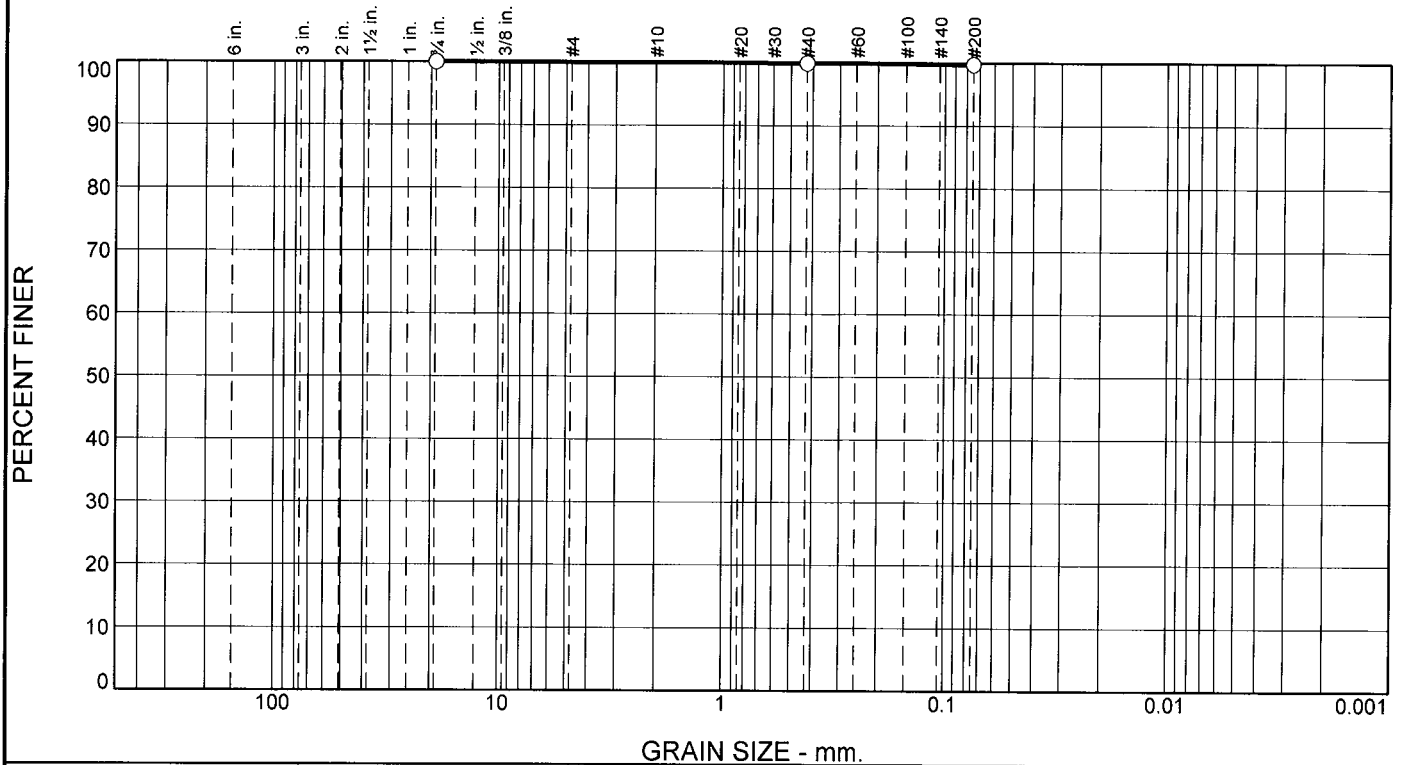
Project No. 16-0152 **Client:** MSE of Kentucky
Project: MSE of KY Princeton Industrial Site Geotechnical Investigation

○ **Source of Sample:** DH#7 **Depth:** 1.0
□ **Source of Sample:** DH#7 **Depth:** 4.0

ASSOCIATED ENGINEERS, INC.
Madisonville, Kentucky

Checked by: B. Parks
Title:
Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	0.2	99.7	

TEST RESULTS			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3/4	100.0		
#40	99.9		
#200	99.7		

* (no specification provided)

Material Description

Lean clay (CL), dark yellowish brown, trace roots, moist.

