

**Proposal
And
Contract Documents
for**

Emerald Parkway – Phase 8



07-008.0-CIP



BID SUBMITTAL AND CONTRACT DOCUMENTS FOR THE

CITY OF DUBLIN
EMERALD PARKWAY - PHASE 8

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I. BIDDING REQUIREMENTS

A. INVITATION FOR BIDS

The CITY OF DUBLIN, Ohio will receive sealed bids for the materials and labor necessary for the construction of the EMERALD PARKWAY - PHASE 8 PROJECT. Bids shall be received by CITY OF DUBLIN at 5800 Shier-Rings Road, Dublin, Ohio 43016 until 11:00 A.M. local time on Thursday, November 21, 2013, at which time all bids will be opened and read aloud.

The CITY OF DUBLIN may choose to not award the bid—and bidders shall hold bids open—until sixty days after the bid opening. The work for which bids are invited consists of: 5,500 ft of 4-lane boulevard with: modern multi-lane roundabout; curb and gutter; asphalt shared-use path; AEP duct system (6" PVC conduit, Type EB); water main; sanitary sewer; storm sewer; precast reinforced concrete arch culvert (28 ft span x 10 ft rise including precast headwalls and wingwalls); dry-laid stone wall; and street lights.. The cost estimate for the Project is \$11,000,000.00.

Copies of the Contract Documents are on file at 5800 Shier-Rings Road, Dublin, Ohio 43016, where they are available for inspection by prospective bidders. Paper copies of the Contract Documents are available for a NONREFUNDABLE charge of \$100.00 during business hours at the same address. Please make any check payable to the CITY OF DUBLIN.

Each bidder is required to furnish with its proposal a Bid Guaranty in accordance with Section 153.54 of the Ohio Revised Code. Bid security furnished in Bond form shall be issued by a surety company or corporation licensed in the State of Ohio to provide said surety.

Each proposal must contain the full name of the party or parties submitting the proposal and all persons interested therein. Each bidder must submit evidence of its experience on projects of similar size and complexity. The owner intends and requires that this project be completed by November 20, 2014.

All contractors and subcontractors involved with the project will to the extent practicable use Ohio products, materials, services and labor in the implementation of their project. Payment of Prevailing Wages IS required for this Project.

The CITY OF DUBLIN reserves the right to accept or reject any or all bids, to waive any informalities or irregularities in the bidding process and to enter into a contract with the bidder whom, in its opinion, offers the lowest and best bid.

Each bidder must ensure that all employees and applicants for employment are not discriminated against based on race, color, religion, sex, or national origin.

By order of the Council of the CITY OF DUBLIN, Ohio. Ordinance number N/A.

Publish dates: Thursday, October 31, 2013
 Thursday, November 7, 2013

B. INSTRUCTIONS TO BIDDERS

1. PRELIMINARY MATTERS

- a. The Project owner is the CITY OF DUBLIN, Ohio. The Owner’s Representative is Paul A. Hammersmith P.E., Director of Engineering / City Engineer. You may direct questions or request for additional information to Mike Sweder and Ken Richardson at Telephone: 614-410-4621 or 614-410-4631; Email: msweder@dublin.oh.us and krichardson@dublin.oh.us.
- b. In connection with the Legal Notice, the CITY OF DUBLIN (hereinafter called the “City”), issues this Request for Bids for all labor, material, and services necessary for constructing the EMERALD PARKWAY - PHASE 8 PROJECT (the “Project”), as more fully described in the Contract Documents.
- c. Definitions. The word uses here shall have the following meanings:
 - i. “City” or “Owner” shall mean the CITY OF DUBLIN, Ohio.
 - ii. “Bidder” or “Contractor” shall all mean an entity or person that submits a bid for the Project and ultimately the entity or person awarded the contract as applicable.
 - iii. “Contract Documents” shall mean the documents included with this bid solicitation and listed as Contract Documents in the City/Contractor Agreement.
 - iv. “O.R.C.” shall mean the **OHIO REVISED CODE**.
- d. The Project consists of the following contract(s) for the work on the Project:
 - i. General Contract
- e. Estimate of Cost [O.R.C. 153.12(A)].
 - i. The total estimated construction cost for the base bid Work for the Project for which the City is soliciting bids at this time is \$11,000,000.00.

2. CONTRACTOR QUALIFICATIONS, REGISTERED CONTRACTORS, INCOME TAX, PERMITTING

- a. A Bidder may be a person, private entity, or any combination of such entities supported by a letter of intent to enter into an agreement or under an existing agreement in association in the form of a joint venture or other consortium. In the case of a joint venture or other consortium:
 - i. All members shall be jointly and severally liable for the execution of the Contract, and
 - ii. The association shall nominate a representative who shall have the authority to conduct all business for and on behalf of any and all the members of the joint venture or the consortium during the bidding process and, in the event the joint venture or consortium is awarded the Contract, during Contract execution.
- b. Threshold Qualifications. Every Contractor, before entering a contract with the City, must demonstrate the following:

- i. Registered Contractors. Any person or company (including subcontractors) intending to do work under these Contract Documents shall be required to meet the CITY OF DUBLIN laws for Contractor Registration, if any, contained in the Codified Ordinances of the CITY OF DUBLIN as applicable to the particular classification of work to be performed.
 - ii. Licensed Contractors. Bidders and subcontractors for work requiring licenses under the O.R.C. shall submit evidence of such licensing in accordance with O.R.C. Chapter 4740.
 - iii. Foreign Corporations. Business entities formed outside of the state of Ohio shall present proof of registry with the Ohio Secretary of State and demonstrate the existence of an Ohio statutory agent.
- c. Income Taxes. All persons or entities performing work under these Contract Documents shall comply with the requirements set forth in the Codified Ordinances of the CITY OF DUBLIN.
- d. Permits and Regulations - Unless otherwise previously or subsequently specified, the Contractor shall procure and pay for all permits, licenses, inspections and approvals necessary for the execution of his contract. The City will obtain the required building permit for permanent structure.
 - i. The Contractor shall comply with all laws, ordinances, rules, orders and regulations relating to the performance of the work required to complete the Project.
 - ii. The Contractor's attention is directed to the "Safety and Health Regulations for Construction" of the Occupational Safety and Health Administration, U.S. Department of Labor and to its responsibilities thereunder.

3. GENERAL INSTRUCTIONS

- a. City expects the Bidder to examine all instructions, forms, terms, and specifications in the Request for Bids. Each Bidder is solely responsible for conducting its own due diligence and investigation in support of the preparation of Bids, negotiation of agreements, and the subsequent delivery of all services it will provide. Bidder's failure to furnish all information or documentation required by the Bidding Documents may result in the City rejecting the Bid.
- b. Public Information. The City considers all information, documentation and other materials requested to be submitted in response to this solicitation to be a non-confidential and/or non-proprietary nature and therefore subject to public disclosure under the Ohio Public Records Laws except as specifically exempted by those laws. [O.R.C. Chapter 149].
- c. Bidder should carefully read the information contained herein. It is the Bidder's responsibility to submit a complete response to all requirements and questions. Any information submitted by Bidders shall become the property of the City and submitted at the Bidder's sole expense. The City shall not pay any stipend for any submissions

related to the bidding process. The City will not provide compensation to Bidders for any expenses incurred for Bid preparation or for any presentations made.

- d. The City may disqualify bids that are qualified with conditional clauses, or alterations, or items not called for in the bid documents, or irregularities and deviations from the requirements of the Contract Documents.
- e. The City makes no guarantee that an award will be made because of this bid, and reserves the right to accept or reject any or all bids, waive any formalities or minor technical inconsistencies, or delete any item/requirements from this bid or resulting contract when deemed to be in the City's best interest.

4. INTERPRETATION

- a. If a Bidder contemplating submitting a Bid for the proposed Project is in doubt as to the true meaning of any part of the Contract Documents, it may **submit a written request for an interpretation thereof to Mike Sweder and Ken Richardson**, in writing on the form included with the Contract Documents. Inquiries **shall be faxed to 614-410-4699 to the attention of Mike Sweder and Ken Richardson**. The City will make any interpretation of the proposed documents by Addendum only, duly signed by the City, and a copy of such Addendum will be mailed or delivered to each Bidder receiving a set of Contract Documents and each plan room where the City maintains the Contract Documents. The City will not be responsible for any other explanation or interpretation of the proposed documents.
- b. In interpreting the Contract Documents, the Bidder shall interpret words describing materials that have a well-known technical or trade meaning, unless otherwise specifically defined in the Contract Documents, in accordance with the well-known meaning recognized by the trade.

5. CONTRACT DOCUMENTS

- a. The Contract Documents consist of the documents listed in the City/Contractor Agreement and included with these Bid Submittal and Contract Documents for the Project. Bidders shall use complete sets of the Contract Documents in preparing Bids. The City assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Contract Documents. The City, in making the Contract Documents available on the above terms, does so only for obtaining Bids on the Work and does not confer a license or grant for any other use.
- b. The Construction and Material Specifications for this Project shall be the CITY OF DUBLIN Division 100 and the current version of the CMS, excluding 's Division 100—all of which are incorporated into and made part of the Contract Documents for this Project.

6. DOCUMENTS TO SUBMIT WITH BID

- a. The Bidder shall submit the following completed forms with its response to this Request for Bids:
 - i. Bid Form

- ii. Bid Guaranty and Contract Bond
 - iii. Affidavit of Authority (if applicable)
 - iv. Personal Property Tax Affidavit
 - v. Bidder's Qualification Statement
 - vi. Insurance Certificate
 - vii. Noncollusion affidavit
 - viii. State of Ohio Bureau of Workers' Compensation Certificate
 - ix. Proposed Supervisory Personnel List
 - x. Proposed Subcontractor List
 - xi. Bidder's and Subcontractors' Certificate(s) of licensure, if applicable
- b. In addition to the foregoing requirements, Bids submitted by a joint venture or other consortium shall include a copy of the joint venture/consortium agreement entered into by all members. Alternatively, a binding letter of intent or similar irrevocable instrument to execute a joint venture/consortium agreement in the event of a successful Bid shall be signed by all members and submitted with the Bid, together with a copy of the proposed joint venture/consortium agreement.
- c. Each Bidder shall submit the following number of copies of its Bid to the City: 3 and one additional copy in electronic PDF form. The PDF form must exactly match the hard copy and must be provided within 24 hours after the Bid opening. The Bid Form shall be signed with the name typed or printed below the signature. A Bid shall not be submitted by facsimile transmission. A Bidder shall sign its Bid in the form required under Ohio law to bind the Bidder's particular type of business entity to a contract.
- d. Each Bid shall be enclosed and delivered in a sealed opaque envelope with the Bidder's name and the title of the Project printed in the upper left hand corner and addressed as follows: **ATTN: Paul A. Hammersmith P.E., Director of Engineering / City Engineer, 5800 Shier-Rings Road, Dublin, Ohio 43016.** The Bidder shall be responsible for delivering its Bid to this office and address for the Bid opening before the deadline set forth in the Legal Notice—as extended by any addenda. The City will not open Bids that arrive after the deadline regardless of how the Bidder delivers the Bid.
- e. After the City opens the Bids, it may require the Bidders to submit additional financial information. The City shall keep additional financial information it receives pursuant to a request under this paragraph confidential to the extent possible, except under proper order of a court. The additional financial information should not be a public record under section 149.43 of the Revised Code. (See O.R.C. 9.312).

7. CLARIFICATION OF BIDS

- a. To assist in the examination, evaluation, and comparison of the Bids and the qualifications of the Bidders, the City may ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder that is not in response to a request by the City shall not be considered. The City's request for clarification and the response shall be in

writing. No change in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the City in the evaluation of the Bids.