Atterberg Limits (ASTM D 4318)

PL= 24 LL= 45 PI= 21

Classification

USCS (D 2487)= CL AASHTO (M 145)= A-7-6(24)

Coefficients

D₉₀= D₈₅= D₆₀=
D₅₀= D₃₀= D₁₅=
D₁₀= C_u= C_c=

Remarks

Date Received: _____ Date Tested: 9/19/16

Tested By: J. Short

Checked By: B. Parks

Title: _____

Source of Sample: DH#7 Depth: 1.0

Date Sampled:

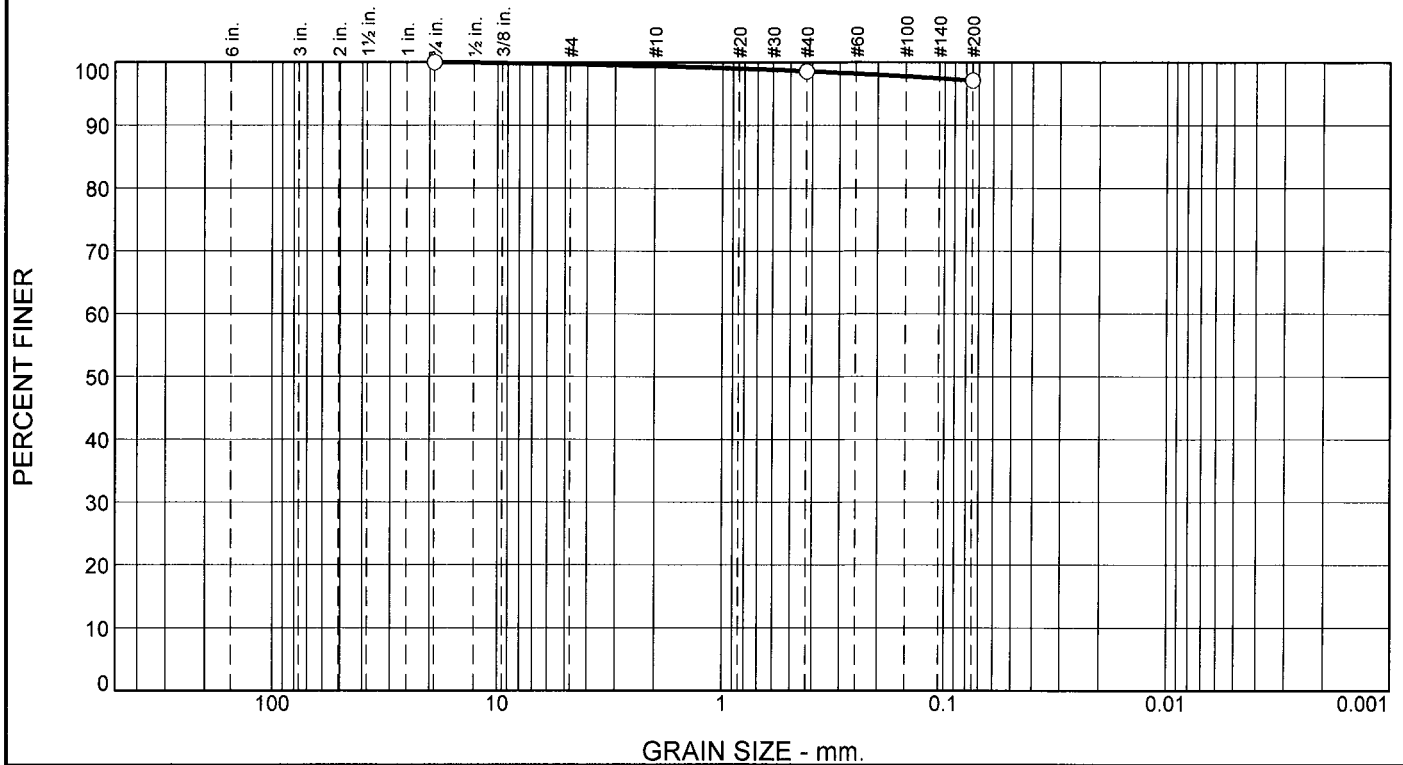
ASSOCIATED ENGINEERS, INC.

Madisonville, Kentucky

Client: MSE of Kentucky
Project: MSE of KY Princeton Industrial Site Geotechnical Investigation

Project No: 16-0152 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.3	0.3	0.8	1.5	97.1	

TEST RESULTS			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
3/4	100.0		
#40	98.6		
#200	97.1		

Material Description

Lean clay (CL), dark reddish brown to light brown, trace carbonaceous films, moist.

Atterberg Limits (ASTM D 4318)

PL= 19 LL= 45 PI= 26

Classification

USCS (D 2487)= CL AASHTO (M 145)= A-7-6(27)

Coefficients

D₉₀= D₈₅= D₆₀=
 D₅₀= D₃₀= D₁₅=
 D₁₀= C_u= C_c=

Remarks

Date Received: _____ Date Tested: 9/19/16

Tested By: J. Short

Checked By: B. Parks

Title: _____

* (no specification provided)

Source of Sample: DH#7 Depth: 4.0

Date Sampled:

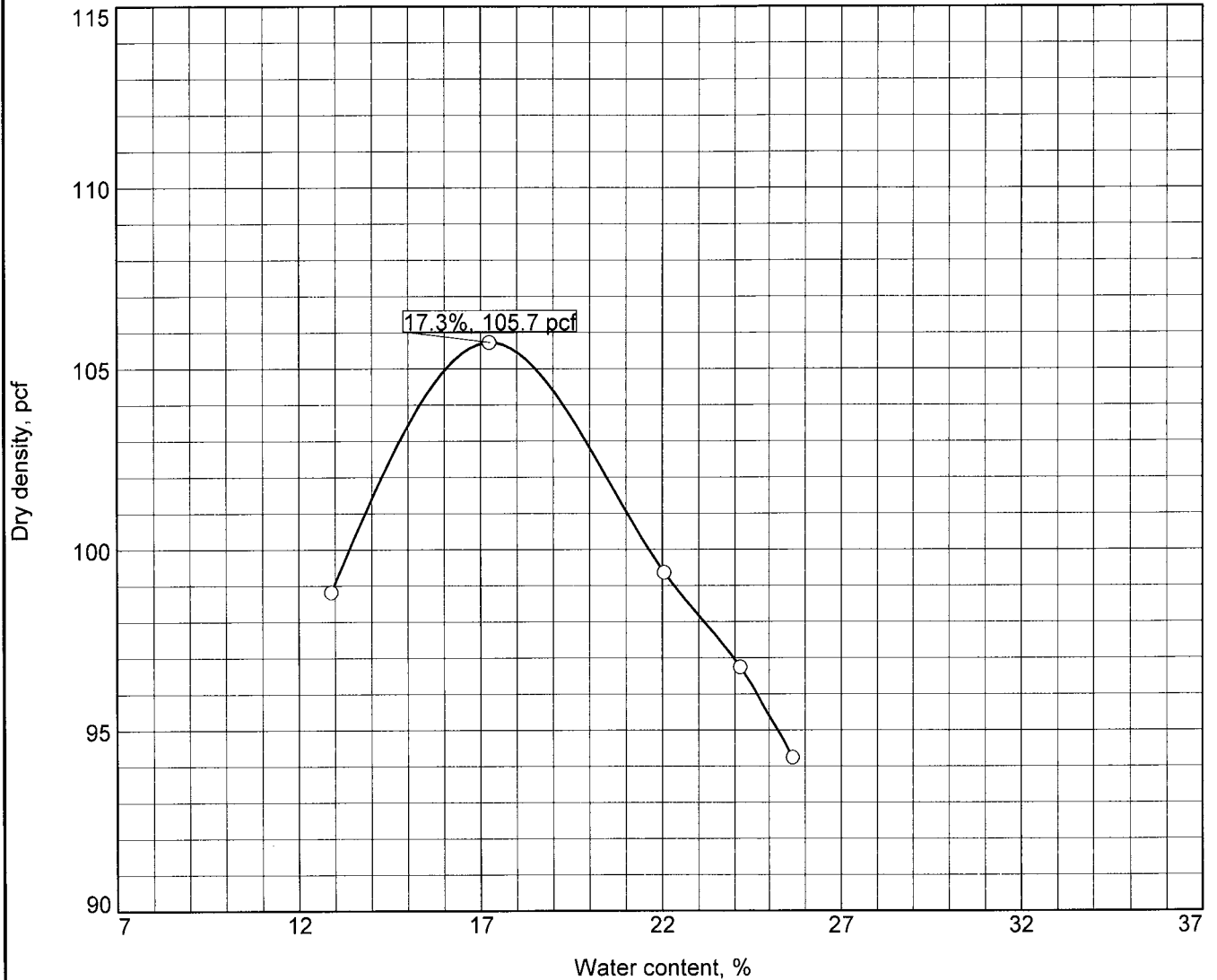
ASSOCIATED ENGINEERS, INC.