8. BONDS

- a. Bid, Payment, and Performance Security. Each bidder shall submit one of the statutorily required forms of bid security as set forth in O.R.C. Section 153.54 and the winning bidder must also submit Payment and Performance bonds as required by the O.R.C. and on the forms included with the Contract Documents. There are two ways to meet these requirements:
 - i. OPTION #1: Submit the Combined Bid/Performance/Payment Bond on the form included with the Contract Documents along with the Bid; or,
 - ii. OPTION #2: Submit a certified check, cashier's check, or letter of credit pursuant to Chapter 1305 of the Revised Code, conditioned to provide that if the bid is accepted, the bidder, after the awarding or the recommendation for the award of the contract, whichever the contracting authority designates, will enter into a proper contract in accordance with the bid, plans, details, specifications, and bills of material. Any letter of credit shall be revocable only at the option of the City. The amount of the certified check, cashier's check, or letter of credit shall be equal to ten per cent of the bid. Any of the foregoing instruments shall be submitted with the CITY OF DUBLIN listed as the payee or beneficiary. If the Bidder chooses option ii and is awarded the Contract, the Bidder shall then submit a Payment and Performance Bond using the form included with the Contract Documents.
- b. With any Bond required here, the Bidder shall submit or ensure:
 - i. *Ohio Department of Insurance Certificate.* Proof that the bond is issued by a surety company ("Surety") authorized by the Ohio Department of Insurance to transact business in the State of Ohio and acceptable to the City in the form of a certificate.
 - ii. *A Financial Statement.* Proof that the bond is issued by a Surety capable of demonstrating a record of competent underwriting, efficient management, adequate reserves, and sound investments. These criteria will be deemed to be met if the Surety currently has an A.M. Best Company Policyholders rating of "A-" better and has or exceeds the Best Financial Size Category of Class VI. Other Sureties may be acceptable to the City, in its sole discretion.
 - iii. *Proper signatures, credentials, and Power of Attorney.* The bond shall be signed by an authorized agent of an acceptable Surety and by the Bidder; and, include credentials showing the Power of Attorney of the agent.
 - iv. The name, address, and telephone and fax numbers of the Surety and the Surety's Agent should be typed or printed on each bond.

9. EXECUTION OF CONTRACT

- a. Within 10 days after award of the Contract, the successful Bidder shall execute and deliver to the City an original of the City/Contractor Agreement, based upon the City's form. Such contract shall include the terms required by Ohio law and documents required by the Instructions to Bidders and Contract Documents for the Project. The successful Bidder shall have no property interest or rights under the City/Contractor Agreement until the Agreement is properly executed by the City.

10. STATE SALES AND USE TAXES

- a. The City is a political subdivision of the State of Ohio and is exempt from taxation under the Ohio Sales Tax and Use Tax Laws. Building materials that the successful Bidder purchases for incorporation into the Project will be exempt from state sales and use taxes if the successful Bidder provides a properly completed Ohio Department of Taxation Demolition Contract Exemption Certificate to the vendors or suppliers when acquiring the materials. The City will execute properly completed certificates on request.

11. DATE FOR SUBSTANTIAL COMPLETION/LIQUIDATED DAMAGES

- a. Date for Substantial Completion. Each successful Bidder shall have its Work on the Project Substantially Complete (as Substantial Completion is defined in the Contract Documents) as follows: **November 20, 2014**. The Contract Time shall run from the date of the Notice to Proceed or if there is no Notice to Proceed from the Effective Date of the City/Contractor Agreement. The Date for Substantial Completion and the Contract Time may be extended only as set forth in the Contract Documents. By submitting its Bid, each Bidder agrees that the period for performing its Work is reasonable.
- b. Liquidated Damages. If the successful Bidder does not have its Work Substantially Complete by its Date for Substantial Completion, the successful Bidder shall pay the City and the City may set off from amounts otherwise due the successful Bidder any Liquidated Damages. The daily amounts of Liquidated Damages are set forth in the Contract Documents. The total amounts of Liquidated Damages will be calculated based on the total number of calendar days beyond the Date for Substantial Completion that the Bidder's Work is not Substantially Complete. In addition to such Liquidated Damages, the Bidder shall indemnify, defend, and hold the City and its employees and agents harmless from any and all claims, whether or not such claims are proven, and from all costs and expenses incurred as a result of such claims, including but not limited to attorneys' and experts' fees and expenses, and additional inspection costs that arise out of or are related to the Bidder's failure to Substantially Complete its Work by its Date for Substantial Completion. The Bidder's obligations under this Section are joint and several.

12. MODIFICATION/WITHDRAWAL OF BIDS

- a. Modification. A Bidder may modify its Bid by written communication to the City addressed to the City's Representative at any time before the scheduled closing time for receipt of Bids, provided such written communication is received by City's Representative before the Bid deadline. The written communication shall not reveal the

Bid price, but should provide the addition or subtraction or other modification so that the final prices or terms will not be known to the City until the sealed Bid is opened. If the Bidder's written instructions with the change in Bid reveal the Bid amount in any way before the Bid opening, the Bid may be rejected as non-responsive.

- b. Withdrawal. Bids may be withdrawn with permission of the City or in strict accordance with O.R.C. Section 9.31 which generally commands that Bidders may withdraw their bids from consideration if the price of the bid was substantially lower than the other bids, providing the bid was submitted in good faith, and the reason for the price bid being substantially lower was a clerical mistake as opposed to a judgment mistake, and was actually due to an unintentional and substantial arithmetic error or an unintentional omission of a substantial quantity of work, labor, or material made directly in the compilation of the bid. Notice of a claim of right to withdraw such bid must be made in writing filed with the City within two business days after the conclusion of the bid opening procedure.

13. PREVAILING WAGES

- a. This Project is horizontal construction with an estimated cost of **\$ 11,000,000.00**, and the **Bidder IS required to comply with all applicable Ohio Prevailing Wage requirements and labor laws for this Project.**
- b. If Prevailing Wage applies to this Project, the determination of the prevailing rates of wages of mechanics and laborers in accordance with section 4115.05 of the Revised Code for the class of work called for by the Project, in the locality where the work is to be performed, shall be attached to and made part of the Contract Documents.
- c. If Prevailing Wage applies to this Project, the Contractor must pay at least the wage rates subsequently listed in the Wage determinations. The Contractor must submit properly executed copies of the Contractor's and subcontractor's payrolls to the City's Prevailing Wage Coordinator in accordance with the requirements of Section 4115.071 of the O.R.C.. Payroll records shall be kept current as failure to do so will delay the Owner's approval for payment of any pending estimates.

14. ALTERNATES

- a. The City may request bids on alternates. If the City requests bids on alternates, the Bidder should include the cost of the alternates requested on its Bid Form.
- b. At the time of awarding the contract, the City will select or reject alternates as it determines is in its best interest. A Bidder's failure to include in its Bid Form the cost of an alternate selected by the City and applicable to the Bidder's work may render the bid non-responsive and be grounds for the rejection of the bid. Otherwise, the failure to include the cost of an alternate will not be deemed material.
- c. The Bidder acknowledges that although there is an estimate for the cost of the Project, the market conditions may and frequently do result in the estimate being different from the sum of the bids received, either higher or lower. The Bidder understands that the City may include alternates, which may include deduct alternates as well as add alternates, to give it flexibility to build the Project with the funds available. The Bidder

further understands and acknowledges that use of add and deduct alternates is a long held customary practice in the construction industry in the State of Ohio. The Bidder also acknowledges that the City will not make a decision about the alternates on which to base the award of contracts until the bids are received, and the City can compare its available funds with the base bids and the cost or savings from selecting different alternates. The Bidder understands that the award to the Bidder submitting the lowest and best bid will be based on the lowest and best base bid plus selected alternates, and may result in an award to a Bidder other than the Bidder that submitted the lowest base bid. The bidder also acknowledges that its, and other bidders', bids may become responsive or non-responsive based on whether the bidders bid and are qualified for all base work and alternates; and, the City's selection of alternates. The City will evaluate bids to determine the lowest and best bid after it selects the alternates.

- d. If, during the progress of the Work, the City desires to reinstate any alternate not included in the Contract, the City reserves the right to reinstate the alternate at the price bid by the Contractor if such action is taken in sufficient time so as not to delay the progress of the work or cause the Contractor additional expense.

15. UNIT PRICES

- a. Where unit prices are requested in the Bid Form, the Bidder should quote a unit price. Unless otherwise expressly provided in the Bid Documents, such unit prices shall include all labor, materials, and services necessary for the timely and proper installation of the item for which the unit prices are requested. The unit prices quoted in the bid shall be the basis for any Change Orders entered into under the City/Contractor Agreement, unless the Design Professional determines that the use of such unit prices will cause substantial inequity to either the Contractor or the City.
- b. The estimated quantities shown herein are approximate only and the City assumes no responsibility for the accuracy of the estimates. Bidders are cautioned to make their own investigations and determinations of the conditions under which the work will be performed and to base their bids accordingly.

16. ADDENDA

- a. The City reserves the right to issue Addenda changing, altering, or supplementing the Contract Documents before the time set for receiving bids. The City will issue the Addenda to clarify bidders' questions and/or to change, alter, or supplement the Contract Documents.
- b. Any explanation, interpretation, correction, or modification of the Contract Documents will be issued in writing in the form of an Addendum, which shall be the only means considered binding. Any explanations, interpretations, or other representations made by any other means shall not be legally binding. All Addenda shall become a part of the Contract Documents.
- c. Bidders shall submit written questions to the City in sufficient time in advance of the bid opening to allow sufficient time for the City to respond. All Addenda will be issued, except as hereafter provided, and mailed or otherwise furnished to persons who have

obtained Contract Documents for the Project, before the published time for the opening of bids.

- d. Copies of each Addendum will be sent only to the Bidders to whom Contract Documents have been issued and to Plan Rooms where copies of the Contract Documents are maintained. Receipt of Addenda shall be indicated by Bidders in the space provided on the Bid Form. Bidders are responsible for acquiring issued Addenda in time to incorporate them into their bid. Bidders should contact the City before the bid opening to verify the number of Addenda issued.
- e. Each Bidder shall carefully read and review the Contract Documents and immediately bring to the attention of the City any error, omission, inconsistency, or ambiguity therein.
- f. If a Bidder fails to indicate receipt of all Addenda through the last Addendum issued by the Design Professional on its Bid Form, the bid of such Bidder will be deemed to be responsive only if:
 - i. The bid received clearly indicates that the Bidder received the Addendum, such as where the Addendum added another item to be bid upon and the Bidder submitted a bid on that item; or
 - ii. The Addendum involves only a matter of form or is one that has either no effect or has merely a trivial or negligible effect on price, quantity, quality, or delivery of the item bid upon.

17. PREFERENCE FOR PUBLIC IMPROVEMENT CONTRACTS (As Selected)

- a. With respect to the award of this Contract, the City shall give preference to a contractor having its principal place of business in Ohio over a contractor having its principal place of business in a state that provides a preference in favor of contractors of that state for the same type of work. Where a preference is provided by another state for contractors of that state, a contractor having its principal place of business in Ohio is to be granted by the City the same preference over them in the same manner and on the same basis and to the same extent as the preference is granted in letting contracts for the same type of work by the other state. If one party to a joint venture is a contractor having its principal place of business in Ohio, the joint venture shall be considered as having its principal place of business in Ohio.
- b. With respect to the award of this Contract, the City shall not give preference to a contractor having its principal place of business in Ohio over other contractors.

18. METHOD OF AWARD

- a. In evaluating Bids, the City may conduct such investigations as are deemed necessary to establish the qualifications and financial ability of the Bidder and its subcontractors and suppliers. The Bidder authorizes the City and its representatives to contact the owners, design professionals, and others having knowledge (collectively "Contacts") on projects on which the Bidder has worked and authorizes and requests such Contacts to provide the City with a candid evaluation of the Bidder's performance. By submitting its Bid, the Bidder agrees that if it or any person, directly or indirectly, on its behalf or for its benefit

brings an action against any of such Contacts or the employees of any of them as a result of or related to such candid evaluation, the Bidder will indemnify and hold such Contacts and the employees of any of them from any claims whether or not proven that are part of or are related to such action and from all legal fees and expenses incurred by any of them arising out of or related to such legal action. This obligation is expressly intended for the benefit of such Contacts and the employees of each of them.