Madisonville, Kentucky

Client: MSE of Kentucky
 Project: MSE of KY Princeton Industrial Site Geotechnical Investigation

 Project No: 16-0152 Figure

COMPACTION TEST REPORT



Test specification: ASTM D 698-12 Method B Standard

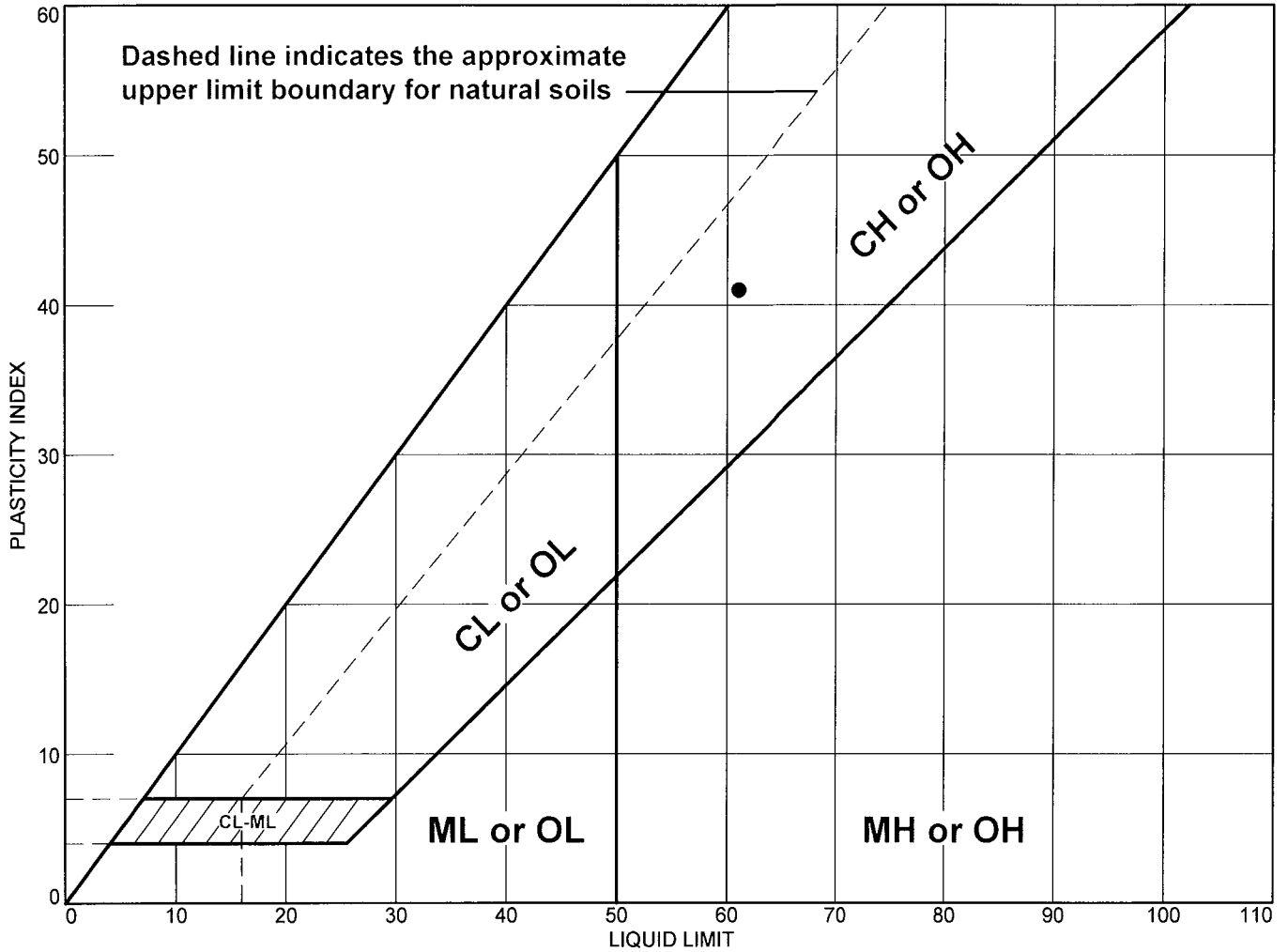
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
0.5	CL							

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 105.7 pcf Optimum moisture = 17.3 %	Lean clay (CL), dark yellowish brown, trace roots, moist.