- b. All Bids shall remain open for acceptance for 60 days following the day of the Bid opening, but the City may, in its sole discretion, release any Bid and return the Bid Guaranty before that date.
- c. The City reserves the right to reject any, part of any, or all Bids and to waive any informalities and irregularities. The Bidder expressly acknowledges this right of the City to reject any or all Bids or to reject any incomplete or irregular Bid. The City will award a single contract for each of the Bid packages listed above, unless it determines to reject one or more Bid packages. Bidders must furnish all information requested. Failure to do so may result in disqualification of the Bid.
- d. Determination of the Bidder Submitting the Lowest and Best Bid. Subject to the right of the City to reject any or all Bids, the City will award the Contract for the Work to the Bidder submitting the lowest and best Bid, taking into consideration accepted alternates.
 - i. Buy Ohio/American and Ohio Contractor Bid Preference. If selected above, the City shall apply a domestic Ohio bid preference as outlined below.
 - 1. Bids will first be evaluated to determine that a bidder's offering is for a domestic source end product as defined in 41 C.F.R. section 1-6.101(D). Information furnished by the Bidder in its Bid shall be relied upon in making this determination. Any Bidder's offering that does not offer a domestic source end product shall be rejected, except where the City determines that certain articles, materials and supplies are not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities and of a satisfactory quality.
 - a. Following the determination as to domestic source end products, remaining bids and proposals shall be evaluated as set forth below, so as to give preference to Ohio bids or bidders who are located in a border state, provided that the border state imposes no greater restrictions than contained in this rule.
 - 2. Buy Ohio Act compliance
 - a. Where the preliminary analysis of bids identifies the apparent low bid as an Ohio bid or a bid from a border state, the City shall proceed with its standard contract award practices and procedures as set forth in the Instructions to Bidders.

- b. Where the preliminary analysis identifies the apparent low bid as one other than an Ohio bid or bid from a border state, the City shall consider the following factors:
 - i. Whether the goods or services can be procured in-state in sufficient and reasonably available quantities and of a satisfactory quality;
 - ii. Whether an Ohio bid has been submitted;
 - iii. Whether the lowest Ohio bid, if any, offers a price to the City deemed to be an excessive price (defined as a price that exceeds by more than five per cent the lowest non-Ohio bid submitted);
 - iv. Whether the lowest Ohio bid, if any, offers a disproportionately inferior product or service.
 - c. Where the City determines that selection of the lowest Ohio bid, if any, will not result in an excessive price or disproportionately inferior product or service, the City shall include that Bidder in its lowest and best analysis.
 - d. Where the City otherwise determines it is advantageous to propose the award of a contract to other than an Ohio bidder or bidder from a border state, the City shall include that Bidder in its lowest and best analysis.
- ii. In addition to the forgoing, City may consider the following criteria in determining the lowest and best bidder; and, in its discretion, may consider and give such weight to these criteria as it deems appropriate:
1. Past Contract Performance
 - a. Whether Bidder has failed to perform a contract within the last five years from the date of Bid submission based on all information including fully settled disputes or litigation. A fully settled dispute or litigation is one that has been resolved in accordance with the dispute resolution mechanism under the respective contract, and where all appeal instances available to the Bidder have been exhausted.
 - b. Whether Bidder has failed to sign a contract after submitting a bid security in the past five years.
 - c. All pending litigation shall in total not represent more than ten percent (10%) of the Bidder's net worth and shall be treated as resolved against the Bidder.
 - d. Bidder's history of making claims against others or having claims made against it; and, if the Bidder's management operates or has operated another construction company, the work history of that

company in determining whether the Bidder submitted the lowest and best Bid.

2. Financial Ability

- a. The Bidder's financial ability to complete the Contract successfully and on time without resort to its Surety.
- b. Submission of audited financial statements including balance sheets, income statements, and cash flow statements, or other financial statements acceptable to the City, for the last three years to demonstrate the current soundness of the Bidder's financial position and its prospective long term profitability.
 - i. The Bidder's average coefficient of Current ratio (Current Assets/Current Liabilities) compared to 1. The greater, the better.
 - ii. The Bidder's average coefficient of Debt ratio (Total Debt/Total Assets) compared to 1. The lesser, the better.

3. Experience

- a. Whether the Bidder has experience under contracts in the role required by this Contract for at least the last five years before the Bid submission deadline, and with activity in at least nine months each year.
- b. Whether the Bidder has participated as in the role required by this Contract in at least two contracts within the last five years, each with a value of at least 85% of the stated estimate for this Project, that have been successfully and substantially completed and that are similar to the proposed Works. Similarity shall be based on the physical size, complexity, methods, technology or other characteristics as described in the Contract Documents.
- c. For the above or other contracts executed during the period stipulated in above, whether the Bidder has experience in the following key activities: **ODOT Pre-Qualification for horizontal work listed in scope of project including;** 4-lane boulevard with modern multi-lane roundabout; curb and gutter; asphalt shared-use path; AEP duct system; water main; sanitary sewer; storm sewer; precast reinforced concrete arch culvert including precast headwalls and wingwalls; dry-laid stone wall; and street lights..
- d. Whether the Bidder has a record of consistent customer satisfaction and of consistent completion of projects, including projects that are comparable to or larger and more complex than the Project, on time and in accordance with the applicable Contract Documents.

- e. The Bidder's prior experience on other projects with the CITY OF DUBLIN and with other public owners, including the Bidder's demonstrated ability to complete its work on these projects in accordance with the Contract Documents and on time, and will also consider its ability to work with the City as a willing, cooperative, and successful team member.
4. Whether the Bidder possesses or can obtain sufficient equipment and facilities to complete the Project.
 5. The adequacy, in numbers and experience, of the Bidder's work force to complete the Contract successfully and on time.
 6. The Bidder's compliance with federal, state, and local laws, rules, and regulations, including but not limited to the Occupational Safety and Health Act, Prevailing Wage laws, and Ethics laws.
 7. The Bidder's participation in a drug-free workplace program acceptable to the City, and the Bidder's record for both resolved and unresolved findings of the Auditor of State for recovery as defined in Section 9.24 of the O.R.C..
 8. The City's prior experience with the Bidder's surety.
 9. The Bidder's interest in the Project as evidenced by its attendance at any pre-Bid meetings or conferences for Bidders.
 10. Depending upon the type of the work, other essential factors, as the City may determine and as are included in the Specifications.
 11. The foregoing information with respect to each of the Subcontractors and Suppliers that the Bidder intends to use on the Project.
- e. With its Bid, the Bidder will complete and submit to the City a completed Contractor's Qualification Statement (using the form included in the Contract Documents), and thereafter will provide the City with such additional information as the City may request regarding the Bidder's qualifications.
 - f. The failure to submit requested information on a timely basis may result in the determination that the Bidder is not the lowest and best Bidder.
 - g. With its Bid, the Bidder shall submit a list of proposed subcontractors using the form included with the Contract Documents. Subcontract work shall not total more than **50%** of the Contractor's Contract with the City.
 - h. The City reserves the right to reject proposed Subcontractors before the Contract is awarded. The Bidder shall replace rejected subcontractors with subcontractors acceptable to the City with no change in the amount of the Bid submitted by the Bidder to City. After approval by the City of the list of proposed Subcontractors, Suppliers, and manufacturers submitted by the successful Bidder, the list shall not be changed unless written approval of the change is authorized by the City. The City reserves the right to reject Subcontractors after the Contract is awarded. In that instance, the City shall only

be liable to the Contractor for the difference in Contract Price between the rejected subcontractor and the replacement subcontractor. The Contractor's markup on the replacement subcontractor shall be equal to or less than the markup on the rejected subcontractor contract.

- i. With its Bid, the Bidder shall submit a list of supervisory personnel with which it intends to staff the Project indicating their respective roles on the Project. The City reserves the right to reject proposed personnel both before and after the Contract is awarded with no additional cost to the City. Once the personnel list is approved by the City, it shall not be changed without the written consent of the City.
- j. No Bidder may withdraw its Bid within sixty (60) days after the date Bids are opened. The City reserves the right to waive any formalities or irregularities or to reject any or all Bids.
- k. The City reserves the right to disqualify Bids, before or after opening, upon evidence of collusion with intent to defraud or other illegal practices on the part of the Bidder.
- l. By submitting its Bid, the Bidder agrees that the City's determination of which Bidder is the lowest and best Bidder shall be final and conclusive, and that if the Bidder or any person on its behalf challenges such determination in any legal proceeding, the Bidder will indemnify and hold the City and its employees and agents harmless from any claims included or related to such legal proceeding, whether or not proven, and from legal fees and expenses incurred by the City, its employees, or agents that arise out of or are related to such challenge.
- m. Award of Contract. The award and execution of the Contract, when required, will only be made pursuant to the legal process applicable to the City for awarding contracts of this nature.

END OF INSTRUCTIONS TO BIDDERS

C. REQUEST FOR INFORMATION (PRE-BID)

CITY OF DUBLIN EMERALD PARKWAY - PHASE 8

The person, firm, or corporation submitting a request for information shall be responsible for its prompt delivery and do so in a manner that will allow a sufficient period of time for the issuance and delivery of an Addendum before receipt of bids. The CITY OF DUBLIN will not be responsible for any other explanations of the Contract Documents made before the receipt of bids.

Please submit all pre-bid questions in writing by facsimile or electronic mail (Email) to: Mike Sweder and Ken Richardson, 614-410-4699

Company:	Contact Name:
Email:	Phone:
Requested Information:	

D. BID COVERSHEET

BIDDERS SHALL ATTACH THIS FORM AS THE COVERSHEET TO THE BID. USE THE BOXES BELOW TO CHECK YOUR WORK. COMPLETING THIS FORM DOES NOT GUARANTEE THAT YOUR BID WILL BE RESPONSIVE OR SELECTED; BUT, SHOULD HELP TO OVERCOME THE MOST COMMON BIDDER MISTAKES. THE CITY OF DUBLIN, OHIO RESERVES THE RIGHT TO REJECT ANY AND ALL PROPOSALS AND TO WAIVE ANY INFORMALITIES OR IRREGULARITIES IN THE PROPOSALS.

- 1. Bidder's Company Name: _____
- 2. Total Bid (From Bid Form): \$ _____

BID PACKAGE

- Reviewed in detail?

PROPOSAL

- Acknowledged any addenda?
- Total bid amount completed in words and figures?
- Signed by a person with authority to bind your company?
- No changes made to form or conditions added?

BID SCHEDULE

- Completely filled in?

COMBINED BID/PERFORMANCE/PAYMENT BOND

- Your company name in the Principal blank?
- Surety name in the Surety blank?
- Dollar amount should be blank
- Signed as indicated?

COMBINED DELINQUENT PERSONAL PROPERTY TAX & NONCOLLUSION AFFIDAVIT

- Filled in?
- Signed?
- Notarized?

AFFIDAVIT OF AUTHORITY

- Needs completed if you are anything other than a sole proprietor
- Filled in?
- Signed?
- Notarized?

POWER OF ATTORNEY (OUT OF STATE CORPORATION)

- Must have if you are an out of state corporation

LIST OF SUBCONTRACTORS

- Completed?

LIST OF SUPERVISORY PERSONNEL

Completed?

CONTRACTOR QUALIFICATION STATEMENT

Completed?

INSURANCE CERTIFICATE

Submitted?

WORKERS COMPENSATION COVERAGE

Submitted?

W-9 FORM

Submitted?

E. PREVAILING WAGE RATES DISK

II. BIDDING FORMS

A. PROPOSAL

**CITY OF DUBLIN
EMERALD PARKWAY - PHASE 8**

_____ (the "Bidder") submits this Proposal having read and examined the contract documents, including but not limited to the Invitation to Bid.

Addenda Number	Date of Receipt
_____	_____
_____	_____
_____	_____

The Bidder proposes to perform all work for the Agreement for Construction in accordance with the contract documents for the following sum:

Total Bid (in figures): \$ _____

Total Bid (in words): _____

In the event of a discrepancy between the amount of the total bid as written in figures and in words, the amount written in words shall govern.