Project No. 16-0152 Client: MSE of Kentucky Project: MSE of KY Princeton Industrial Site Geotechnical Investigation Date: 9/20/16 <input type="checkbox"/> Source of Sample: DH#7	Remarks: 0.5' - 3.5'
ASSOCIATED ENGINEERS, INC. Madisonville, Kentucky	
Figure	

Tested By: R. Thomas

LIQUID AND PLASTIC LIMITS TEST REPORT



	Material Description	Sampled	Tested	Technician	LL	PL	PI	%<#40	USCS
○	Fat clay (CH), dark reddish brown to light brown, trace carbonaceous film, moist.		9/19/16	J. Short	61	20	41	99.6	CH

Project No. 16-0152 **Client:** MSE of Kentucky
Project: MSE of KY Princeton Industrial Site Geotechnical Investigation

○ **Source of Sample:** DH#5 **Depth:** 8.5

ASSOCIATED ENGINEERS, INC.
Madisonville, Kentucky

Checked by: B. Parks
Title:
Figure

APPENDIX C

Unified Soil Classification System

Unified Soil Classification System

Major Divisions	Group Symbols	Typical Names	Laboratory Classification Criteria	
(More than half of coarse fraction is larger than No. 4 sieve size) (More than half of material is larger than No. 200 sieve size) Coarse-grained soils	Clean gravels (Little or no fines)	GW	Well graded gravels, gravel sand mixtures, little or no fines.	
		GP	Poorly graded gravels, gravel sand mixtures, little or no fines.	
	Gravels with fines (Appreciable amount of fines)	GM*	d	Silty gravels, gravel-sand-silt mixtures.
			u	
	Clean sands (Little or no fines)	SW	Well graded sands, gravelly sands, little or no fines.	
		SP	Poorly graded sands, gravelly sands little or no fines.	
	Sands with fines (Appreciable amount of fines)	SM*	d	Silty sands, sand-silt mixtures
			u	
		SC	Clayey sands, sand-clay mixtures	
	(More than half of material is smaller than No. 200 sieve) Fine Grained Soils	Silts and Clays (Liquid limit less than 50)	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts with slight plasticity
CL			Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.	
OL			Organic silts and organic silty clays of low plasticity	
Silts and Clays (Liquid limit greater than 50)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	
		CH	Inorganic clays of high plasticity, fat clays	
		OH	Organic clays of medium to high plasticity, organic silts	
Highly Organic Soils		PI	Peat and other highly organic soils	
Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than NO.200 sieve size), coarse-grained soils are as follows: Less than 5 per cent..... GM,GP,SM,SP More than 5 per cent..... GW,GC,SW,SC Borderline cases requiring dual symbols**			$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3 Not meeting all gradation requirements for GW Atterburg limits below "A" line or P.I. less than 4 Atterburg limits above "A" line or P.I. greater than 7 $C_u = \frac{D_{60}}{D_{10}}$ greater than 6; $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3 Not meeting all gradation requirements for SW Atterburg limits below "A" line or P.I. less than 4 Atterburg limits above "A" line or P.I. greater than 7	
<p style="text-align: center;">Plasticity Chart</p>				

*Division of GM and SM groups into subdivisions of d and u are for roads and airfields only. Subdivision is based on Atterburg limits: suffix d used when L.L. is 28 or less and the P.I. is 0 or less; the suffix u used when L.L. is greater than 28.

**Borderline classifications, used for soils possessing characteristics of two groups, are designated by combinations of group symbols. For example: GW-GC, well graded gravel-sand mixture with clay binder.