Unless otherwise specified in the Bid Document the amount of the total bid is based on the unit prices or lump sum set forth in the Bid Schedule attached hereto and incorporated herein.

The Bidder understands and agrees that all work to be performed under the Agreement for Construction shall be completed by the date or time required by the Contract Documents unless an extension of time is granted by the CITY OF DUBLIN.

Upon failure to have the work completed within the project time, the CITY OF DUBLIN, OHIO shall be entitled to retain or recover from the Bidder, as liquidated damages, and not as a penalty, the amounts set forth in the following table for each and every calendar day until completion. The right of the CITY OF DUBLIN, OHIO to recover liquidated damages shall not substitute for any recovery for additional costs in the event the Bidder fails to complete the Agreement for Construction according to the Contract Documents.

Liquidated Damages:

<u>Contract Amount</u>	<u>Dollars per Day</u>
\$0-25,000	100.00
25,001-50,000	150.00

50,001-100,000	200.00
100,001-500,000	300.00
500,001-1,000,000	500.00
1,000,001-2,000,000	750.00
2,000,001-5,000,000	1,000.00
5,000,001-10,000,000	1,500.00
Over \$10,000,001	2,000.00

REPRESENTATIONS OF THE BIDDER

The Bidder represents the following:

1. The Bidder has read and understands the Contract Documents and understands that it must comply with all requirements of the Contract Documents, regardless of whether the Bidder has actual knowledge of the requirements and regardless of any statement or omission made by the Bidder that might indicate a contrary intention.
2. The Bid is based upon the items specified by the Contract Documents.
3. The Bidder has visited the site, become familiar with local conditions, and has correlated personal observations about the requirements of the Contract Documents. The Bidder has no outstanding questions regarding the interpretation of the Contract Documents.
4. Within ten (10) business days from the date of receipt the Notice of Intent to Award, the Bidder understands that it must enter into and execute an agreement for CITY OF DUBLIN, EMERALD PARKWAY - PHASE 8 PROJECT if awarded based on this proposal. If the Bidder does not execute an agreement for the Project for any reason, the Bidder and the Bidder's surety shall be liable to the CITY OF DUBLIN, Ohio as provided in O.R.C. Section 153.54.
5. Within ten (10) business days of the date of receipt of the Notice of Intent to Award, the Bidder understands that it must submit the following:
 - a. Performance Bond. (If combined bid/performance/payment not submitted already).
 - b. Copy of Additional Insured Endorsement.
6. The Bidder understands that it must furnish any other information requested by the CITY OF DUBLIN.

The Bidder hereby signs this Proposal on the ___ day of _____, 2013.

If Bidder is an individual, complete the following:

Signature: _____

Print Name: _____

Name of Business: _____

(if different from above)

Federal Identification Number: _____

Address: _____

Telephone: () _____

Fax: () _____

If Bidder is a partnership, complete the following:

Name of Partnership: _____

By: _____

(Signature)

Print Name: _____

Federal Identification Number: _____

Address: _____

Telephone: () _____

Fax: () _____

Names and Addresses of all general partners:

If Bidder is a joint venture, complete the following:

Name of Joint Venture: _____

By: _____

(Signature)

Print Name: _____

Address: _____

Telephone: () _____

Fax: () _____

Complete the following for each firm represented by the joint venture:

1. Name: _____

Federal Identification Number: _____

Address: _____

Telephone: () _____

Fax: () _____

2. Name: _____

Federal Identification Number: _____

Address: _____

Telephone: () _____

Fax: () _____

If Bidder is a corporation, complete the following:

Name of Corporation: _____

By: _____

(Signature)

Print Name: _____

Title: _____

Federal Identification Number: _____

Address: _____

Telephone: () _____

Fax: () _____

State of Incorporation: _____

Names and addresses of Corporate Officers:

If Bidder is an entity other than those described above, complete the following:

Name of Bidder:

By: _____

(Signature)

Print Name: _____

Title: _____

Federal Identification Number: _____

Address: _____

Telephone: () _____

Fax: () _____

Type of Business Entity: _____

Names and addresses of all Principals:

BID SCHEDULE

BIDDER agrees to perform all work described in the CONTRACT DOCUMENTS for the following unit prices:

**Emerald Parkway - Phase 8
07-008-CIP**

CITY OF DUBLIN

REF NO.	(1) ITEM	(2) DESCRIPTION	(3) QUANT.	(4) UNIT	(5) LABOR (\$)	(6) MATERIAL (\$)	(7) (5)+(6) TOTAL (\$)	(8) (3) x (7) TOTAL EXTENDED INFORMAL PRICE (\$)
		ROADWAY						
1	201	18" TREES OR STUMPS REMOVED	205	EACH				
2	201	30" TREES OR STUMPS REMOVED	25	EACH				
3	201	48" TREES OR STUMPS REMOVED	6	EACH				
4	201	CLEARING AND GRUBBING	1	LUMP				
5	202	PIPE REMOVED AND DISPOSED OF	700	LF				
6	202	CATCH BASIN OR INLET REMOVED AND DISPOSED OF	6	EACH				
7	202	CONCRETE CURB REMOVED AND DISPOSED OF	155	LF				
8	202	CONCRETE CURB & GUTTER REMOVED AND DISPOSED OF	105	LF				
9	202	SIDEWALK REMOVED AND DISPOSED OF (CONCRETE)	6,860	SF				
10	203	EXCAVATION (SOIL)	82,700	CY				
11	203	EXCAVATION (ROCK)	40,300	CY				
12	203	EMBANKMENT	13,250	CY				
13	204	SUBGRADE COMPACTION	54,250	SY				
14	204	EXCAVATION OF SUBGRADE	5,500	CY				
15	204	GRANULAR EMBANKMENT, NO. 2 STONE, A.P.P.	5,500	CY				
16	254	PAVEMENT PLANING, 1 1/4"	12,050	SY				
17	254	PAVEMENT PLANING, 3"	140	SY				
18	607	FENCE, MISCELLANEOUS: WOOD FENCE, A.P.P.	207	LF				
19	616	WATER (FOR DUST CONTROL)	80	M. GAL				
20	619	FIELD OFFICE, TYPE "B"	12	MONTHS				
21	623	CONSTRUCTION LAYOUT STAKES	1	LUMP				
22	624	MOBILIZATION	1	LUMP				
23	653	TOPSOIL FURNISHED AND PLACED, A.P.P.	4,850	CY				

BID SCHEDULE

BIDDER agrees to perform all work described in the CONTRACT DOCUMENTS for the following unit prices:

**Emerald Parkway - Phase 8
07-008-CIP**

CITY OF DUBLIN

REF NO.	(1) ITEM	(2) DESCRIPTION	(3) QUANT.	(4) UNIT	(5) LABOR (\$)	(6) MATERIAL (\$)	(7) (5)+(6) TOTAL (\$)	(8) (3) x (7) TOTAL EXTENDED INFORMAL PRICE (\$)
24	659	SEEDING AND MULCHING, A.P.P.	58,000	SY				
25	659	WATER	100	M. GAL				
26	659	COMMERCIAL FERTILIZER	7	TON				
27	SPEC	STEEL-BACKED TIMBER GUARDRAIL, TYPE A	365	LF				
28	SPEC	STEEL-BACKED TIMBER GUARDRAIL, TERMINAL SECTION, TYPE SBT FAT-30	4	EACH				
29	SPEC	PROOF SURVEY, A.P.P.	1	LUMP				
ROADWAY SUBTOTAL =								
SANITARY SEWER								
30	604	MANHOLE TYPE "C" (AA-S102)	20	EACH				
31	901	8" SANITARY SEWER PIPE WITH TYPE 1 BEDDING	370	LF				
32	901	10" SANITARY SEWER PIPE WITH TYPE 1 BEDDING	1,100	LF				
33	901	12" SANITARY SEWER PIPE WITH TYPE 1 BEDDING	2,375	LF				
34	901	15" SANITARY SEWER PIPE WITH TYPE 1 BEDDING	1,615	LF				
35	918	6" SANITARY HOUSE CONNECTION SERVICE, COMPLETE	1	EACH				
SANITARY SEWER SUBTOTAL =								
STORM SEWER								
36	601	ROCK CHANNEL PROTECTION, TYPE "C" WITH FILTER FABRIC, A.P.P.	65	CY				
37	601	CRUSHED AGGREGATE SLOPE PROTECTION, NO. 2 STONE WITH FILTER FABRIC, A.P.P.	200	CY				
38	604	CURB AND GUTTER INLET (AA-S125) WITH BIKE SAFE GRATE	47	EACH				
39	604	STANDARD CATCH BASIN (AA-S133) WITH BIKE SAFE GRATE (E.J. #5110, TYPE M3)	6	EACH				
40	604	MANHOLE TYPE "C" (AA-S102)	26	EACH				

BID SCHEDULE

BIDDER agrees to perform all work described in the CONTRACT DOCUMENTS for the following unit prices:

**Emerald Parkway - Phase 8
07-008-CIP**

CITY OF DUBLIN

REF NO.	(1) ITEM	(2) DESCRIPTION	(3) QUANT.	(4) UNIT	(5) LABOR (\$)	(6) MATERIAL (\$)	(7) (5)+(6) TOTAL (\$)	(8) (3) x (7) TOTAL EXTENDED INFORMAL PRICE (\$)
41	604	ODOT NO. 2-3 CATCH BASIN (CB-2-3) WITH BIKE SAFE GRATE (E.J. #5110, TYPE M3)	3	EACH				
42	604	ODOT NO. 2-4 CATCH BASIN (CB-2-4) WITH BIKE SAFE GRATE (E.J. #5110, TYPE M3)	1	EACH				
43	604	ODOT NO. 2-5 CATCH BASIN (CB-2-5) WITH BIKE SAFE GRATE (E.J. #5110, TYPE M3)	1	EACH				
44	604	ODOT NO. 3 CATCH BASIN (CB-3) WITH BIKE SAFE GRATE (E.J. #5110, TYPE M3)	1	EACH				
45	604	ODOT NO. 3 MANHOLE	2	EACH				
46	605	4-INCH PIPE UNDERDRAIN (INCLUDING #57 AGGREGATE BASE)	12,500	LF				
47	895	MANUFACTURED WATER QUALITY STRUCTURE, A.P.P.	1	LUMP				
48	901	12" STORM SEWER PIPE; ADS N-12 OR APPROVED EQUAL, WITH TYPE 1 BEDDING	80	LF				
49	901	12" STORM SEWER PIPE, ASTM C-76, CL IV, WITH TYPE 1 BEDDING	2,015	LF				
50	901	12" STORM SEWER PIPE, ASTM C-76, CL IV, WITH TYPE 1 BEDDING AND WATERTIGHT JOINTS	145	LF				
51	901	15" STORM SEWER PIPE, ASTM C-76, CL IV, WITH TYPE 1 BEDDING	540	LF				
52	901	15" STORM SEWER PIPE, ASTM C-76, CL IV, WITH TYPE 1 BEDDING AND WATERTIGHT JOINTS	50	LF				
53	901	18" STORM SEWER PIPE, ASTM C-76, CL III, WITH TYPE 1 BEDDING	1,520	LF				
54	901	21" STORM SEWER PIPE, ASTM C-76, CL III, WITH TYPE 1 BEDDING	2,110	LF				
55	901	24" STORM SEWER PIPE, ASTM C-76, CL III, WITH TYPE 1 BEDDING	710	LF				

BID SCHEDULE

BIDDER agrees to perform all work described in the CONTRACT DOCUMENTS for the following unit prices:

**Emerald Parkway - Phase 8
07-008-CIP**

CITY OF DUBLIN

REF NO.	(1) ITEM	(2) DESCRIPTION	(3) QUANT.	(4) UNIT	(5) LABOR (\$)	(6) MATERIAL (\$)	(7) (5)+(6) TOTAL (\$)	(8) (3) x (7) TOTAL EXTENDED INFORMAL PRICE (\$)
56	901	27" STORM SEWER PIPE, ASTM C-76, CL III, WITH TYPE 1 BEDDING	305	LF				
57	901	30" STORM SEWER PIPE, ASTM C-76, CL III, WITH TYPE 1 BEDDING	265	LF				
58	901	36" STORM SEWER PIPE, ASTM C-76, CL III, WITH TYPE 1 BEDDING	125	LF				
59	901	42" STORM SEWER PIPE, ASTM C-76, CL III, WITH TYPE 1 BEDDING	150	LF				
60	901	54" STORM SEWER PIPE, ASTM C-76, CL III, WITH TYPE 1 BEDDING	25	LF				
61	901	60" STORM SEWER PIPE, ASTM C-76, CL III, WITH TYPE 1 BEDDING	225	LF				
62	901	24"x 38" STM. SEWER PIPE; ASTM C-507, CL. HE-III, W/ TYPE 1 BED. AND WATERTIGHT JOINTS	70	LF				
63	901	29"x 45" STM. SEWER PIPE; ASTM C-507, CL. HE-III, W/ TYPE 1 BEDDING	15	LF				
64	SPEC	CAST-IN-PLACE PIPE CULVERT HEADWALL (AA-S167)	1	EACH				
65	SPEC	REINFORCED CONCRETE FLARED END SECTION	3	EACH				
66	SPEC	ADS FLARED END SECTION WITH N-12 ADAPTER FITTING	2	EACH				
67	SPEC	STORM DETENTION CONTROL STRUCTURE (MH 78)	1	LUMP				
							STORM SEWER SUBTOTAL =	
		CULVERT (BILLINGSLEY CREEK)*						
68	503	COFFERDAMS, CRIBS, AND SHEETING	1	LUMP				
69	509	EPOXY COATED REINFORCING STEEL	9,780	LBS				
70	511	CLASS "C" CONCRETE, FOOTING	123	CY				

BID SCHEDULE

BIDDER agrees to perform all work described in the CONTRACT DOCUMENTS for the following unit prices:

**Emerald Parkway - Phase 8
07-008-CIP**

CITY OF DUBLIN

REF NO.	(1) ITEM	(2) DESCRIPTION	(3) QUANT.	(4) UNIT	(5) LABOR (\$)	(6) MATERIAL (\$)	(7) (5)+(6) TOTAL (\$)	(8) (3) x (7) TOTAL EXTENDED INFORMAL PRICE (\$)	
71	512	TYPE 2 WATERPROOFING	611	SY					
72	601	ROCK CHANNEL PROTECTION, TYPE "B" WITH FILTER FABRIC	230	CY					
73	601	ROCK CHANNEL PROTECTION, TYPE "C" WITH FILTER FABRIC	203	CY					
74	603	CONDUIT, TYPE "A" PRECAST REINFORCED CONCRETE ARCH SECTIONS, A.P.P. (28' SPAN x 10' RISE INCLUDING PRECAST HEADWALLS AND WINGWALLS)	114	LF					
75	613	FLOWABLE CONTROLLED DENSITY FILL, TYPE 2, MUD MAT	20	CY					
76	SPEC	STRUCTURE; MISC: MANUFACTURED STONE VENEER	2,070	SF					
77	SPEC	POLYURETHANE CAULKING (BEIGE)	150	LF					
		<i>CULVERT (BILLINGSLEY CREEK)* SUBTOTAL =</i>							
		WATER							
78	801	6" DUCTILE IRON PIPE AND FITTINGS, CL 52	120	LF					
79	801	8" DUCTILE IRON PIPE AND FITTINGS, CL 52	220	LF					
80	801	12" DUCTILE IRON PIPE AND FITTINGS, CL 52	6,260	LF					
81	802	6" GATE VALVE AND APPURTENANCES	21	EACH					
82	802	8" GATE VALVE AND APPURTENANCES	2	EACH					
83	802	12" GATE VALVE AND APPURTENANCES	1	EACH					
84	805	1" WATER SERVICE TAP, COMPLETE	1	EACH					
85	807	STANDARD HEAVY DUTY VALVE BOX	35	EACH					
86	809	FIRE HYDRANT	19	EACH					
87	SPEC	SURVEY COORDINATES	1	LUMP					
		<i>WATER SUBTOTAL =</i>							

BID SCHEDULE

BIDDER agrees to perform all work described in the CONTRACT DOCUMENTS for the following unit prices:

**Emerald Parkway - Phase 8
07-008-CIP**

CITY OF DUBLIN

REF NO.	(1) ITEM	(2) DESCRIPTION	(3) QUANT.	(4) UNIT	(5) LABOR (\$)	(6) MATERIAL (\$)	(7) (5)+(6) TOTAL (\$)	(8) (3) x (7) TOTAL EXTENDED INFORMAL PRICE (\$)
		PAVEMENT						
88	301	BITUMINOUS AGGREGATE BASE (ROADWAY)	17,520	TON				
89	301	BITUMINOUS AGGREGATE BASE (BIKEPATH)	1,900	TON				
90	304	AGGREGATE BASE (ROADWAY)	6,465	CY				
91	304	AGGREGATE BASE (BIKEPATH)	2,110	CY				
92	407	TACK COAT, BITUMINOUS	1,830	GAL				
93	448	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, MEDIUM TRAFFIC	3,410	TON				
94	448	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, MEDIUM TRAFFIC (ROADWAY)	3,265	TON				
95	448	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, MEDIUM TRAFFIC (BIKEPATH)	850	TON				
96	608	CURB RAMPS, A.P.P.	12	EACH				
97	608	4" CONCRETE WALK (INCLUDING #57 AGGREGATE BASE)	5,550	SF				
98	608	4" CONCRETE WALK WITH INTEGRAL CURB (INCLUDING ITEM 304 AGGREGATE BASE.) A.P.P.	975	SF				
99	609	SPECIAL MOUNTABLE CONCRETE CURB, A.P.P.	375	LF				
100	609	6" CONCRETE COMBINATION CURB AND GUTTER (INCLUDING #57 AGG. BASE)	11,925	LF				
101	609	STRAIGHT 18" CONCRETE CURB (INCLUDING #57 AGGREGATE BASE)	11,170	LF				
102	SPEC	TRUCK APRON PAVEMENT, A.P.P.	377	SY				
103	SPEC	BRICK PAVERS, A.P.P.	1,110	SY				
104	SPEC	ASPHALT DRIVEWAY - RESIDENTIAL, A.P.P.	210	SY				
105	SPEC	CONCRETE DRIVEWAY - RESIDENTIAL, A.P.P.	40	SY				
106	SPEC	GRAVEL DRIVEWAY - RESIDENTIAL, A.P.P.	105	SY				

BID SCHEDULE

BIDDER agrees to perform all work described in the CONTRACT DOCUMENTS for the following unit prices:

**Emerald Parkway - Phase 8
07-008-CIP**

CITY OF DUBLIN

REF NO.	(1) ITEM	(2) DESCRIPTION	(3) QUANT.	(4) UNIT	(5) LABOR (\$)	(6) MATERIAL (\$)	(7) (5)+(6) TOTAL (\$)	(8) (3) x (7) TOTAL EXTENDED INFORMAL PRICE (\$)	
107	SPEC	DETECTABLE WARNING, ADA SOLUTIONS RETROFIT, SURFACE APPLIED, 2'X 8', BRICK RED	20	EACH					
		<i>PAVEMENT SUBTOTAL =</i>							
		ELECTRICAL (480V)*							
108	625	CONNECTOR KIT, TYPE II	59	EACH					
109	625	CONNECTOR KIT, TYPE III	118	EACH					
110	625	CABLE SPLICE KITS	27	EACH					
111	625	TRANSFORMER BASE	59	EACH					
112	625	LIGHT POLE, 25'- 0", 10" DIA., BANNER ARM	1	EACH					
113	625	LIGHT POLE, 35'- 0", 10" DIA., BANNER ARM	58	EACH					
114	625	LIGHT POLE FOUNDATION, 10" DIA, 10'- 6" DEPTH	59	EACH					
115	625	#4 AWG, STR, CU, 600V, RHW	33,768	LF					
116	625	#4 AWG, SOLID, CU, BARE, GROUND CONDUCTOR	295	LF					
117	625	#12 AWG, SOLID, CU, 600V, XHHW	579	LF					
118	625	#10 AWG, SOLID, CU, 600V, XHHW, POLE AND BRACKET CABLE	6,519	LF					
119	625	CONDUIT, 2" PVC, 713.07	10,912	LF					
120	625	CONDUIT, 3" SLEEVE, PVC, SCH 80, 713.05	185	LF					
121	625	LUMINAIRE, 100 LED, TYPE 2, STREET LIGHT, 480V, 1 PHASE	59	EACH					
122	625	TRENCH INCL. EXCAVATION, BACKFILL & SEEDING, A.P.P.	10,721	LF					
123	625	PULL BOX, 725.06, POLYMER CONCRETE, 24"	6	EACH					
124	625	GROUND ROD	60	EACH					
125	625	CADWELD CONNECTION	60	EACH					
126	625	POWER SERVICE	1	EACH					

BID SCHEDULE

BIDDER agrees to perform all work described in the CONTRACT DOCUMENTS for the following unit prices:

**Emerald Parkway - Phase 8
07-008-CIP**

CITY OF DUBLIN

REF NO.	(1) ITEM	(2) DESCRIPTION	(3) QUANT.	(4) UNIT	(5) LABOR (\$)	(6) MATERIAL (\$)	(7) (5)+(6) TOTAL (\$)	(8) (3) x (7) TOTAL EXTENDED INFORMAL PRICE (\$)	
127	625	PLASTIC, METALIZED CAUTION TAPE	10,721	LF					
128	625	ELECTRICAL TEST	1	LUMP					
129	SPEC	HALF-BLIND COUPLING CAPS, ALUMINUM, INSTALLED, A.P.P.	118	EACH					
		<i>ELECTRICAL (480V)* SUBTOTAL =</i>							
		EROSION CONTROL							
130	207	CONSTRUCTION SEEDING AND MULCHING, A.P.P.	40,000	SY					
131	207	INLET PROTECTION, A.P.P.	58	EACH					
132	207	FILTER FABRIC FENCE	4,300	LF					
133	207	ROCK CHECK DAM	115	CY					
134	207	ROCK WATER BAR, A.P.P.	3	EACH					
135	207	STABILIZED CONSTRUCTION ENTRANCE	60	CY					
136	671*	EROSION CONTROL MAT	36,600	SY					
137	SPEC	TREE PROTECTION FENCE	3,500	LF					
		<i>EROSION CONTROL SUBTOTAL =</i>							
		AEP DUCT SYSTEM							
138	SPEC	TRENCH TYPE 1 - ASPHALT ROADWAY, A.P.P.	250	LF					
139	SPEC	TRENCH TYPE 2 - NON-PAVED AREA, A.P.P.	80	LF					
140	SPEC	TRENCH TYPE 3 - FUTURE PAVED AREA, A.P.P.	5,400	LF					
141	SPEC	6" PVC CONDUIT, TYPE EB	33,400	LF					
142	SPEC	CONCRETE ENCASEMENT, PEA GRAVEL, CLASS "A"	565	CY					
143	SPEC	PRECAST CONCRETE ELECTRIC MANHOLE	9	EACH					
		<i>AEP DUCT SYSTEM SUBTOTAL =</i>							
		SIGNAL INTERCONNECT *							
144	625	CONDUIT, 2", 725.05	5,210	LF					
145	625	CONDUIT, 3", 725.05	405	LF					
146	625	CONDUIT, 3", 725.05, A.P.P.	85	LF					

BID SCHEDULE

BIDDER agrees to perform all work described in the CONTRACT DOCUMENTS for the following unit prices:

**Emerald Parkway - Phase 8
07-008-CIP**

CITY OF DUBLIN

REF NO.	(1) ITEM	(2) DESCRIPTION	(3) QUANT.	(4) UNIT	(5) LABOR (\$)	(6) MATERIAL (\$)	(7) (5)+(6) TOTAL (\$)	(8) (3) x (7) TOTAL EXTENDED INFORMAL PRICE (\$)
147	625	TRENCH, A.P.P.	5,210	LF				
148	625	PULL BOX, 725.06, 18"	15	EACH				
149	625	PLASTIC CAUTION TAPE, A.P.P.	5,125	LF				
					<i>SIGNAL INTERCONNECT SUBTOTAL =</i>			
		TRAFFIC CONTROL*						
150	630**	GROUND MOUNTED SUPPORT, NO. 3 POST, TYPE "S", A.P.P.	410	LF				
151	630**	GROUND MOUNTED SUPPORT, NO. 4 POST, TYPE "S", A.P.P.	210	LF				
152	630**	GROUND MOUNTED SUPPORT, SQUARE ANCHOR POST, A.P.P.	220	LF				
153	630**	STREET NAME SIGN POST AND SUPPORT, A.P.P.	54	LF				
154	630**	SIGN, FLAT SHEET, TYPE H, VIP	440	SF				
155	630**	SIGN, STREET NAME, A.P.P.	4	EACH				
156	630**	SIGN POST REFLECTOR	16	EACH				
157	630	REMOVAL OF GROUND MOUNTED SIGN AND STORAGE, A.P.P.	12	EACH				
158	630	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	13	EACH				
159	644	EDGE LINE, 4"	2.59	MILE				
160	644	LANE LINE, 4"	2.30	MILE				
161	644	CENTER LINE, 4"	0.43	MILE				
162	644	CHANNELIZING LINE, 8"	2,453	LF				
163	644	CHANNELIZING LINE, 12"	220	LF				
164	644	STOP LINE, 24"	270	LF				
165	644	CROSSWALK LINE, 12"	1,110	LF				
166	644	CROSSWALK LINE, 12", A.P.P	72	LF				

**** DO NOT BID. ITEMS TO BE PERFORMED BY CITY OF DUBLIN FORCES**

BID SCHEDULE

BIDDER agrees to perform all work described in the CONTRACT DOCUMENTS for the following unit prices:

**Emerald Parkway - Phase 8
07-008-CIP**

CITY OF DUBLIN

REF NO.	(1) ITEM	(2) DESCRIPTION	(3) QUANT.	(4) UNIT	(5) LABOR (\$)	(6) MATERIAL (\$)	(7) (5)+(6) TOTAL (\$)	(8) (3) x (7) TOTAL EXTENDED INFORMAL PRICE (\$)	
167	644	TRANSVERSE LINE, 12"	53	LF					
168	644	LANE ARROW, 72"	32	EACH					
169	644	DASHED LINE, 4"	163	LF					
170	644	DASHED LINE, 8" (6' LONG, 6' GAP)	162	LF					
171	644	DASHED LINE, 12" (3' LONG, 3' GAP)	220	LF					
172	644	WORD ON PAVEMENT, 84"	8	EACH					
173	644	SHARED LANE MARKING	32	EACH					
174	644	REMOVAL OF PAVEMENT MARKING	6	EACH					
		TRAFFIC CONTROL* SUBTOTAL =							
		MAINTENANCE OF TRAFFIC*							
175	614	MAINTAINING TRAFFIC	1	LUMP					
176	614	DETOUR SIGNING	1	LUMP					
177	614	LAW ENFORCEMENT OFFICER WITH PATROL CAR	150	HOURS					
178	614	PORTABLE CHANGEABLE MESSAGE SIGN, A.P.P.	2	EACH					
179	614	WORK ZONE EDGE LINE	0.14	MILE					
180	614	WORK ZONE DOUBLE CENTER LINE, YELLOW	0.29	MILE					
181	615	PAVEMENT FOR MAINTAINING TRAFFIC	141	SY					
		MAINTENANCE OF TRAFFIC* SUBTOTAL =							
		TRAFFIC SIGNAL*							
182	625	CONDUIT, 2", 725.05	630	LF					
183	625	TRENCH, A.P.P.	630	LF					
184	625	PULL BOX, 725.06, 18"	6	EACH					
185	625	REMOVED PULL BOX	4	EACH					
186	625	PLASTIC CAUTION TAPE, A.P.P.	630	LF					
187	632	VEHICULAR SIGNAL HEAD (LED), 3 SECTION, 12" LENS, 1-WAY, A.P.P.	2	EACH					

BID SCHEDULE

BIDDER agrees to perform all work described in the CONTRACT DOCUMENTS for the following unit prices:

**Emerald Parkway - Phase 8
07-008-CIP**

CITY OF DUBLIN

REF NO.	(1) ITEM	(2) DESCRIPTION	(3) QUANT.	(4) UNIT	(5) LABOR (\$)	(6) MATERIAL (\$)	(7) (5)+(6) TOTAL (\$)	(8) (3) x (7) TOTAL EXTENDED INFORMAL PRICE (\$)
188	632	DETECTOR LOOP	10	EACH				
189	632	LOOP DETECTOR UNIT, 2 CHANNEL	2	EACH				
190	632	LOOP DETECTOR, LEAD-IN CABLE, 2 CONDUCTOR, NO. 14 AWG	1,637	LF				
191	632	REMOVAL OF MISCELLANEOUS TRAFFIC SIGNAL ITEM: SIGNAL HEAD	2	EACH				
192	632	SIGNALIZATION, MISC: LOOP LEAD-IN CABLE SPLICE	7	EACH				
193	632	SIGNALIZATION, MISC: CONNECT SIGNAL HEAD INDICATION	12	EACH				
							<i>TRAFFIC SIGNAL* SUBTOTAL =</i>	
		HARDSCAPE						
194	SPEC	DRY-LAID STONE WALL, A.P.P.	126	LF				
							<i>HARDSCAPE SUBTOTAL =</i>	

* DENOTES ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS , 2013 EDITION. ALL OTHER ITEMS REFERENCE CITY OF COLUMBUS CONSTRUCTION AND MATERIAL SPECIFICATIONS, 2012 EDITION.

GRAND TOTAL =

TOTAL BID FOR PROJECT: _____ SUBMITTED BY: _____ (COMPANY) _____

C. COMBINED BID/PERFORMANCE/PAYMENT BOND

**CITY OF DUBLIN
EMERALD PARKWAY - PHASE 8**

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned _____ (the "Principal") and _____ (the "Surety"), are hereby held and firmly bound unto the CITY OF DUBLIN, Ohio as obligee in the penal sum of the dollar amount of the bid submitted by the Principal to the CITY OF DUBLIN on _____, 2013 to undertake the project known as the **CITY OF DUBLIN, EMERALD PARKWAY - PHASE 8**.

The penal sum referred to herein shall be the dollar amount of the Principal's bid to CITY OF DUBLIN, incorporating any additive or deductive alternate proposals made by the Principal on the date referred to above to the CITY OF DUBLIN, which are accepted by the CITY OF DUBLIN. In no case shall the penal sum exceed the amount of _ dollars (\$_). (If the foregoing blank is not filled in, the penal sum will be the full amount of the Principal's bid, including alternates. Alternatively, if the blank is filled in, the amount stated must not be less than the full amount of the bid including alternates, in dollars and cents. A percentage is not acceptable.)

For the payment of the penal sum well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that whereas the above-named Principal has submitted a bid for the CITY OF DUBLIN, EMERALD PARKWAY - PHASE 8 PROJECT.

NOW, THEREFORE, if the CITY OF DUBLIN accepts the bid of the Principal and the Principal fails to enter into a proper contract in accordance with the bid, plans, details, specifications, and bills of material; and in the event the Principal pays to the CITY OF DUBLIN the difference not to exceed ten percent of the penalty hereof between the amount specified in the bid and such larger amount for which the CITY OF DUBLIN may in good faith contract with the next lowest bidder to perform the work covered by the bid, or in the event the CITY OF DUBLIN does not award the contract to the next lowest bidder and resubmits the project for bidding, the Principal will pay the CITY OF DUBLIN the difference not to exceed ten percent of the penalty hereof between the amount specified in the bid, or the costs, in connection with the resubmission, of printing new contract documents, required advertising and printing and mailing notices to prospective bidders, whichever is less, then this obligation shall be null and void, otherwise to remain in full force and effect; if the CITY OF DUBLIN accepts the bid of the Principal and the Principal within ten days after the awarding of the contract, enters into a proper contract in accordance with the bid, plans, details specifications, and bills of material, which said contract is made a part of this bond the same as though set forth herein.

NOW ALSO, if the Principal shall well and faithfully do and perform the things agreed by Principal to be done and performed according to the terms of said contract; and shall pay all lawful claims of subcontractors, material men, and laborers, for labor performed and materials furnished in the carrying forward, performing, or completing of said contract; we agreeing and assenting that this undertaking shall be for the benefit of any material man or laborer having a just claim, as well as for the CITY OF DUBLIN herein; then this obligation shall be void; otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

The Surety hereby stipulates and agrees that no modifications, omissions, or additions, in or to the terms of said contract or in or to the plans or specifications therefore shall in any wise affect the obligations of the Surety on the Surety's bond, and the Surety does hereby waive notice of any such modifications, omissions or additions to the terms of the contract or to the plans or specifications.

Signed this _____ day of _____, 2013.

PRINCIPAL:

By: _____

(Signature)

Print Name: _____

Title: _____

Address:

Telephone: () _____

SURETY:

By: _____

(Signature)

Print Name: _____

Title: _____

Address:

Telephone: () _____

SURETY AGENT:

By: _____

(Signature)

Print Name: _____

Title: _____

Address:

Telephone: () _____

D. ALTERNATE BID SECURITY FORM

Bidder Name: _____

Project Name: **EMERALD PARKWAY - PHASE 8**

The undersigned Bidder hereby submits with its bid the following bid security equaling 10% of the total amount of the bid as required by Ohio Revised Code Section 153.54:

A Certified Check

A Cashier's Check

A Letter of Credit pursuant to Chapter 1305 of the Ohio Revised Code

A bid guaranty filed under this form shall be conditioned to provide that if the bid is accepted, the bidder, after the awarding or the recommendation for the award of the contract, whichever the CITY OF DUBLIN designates, will enter into a proper contract in accordance with the bid, plans, details, specifications, and bills of material. All bid guaranties filed hereunder shall be payable to the CITY OF DUBLIN, be for the benefit of the CITY OF DUBLIN, and be deposited with, and held by, the CITY OF DUBLIN.

Bidder Signature: _____

Print Name: _____

E. PERFORMANCE AND PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned _____ as principal and _____ as sureties, are hereby held and firmly bound unto CITY OF DUBLIN ("Obligee") in the penal sum of \$ _____, for the payment of which well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

Signed this _____ day of _____, _____.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that whereas the above named principal did on _____ enter into a contract with CITY OF DUBLIN, which said contract is made a part of this bond the same as though set forth herein;

Now, if the said principal shall well and faithfully do and perform the things agreed by it to be done and performed according to the terms of said contract; and shall pay all lawful claims of subcontractors, material suppliers, and laborers, for labor performed and materials furnished in the carrying forward, performing, or completing of said contract; we agreeing and assenting that this undertaking shall be for the benefit of any material supplier or laborer having a just claim, as well as for the Obligee herein; then this obligation shall be void; otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

The said surety hereby stipulates and agrees that no modifications, omissions, or additions, in or to the terms of the said contract or in or to the plans or specifications therefor shall in any wise affect the obligations of said surety on its bond.

Signed this _____ day of _____, 2013.

PRINCIPAL:

By: _____

(Signature)

Print Name: _____

Title: _____

Address:

Telephone: () _____

SURETY:

By: _____

(Signature)

Print Name: _____

Title: _____

Address:

Telephone: () _____

SURETY AGENT:

By: _____

(Signature)

Print Name: _____

Title: _____

Address:

Telephone: () _____

F. AFFIDAVIT OF AUTHORITY

**CITY OF DUBLIN
EMERALD PARKWAY - PHASE 8**

(To be completed and executed if the Contractor is anything other than a sole proprietorship.)