APPENDIX D

General Notes

GENERAL NOTES

DRILLING & SAMPLING

Symbols

SS	Split Spoon – 1 3/8" I.D., 2" O.D., except where noted	HA	Hand Auger Boring	BS	Bag Sample
PA	Power Auger	ST	Shelby Tube – 3" O.D., except where noted	RC	Rock Core with Diamond Bit, NX size, except where noted
PS	Piston Sample – 3" diameter	RB	Roller Bit	WD	Wash Drilling
N/A	Not applicable or available	WS	Wash Sample	HSA	Hollow Stem Auger
SPT	Standard Penetration Test	SFA	Solid Flight Auger	PP	Pocket Penetrometer
CR	Core Recovery (%)	RQD	Rock Quality Designation		

Standard Penetration Test "N" Value – Blows per foot after an initial 6 inch seating of a 140 pound hammer falling 30 inches on a 2 inch O.D. split spoon, except where noted.

Water Level Measurement Notations & Symbols

Immediate	When noted during drilling or sampling process.
Completion	After all drilling tools are removed from borehole.
HR	Number of hours after completion.
NR	Not recorded.
Dry	No measurable water level found.

Water Levels

These levels indicated on the boring logs are the levels measured in the boring at the time indicated. The accurate determination of ground water levels may not be possible with short term observations, especially in impervious soils. The levels shown may fluctuate throughout the year with variation in precipitation, evaporation, runoff, and other hydrogeologic factors.

Strata Changes

Boundaries between strata shown in "Material Classification/Description" may be approximate.

SOIL CLASSIFICATION

Particle Sizes

Boulder	Greater than 12"	Sand	Coarse	No. 10 to No. 4 2.00 mm to 4.75 mm	Silt	Minus No. 200 .005 mm to .075 mm
Cobbles	3" to 12"		Medium	No. 40 to No. 10 425 mm to 2.00 mm	Clay	Less than .005 mm
Gravel	Coarse 3/4-in to 3-in 4.75 mm to 75 mm		Fine	No. 200 to No. 40 .075 mm to .425 mm		
	Fine No. 4 to 3/4-in 4.75 mm to 75 mm					

Coarse Grained Soils

Descriptive Term	No. Blows/Ft. Standard Pen. Test
------------------	-------------------------------------

Very Loose	0-4
Loose	4-10
Firm (medium)	10-30
Dense	30-50
Very Dense	over 50

Fine Grained Soils

Descriptive Term	No. Blows/Ft. Standard Pen. Test	Unconfined Comp. Tons per Sq. Ft.
------------------	-------------------------------------	--------------------------------------

Very Soft	<2	<0.25
Soft	3-4	0.25-0.50
Plastic (med. stiff)	5-8	0.50-1.00
Stiff	9-15	1.00-2.00
Very Stiff	16-30	2.00-4.00
Hard	over 30	over 4.00

Soil Constituents

Trace	Less than 5%
Trace to Some	5% to 29%
Some	30% to 50%
Mostly	51% to 100%

Soil Description Terminology

If clay content is sufficient so that clay appears to dominate soil properties then clay becomes primary noun with the other major soil constituent as modifiers i.e., silty clay. Other minor constituents may be added according to estimates of soil constituents present, i.e., silty clay, trace to some sand.