State of _____ (State Where Completing this Form)

County of _____ (County Where Completing this Form) SS:

_____ (Your Name), being duly sworn, deposes and says that he or she is the _____ (Position) of _____ (Business Name), a _____ (Type of Entity) organized and existing under and by virtue of the laws of the State of _____ (State), and having its principal office at: _____ (Address), _____ (City), _____ (County), _____ (State).

Affiant further says that he is familiar with the records, minute books and by-laws of _____ (Business Name).

Affiant further says that _____ (Name of Person Signing Contract) _____ (Title of Person Signing Contract) of _____ (Business Name) is duly authorized to sign the Contract for the CITY OF DUBLIN EMERALD PARKWAY - PHASE 8 Project on behalf of _____ (Business Name) by virtue _____ of _____.

(Describe how the person signing the Contract has Authority to sign for example: "a provision of the by-laws" or "a resolution of the Board of Directors"—if by resolution, give date of adoption.)

_____, _____
(Your Signature) (Your Position)

The foregoing instrument was acknowledged before me this _____ (date) by _____ (name of person acknowledged). Signature and Seal of person taking acknowledgement:

G. COMBINED DELINQUENT PERSONAL PROPERTY TAX & NONCOLLUSION AFFIDAVIT

State of _____ (State Where Completing this Form)

County of _____ (County Where Completing this Form) ss:

_____ (Your Name), Affiant, being first duly sworn, deposes and says:

1. I am the _____ (Your Title) of _____ (Business Name), the Bidder that has submitted the attached Bid;

2. I am fully informed respecting the preparation and contents of the attached Bid and all pertinent circumstances respecting such Bid, and that such Bid is genuine and is not a collusive or sham Bid;

4. Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees, or parties in interest, including this affiant, has in any way colluded, conspired, connived, or agreed directly or indirectly with any other Bidder, firm, or person to submit a collusive or sham Bid in connection with the contract for which the attached Bid has been submitted, or to refrain from Bidding in connection with such contract, or has in any manner directly or indirectly sought by agreement, collusion, communication, or conference with any other Bidder, firm, or person to fix the price or prices in the attached Bid or of any other Bidder, or to fix any overhead, profit, or cost element of Bid price or the Bid price of any other Bidder, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against the **CITY OF DUBLIN, OHIO**, or any person interested in the proposed contract; and

5. The price or prices quoted in the attached Bid are fair, proper, and not tainted by any collusion, conspiracy, connivance, or unlawful agreement on the part of the Bidder or any of its agent's representatives, owners, employees, or parties in interest, including this affiant.

6. Effective this _____ day of _____, **2013**, the Bidder:

is charged with delinquent personal property taxes on the general list of personal property as set forth below:

County	Amount (include total amount, with penalties and interest thereon)
_____ County	\$ _____

is not charged with delinquent personal property taxes on the general list of personal property in any Ohio county.

Choose One

Signed: _____

Title: _____

The foregoing instrument was acknowledged before me this _____ (date)

by _____ (name of person acknowledged).

Signature and Seal of person taking acknowledgement:

H. W-9 FORM

Form W-9 (Rev. December 2011) Department of the Treasury Internal Revenue Service	Request for Taxpayer Identification Number and Certification	Give Form to the requester. Do not send to the IRS.				
Print or type See Specific Instructions on page 2.	Name (as shown on your income tax return)					
	Business name/disregarded entity name, if different from above					
	Check appropriate box for federal tax classification: <input type="checkbox"/> Individual/sole proprietor <input type="checkbox"/> C Corporation <input type="checkbox"/> S Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ _____ <input type="checkbox"/> Exempt payee					
	<input type="checkbox"/> Other (see instructions) ▶ _____					
	Address (number, street, and apt. or suite no.)	Requester's name and address (optional)				
City, state, and ZIP code						
List account number(s) here (optional)						
Part I Taxpayer Identification Number (TIN) Enter your TIN in the appropriate box. The TIN provided must match the name given on the "Name" line to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I Instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see <i>How to get a TIN</i> on page 3. Note. If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.						
		Social security number <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:25%; height: 20px;"> </td> </tr> </table>				
		Employer identification number <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:25%; height: 20px;"> </td> </tr> </table>				
Part II Certification Under penalties of perjury, I certify that:						
1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and 2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and 3. I am a U.S. citizen or other U.S. person (defined below).						
Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 4.						
Sign Here	Signature of U.S. person ▶ _____	Date ▶ _____				
General Instructions Section references are to the Internal Revenue Code unless otherwise noted.						
Purpose of Form A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA. Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:						
1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued). 2. Certify that you are not subject to backup withholding, or 3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income.						
Note. If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9. Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are: • An individual who is a U.S. citizen or U.S. resident alien, • A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States, • An estate (other than a foreign estate), or • A domestic trust (as defined in Regulations section 301.7701-7). Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax on any foreign partners' share of income from such business. Further, in certain cases where a Form W-9 has not been received, a partnership is required to presume that a partner is a foreign person, and pay the withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid withholding on your share of partnership income.						

I. LIST OF SUBCONTRACTORS

CITY OF DUBLIN

EMERALD PARKWAY - PHASE 8

NOTE: The bidder must perform at least 50% of the total contract cost with its own forces.

1. Name of Subcontractor (Include names of any parent company) : _____

Federal Identification Number: _____

Address: _____

Type of Work:

Subcontractor to Provide: _____

Approximate Percentage of the Contract Cost to be Performed by Subcontractor: _____

Experience Record: _____

2. Name of Subcontractor (Include names of any parent company) : _____

Federal Identification Number: _____

Address: _____

Type of Work:

Subcontractor to Provide: _____

Approximate Percentage of the Contract Cost to be Performed by Subcontractor: _____

Experience Record: _____

3. Name of Subcontractor (Include names of any parent company) : _____

Federal Identification Number: _____

Address: _____

Type of Work:

Subcontractor to Provide: _____

Approximate Percentage of the Contract Cost to be Performed by Subcontractor: _____

Experience Record: _____

4. Name of Subcontractor (Include names of any parent company) : _____

Federal Identification Number: _____

Address: _____

Type of Work:

Subcontractor to Provide: _____

Approximate Percentage of the Contract Cost to be Performed by Subcontractor: _____

Experience Record: _____

5. Name of Subcontractor (Include names of any parent company) : _____

Federal Identification Number: _____

Address: _____

Type of Work:

Subcontractor to Provide: _____

Approximate Percentage of the Contract Cost to be Performed by Subcontractor: _____

Experience Record: _____

Add additional sheets if necessary.

J. CONTRACTOR QUALIFICATION STATEMENT

Contractor: _____

Date: _____

Project: **EMERALD PARKWAY - PHASE 8**

The foregoing Contractor submits this Statement of Qualifications to the CITY OF DUBLIN, OHIO as part of its bid for the above named Project and represents that the information contained herein is complete and accurate to the best of the Contractor’s knowledge. The CITY OF DUBLIN reserves the right to reject any, part of any, or all bids and to waive any informalities and irregularities. The Contractor expressly acknowledges this right of the CITY OF DUBLIN to reject any or all bids or to reject any incomplete or irregular bid. Contractor must furnish all information requested on this Statement of Qualifications. Failure to do so may result in disqualification of the bid. The CITY OF DUBLIN may consider the information submitted on this form in determining the lowest and best Contractor for the Project giving such weight to each item as the CITY OF DUBLIN deems appropriate. The CITY OF DUBLIN may conduct such investigations as are deemed necessary to establish the qualifications and financial ability of the Contractor and its subcontractors and suppliers.

The Contractor authorizes the CITY OF DUBLIN and its representatives to contact the owners, design professionals, and others having knowledge (collectively “Contacts”) on projects on which the Contractor has worked—whether listed on this form or not—and authorizes and requests such Contacts to provide the CITY OF DUBLIN with a candid evaluation of the Contractor’s performance. By submitting its bid, the Contractor agrees that if it or any person, directly or indirectly, on its behalf or for its benefit brings an action against any of such Contacts or the employees of any of them as a result of or related to such candid evaluation, the Contractor will indemnify and hold harmless such Contacts and the employees of any of them from any claims whether or not proven that are part of or are related to such action and from all legal fees and expenses incurred by any of them arising out of or related to such legal action. This obligation is expressly intended for the benefit of such Contacts and the employees of each of them. By submitting this form, Contractor agrees that the CITY OF DUBLIN’s determination of which Contractor is the lowest and best Contractor shall be final and conclusive, and that if the Contractor or any person on its behalf challenges such determination in any legal proceeding, the Contractor will indemnify and hold the CITY OF DUBLIN and its employees and agents harmless from any claims included or related to such legal proceeding, whether or not proven, and from legal fees and expenses incurred by the City, its employees, or agents that arise out of or are related to such challenge.

NAME OF PROJECT: **EMERALD PARKWAY - PHASE 8**

1. ORGANIZATION

- 1.1 How many years has your organization been in business as a Contractor?
- 1.2 How many years has your organization been in business under its present business name?
 - 1.2.1 Under what other or former names has your organization operated?
- 1.3 If your organization is a corporation, answer the following:
 - 1.3.1 Date of incorporation:
 - 1.3.2 State of incorporation:
 - 1.3.3 President's name:
 - 1.3.4 Vice President's name(s):
 - 1.3.5 Secretary's name:
 - 1.3.6 Treasurer's name:
- 1.4 If your organization is a partnership, answer the following:
 - 1.4.1 Date of organization:
 - 1.4.2 Type of partnership (if applicable):
 - 1.4.3 Name(s) of general partner(s):
- 1.5 If your organization is individually owned, answer the following:
 - 1.5.1 Date of organization:
 - 1.5.2 Name of owner:

1.6 If the form of your organization is other than those listed above, describe it and name the principals:

2. LICENSING

2.1 List jurisdictions and trade categories in which your organization is legally qualified to do business, and indicate registration or license numbers, if applicable.

2.2 List jurisdictions in which your organization's partnership or trade name is filed.

3. EXPERIENCE

3.1 List the categories of work that your organization normally performs with its own forces.

3.2 Claims and Lawsuits (If the answer to any of the questions below is yes, please attach details.)

3.2.1 Has your organization ever failed to complete any work?

3.2.2 Within the last five (5) years has your organization or any of its officers initiated any Claims, had any Claims initiated against it or them, or been involved in or is currently involved in any mediation or arbitration proceedings or lawsuits suits related to any construction project, or has any judgments or awards outstanding against it or them? If the answer is yes, please attach the details for each Claim, including the names and telephone numbers of the persons who are parties, the amount of the Claim, the type of Claim and basis for the Claim, and the outcome.

Note: As used in this document "Claim" means a Claim initiated under the Contract Documents for a project.

3.3 Within the last five years, has any officer or principal of your organization ever been an officer or principal of another organization when it failed to complete a construction contract? If the answer is yes, please attach details for each instance, including the names and telephone numbers of the persons who are parties to the contract, and the reason(s) the contract was not completed.

3.4 On a separate sheet, list construction projects your organization has in progress with an original Contract Sum of more than \$ 1,210,000.00, giving the name of project, owner and its telephone number, design professional and its telephone number, contract amount, percent complete and scheduled completion date.

3.4.1 State total amount of work in progress and under contract:

3.5.1 Provide the following information for each project your organization has had during the last five (5) years, which your organization believes is of comparable or greater size and complexity than the Owner's project. If there are more than five (5) of these projects, only provide information on the most recent five (5) projects, including current projects.

Project And Work	Contract Sum	Owner's Representative & Telephone Number	Engineer's Or Architect's Representative Name & Telephone Number

3.5.2 State average annual amount of construction work your organization has performed during the last five years.

3.5.3 If any of the following members of your organization's management--president, chairman of the board, or any director--operates or has operated another construction company during the last five (5) years, identify the member of management and the name of the construction company.

3.5.4 If your organization is operating under a trade name registration with the Secretary of State for the State of Ohio, identify the entity for which the trade name is registered. If none, state "none."

3.5.5. If your organization is a division or wholly-owned subsidiary of another entity or has another relationship with another entity, identify the entity of which it is a division or wholly-owned subsidiary or with which it has another relationship and also identify the nature of the relationship. If none, state "not applicable."