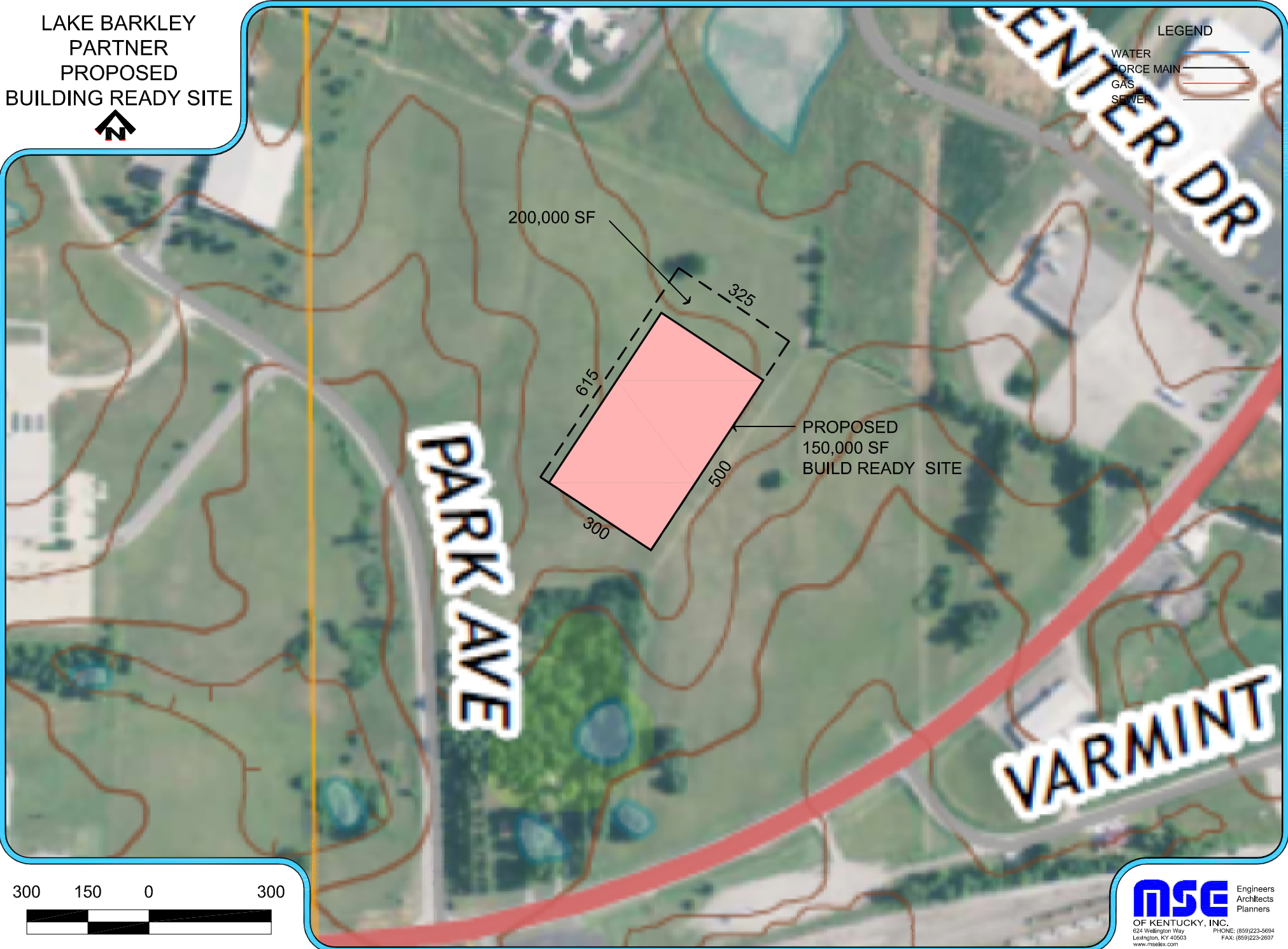
EXHIBITS

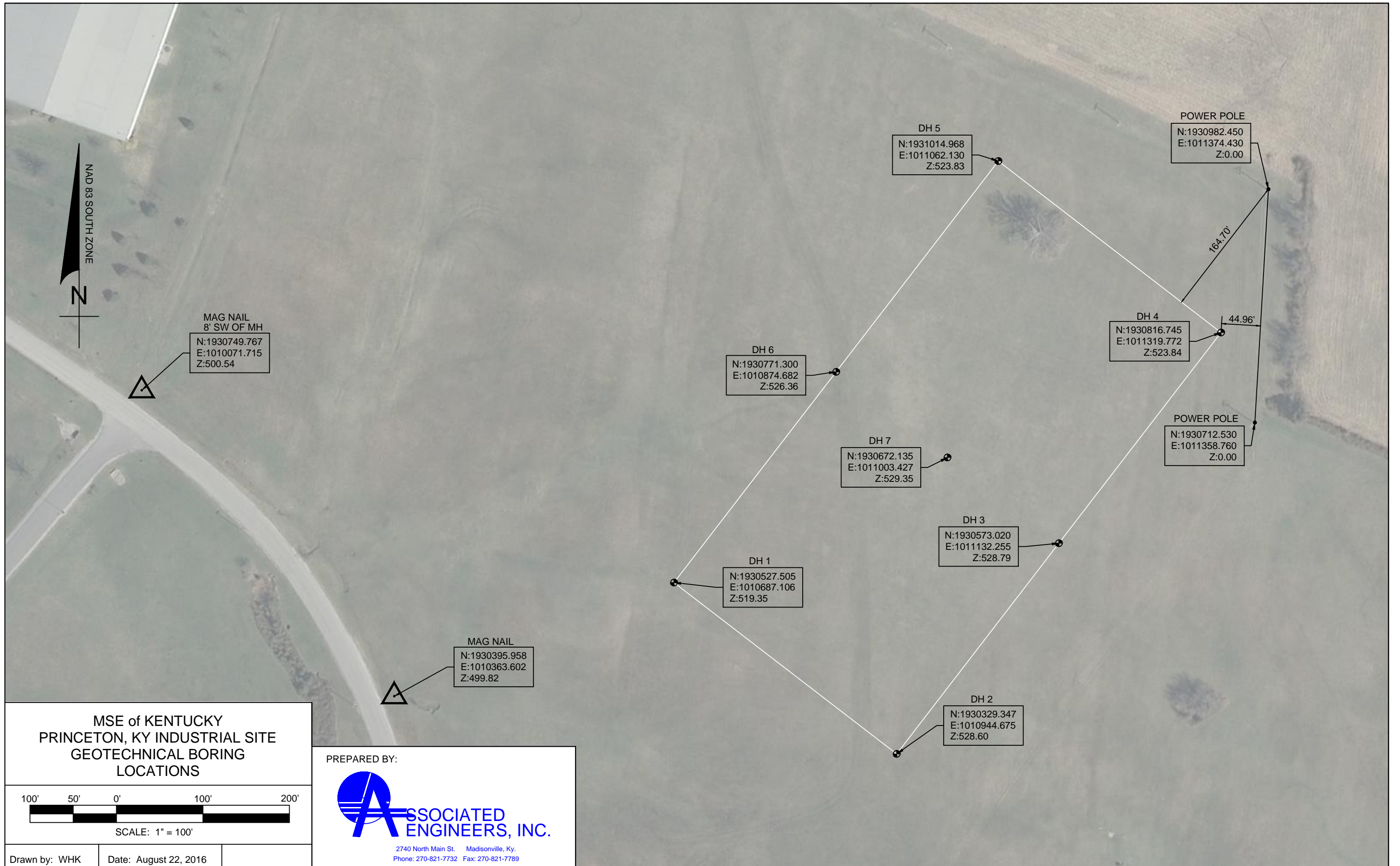
LAKE BARKLEY
PARTNER
PROPOSED
BUILDING READY SITE



LEGEND

- WATER
- FORCE MAIN
- GAS
- SEWER





NAD 83 SOUTH ZONE
N

MAG NAIL
8' SW OF MH
N:1930749.767
E:1010071.715
Z:500.54

MAG NAIL
N:1930395.958
E:1010363.602
Z:499.82

DH 5
N:1931014.968
E:1011062.130
Z:523.83

POWER POLE
N:1930982.450
E:1011374.430
Z:0.00

DH 6
N:1930771.300
E:1010874.682
Z:526.36

DH 4
N:1930816.745
E:1011319.772
Z:523.84

DH 7
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E:1011003.427
Z:529.35

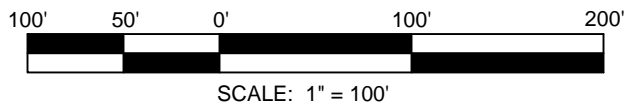
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E:1011358.760
Z:0.00

DH 3
N:1930573.020
E:1011132.255
Z:528.79

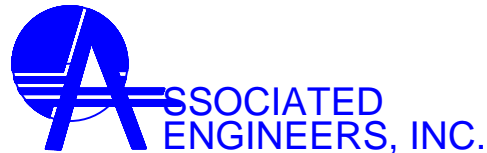
DH 1
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E:1010687.106
Z:519.35

DH 2
N:1930329.347
E:1010944.675
Z:528.60

MSE of KENTUCKY
PRINCETON, KY INDUSTRIAL SITE
GEOTECHNICAL BORING
LOCATIONS



PREPARED BY:



2740 North Main St. Madisonville, Ky.
Phone: 270-821-7732 Fax: 270-821-7789

Drawn by: WHK

Date: August 22, 2016