3.6 On a separate sheet, list the construction education, training and construction experience for each person who will fill a management role on the Project, including without limitation the Project Executive, Project Engineer, Project Manager, and Project Superintendent. For each person listed, include with the

other information the last three projects on which the person worked and the name and telephone number of the Design Professional and the Owner.

4. REFERENCES

4.1 Trade References:

4.2 Bank References:

4.3 Surety:

4.3.1 Name of bonding company:

4.3.2 Name and address of agent:

5. FINANCING

5.1 Financial Statement

5.1.1 Attach a financial statement, preferably audited, including your organization's latest balance sheet and income statement showing the following items:

Current Assets (e.g., cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, materials inventory and prepaid expenses);

Net Fixed Assets;

Other Assets;

Current Liabilities (e.g., accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries and accrued payroll taxes); and

Other Liabilities (e.g., capital, capital stock, authorized and outstanding shares par values, earned surplus and retained earnings).

5.1.2 Name and address of firm preparing attached financial statement, and date thereof.

5.1.3 Is the attached financial statement for the identical organization named on page one?

5.1.4 If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (e.g., parent-subsidiary).

5.2 Will the organization whose financial statement is attached act as guarantor of the contract for construction?

Certification. The undersigned certifies for the reliance of the Owner that after diligent investigation, to the best of the undersigned's belief, the information provided with this Contractor's Qualification Statement is true, accurate and not misleading.

SIGNATURE

Dated at this ____ day of _____, 2013.

Name of Organization: _____

By: _____ (Print Name)

Signature: _____

Title: _____

_____, being duly sworn, deposes and says that the information provided herein is true and sufficiently complete so as not to be misleading.

Subscribed and sworn before me this ____ day of _____, 2013.

Notary Public

My Commission Expires: _____

SEAL

CONTRACTOR'S ORGANIZATION

General Information

Address: _____

Telephone and Facsimile: _____

E-mail address: _____

Web site: _____

If address given above is a branch office address, provide principal home office address:

Type of Organization

The Contractor's Organization is a:

Corporation

Date and State of Incorporation: _____

Executive Officers: (Names and Addresses) _____

Partnership

Date and State of Organization: _____

Type of Partnership: General Limited Limited Liability Other:

Current General Partners: (Names and Addresses) _____

Joint Venture

Date and State of Organization: _____

Joint Venturers: (For each indicate the name, address and form and state of organization, as well as the managing or controlling Joint Venturer if applicable.) _____

Limited Liability Company

Date and State of Organization: _____

Members: (Names and Addresses) _____

Sole Proprietorship

Date and State of Organization: _____

City or Citys: (Names and Addresses) _____

Other

Type of Organization: _____

State of Organization: _____

Citys and/or Principals: (Names and Addresses) _____

In addition to the above categories of business entities, indicate whether Contractor's organization is certified as a:

Disadvantaged Business Enterprise Certified by:

Minority Business Enterprise Certified by:

Women's Business Enterprise Certified by:

Historically Underutilized Business Zone Small Business Concern Certified by: _____

LICENSING AND REGISTRATION

Jurisdictions in which Contractor is legally qualified to practice: (Indicate license or registration numbers for each jurisdiction, if applicable, and type of license or registration. Attach separate sheet as necessary.)

In the past five years, has Contractor had any business or professional license suspended or revoked? Yes No

If yes, describe circumstances on separate attachment, including jurisdiction and bases for suspension or revocation.

CONTRACTOR'S PERSONNEL AND APPROACH

Key Construction Personnel. Create and attach Schedule A, listing the Contractor's: 1) Key Construction Personnel who will work on the Project; 2) their construction experience; and, 3) the percentage of time that each is anticipated to devote to the Project.

List types of work generally performed by Contractor's own work force:

Subcontractors

Indicate criteria used in the selection of subcontractors (Indicate if Not Applicable).

- Price
- Financial strength
- Bonding capacity
- Previous experience with Contractor
- Previous experience in industry
- Subcontractor's reputation in industry
- Availability of sufficient personnel
- Safety record
- Other: _____

State Contractor's policy on the bonding of its subcontractors: _____

Describe Contractor's proposed technical and management approach to the Project, including approaches to quality, time and cost control: (Attach additional sheets as necessary.)

CONTRACTOR'S RELEVANT EXPERIENCE

Past Projects List. In the chart below, list at least five construction projects Contractor has worked on in the past five (5) years with project delivery systems similar in size and scope to the one to be employed for this Project. (For Joint Ventures, list each joint venturer's projects separately).

City Name	Project Type	Contract Amount	Completion Date	Contact Name and Number

Current Projects List. In the chart below, list all current projects of the Contractor, including projects not yet underway, approximate dollar value of each and the percentage of completion of each project. (For Joint Ventures, list each joint venturer's projects separately).

City Name	Project Type	Contract Amount	Percentage Complete	Contact Name and Number

Annual Construction Volume. Indicate the annual volume of work completed for the past three years:

Year _____

Year _____

Year _____

In the past five years, has Contractor defaulted, been terminated for cause or failed to complete a construction contract awarded to it? Yes No

If yes, describe circumstances on separate attachment, including dates and owner, and if applicable, Contractor's surety.

In the past five years, has any officer, partner, joint venturer or proprietor of the Contractor ever failed to complete a construction contract awarded to that person or entity in their name or on behalf of another organization? Yes No

If yes, describe circumstances on separate attachment, including dates and City, and if applicable, surety.

Describe all litigation arising from Contractor's active projects or projects worked on within the last five years. (Attach additional sheets as necessary.)

CONTRACTOR'S SAFETY PROGRAM

If Contractor has a written safety program, attach a copy.

Does the Contractor's safety program include instructions on the following:

Safety work practices Yes No

Safety supervision Yes No

Toolbox safety meetings Yes No

Emergency procedures Yes No

First aid procedures Yes No

Accident investigation Yes No

Fire protection Yes No

New workers' orientation Yes No

Do you have a safety officer/department in your company? Yes No

If yes,

Name: _____

Title: _____

Phone: _____

Do you conduct project safety inspections? Yes No

If yes, how often? _____

Who conducts this inspection?

Name: _____

Title: _____

Do you hold project safety meetings for field supervisors? Yes No

If yes, how often? Weekly Bi-weekly Monthly Less often as needed

Do you have in place an instruction program on safety for newly hired or promoted supervisors? Yes No

If yes, please attach a copy of program format.

If craft "toolbox" safety meetings are held, what is their frequency? Weekly Bi-weekly Monthly Less often as needed

Do you have a drug and alcohol testing policy? Yes No

If Yes, attach a copy of the policy.

Provide Contractor's OSHA No. 300 Log and Summary of Occupational Injuries and Illnesses for the past five years.

List all OSHA Citations and Notifications of Penalty, monetary or other, received within the last five years: (Indicate final disposition as applicable. Attach additional sheets as necessary.)

List all safety citations of violations under state law received within the last five years: (Indicate final disposition as applicable. Attach additional sheets as necessary.)

SURETY AND INSURANCE

Surety Company: (Name and Address)

Agent: (Name, Address and Telephone Number)

Total bonding capacity: \$ _____

Limit per project: \$ _____

Available bonding capacity as of this date: \$ _____

CONTRACTOR FINANCIAL INFORMATION

List principal banks used, the approximate value of outstanding loans and general repayment history, as well as the Name, Address and Telephone Number of a contact person:

Attach audited financial statements for the past three (3) years, including latest balance sheet.

State whether Contractor, or any of the individuals identified in Article 1, has/have been the subject of any bankruptcy proceeding within the last five (5) years.

Yes No

If yes, describe circumstances on separate attachment.

STATEMENT OF POTENTIAL CONFLICTS OF INTEREST

Provide information about any business associations, financial interests or other circumstances that may create a conflict of interest with the City or any other Party known to be involved in the Project.

OTHER INFORMATION

Within the past five years, has Contractor, or any of the individuals identified in Article 1 and/or Schedule A been the subject of any criminal indictment or judgment of conviction for any business-related conduct constituting a crime under state or federal law? __ Yes __ No

If yes, describe circumstances on separate attachment.

Within the past five years, has Contractor or any of the individuals identified in Article 1 and/or Schedule A been the subject of any federal or state suspension or disbarment? __ Yes __ No

If yes, describe circumstances on separate attachment.

Within the past five years, has Contractor, or any of the individuals identified in Article 1 and/or Schedule A been the subject of any formal proceeding or consent order with a state or federal environmental agency involving a violation of state or federal environmental laws? __ Yes __ No

If yes, describe circumstances. (Attach additional sheets as necessary.)

REFERENCES

Provide one additional reference for each of the following categories.

1. City

Name: _____

Address: _____

Telephone No.: _____

Contact Person: _____

2. Architect/Engineer

Name: _____

Address: _____

Telephone No.: _____

Contact Person: _____

3. Subcontractor

Name: _____

Address: _____

Telephone No.: _____

Contact Person: _____

The Undersigned, on behalf of the Contractor, certifies under that the information provided here, or attached to this form, is true and sufficiently complete to the best of the Contractor’s knowledge.

CONTRACTOR

Signature _____

Printed Name: _____

Title: _____

Date: _____

III. ADDITIONAL CONTRACT DOCUMENTS

A. CITY OF DUBLIN/CONTRACTOR AGREEMENT

STANDARD AGREEMENT

CITY OF DUBLIN, OHIO

I. INTRODUCTION

This Agreement is entered into on _____, by and between the CITY OF DUBLIN, OHIO (“Owner”), located at 5200 Emerald Parkway, Dublin, Ohio 43017, and _____ (“Contractor”), located at _____ for the CITY OF DUBLIN EMERALD PARKWAY - PHASE 8 (“Project”).

THIS DOCUMENT HAS IMPORTANT LEGAL CONSEQUENCES. CONSULTATION WITH AN ATTORNEY IS ENCOURAGED WITH RESPECT TO ITS EXECUTION, COMPLETION AND MODIFICATION.

The Owner, a political subdivision of the State of Ohio, and the Contractor have entered into this Owner-Contractor Agreement (“Agreement”) as of the date set forth above. The Owner and the Contractor agree as follows:

1 WORK.

1.1 The Contractor shall furnish all the labor, services, materials, plant, equipment, tools, scaffolds, appliances, transportation, and all other things (collectively called the “Work”) necessary for the timely and proper completion of the Work described in the Contract Documents for the Project. The Contractor shall provide the Performance and Payment Bonds on the forms and in the manner described in the Contract Documents.

1.2 CLEANUP. Contractor shall cleanup, repair, restore and otherwise return any site or location provided by Owner to the condition in which it was delivered to Contractor. Contractor shall repair, at its sole expense, any property it damages, whether part of the work or not, to a condition acceptable to Owner.

1.3 COMPLETION. The Project shall be finally completed by: November 20, 2014. The Contractor shall at all times furnish sufficient skilled workers, materials, and equipment to perform the Work in strict conformance with the Contract Documents and to the entire satisfaction of the Owner, so as to complete the Project by the Date for Final Completion. All materials and equipment provided shall be new, free from all defects, fit for the purpose for which intended, and merchantable.

1.4 SUPERVISION. The Contractor shall assign a competent Project Supervisor who shall be present on site. At the Owner’s request and without additional charge to Owner, the Contractor shall replace the Project Supervisor. The Owner’s Representative shall not be responsible for the acts or omissions of the Project Supervisor or his assistants. At a minimum, the Project Supervisor shall be present on site whenever any Contractor or Subcontractor personnel are present on site.

1.5 TAXES AND FEES. Contractor is subject to and responsible for paying fees to obtain all applicable licenses, permits, and other permissions necessary to perform its obligations under

this Contract. Contractor is responsible for paying federal, state, and local taxes. Contractor agrees to withhold all income taxes due or payable under the provisions of Income Tax Ordinances of the Owner, for qualifying wages, salaries, and commissions paid to its employees and further agrees that any of its sub-contractors shall be required to agree to withhold any such income taxes due for services performed under this Contract.

2 CONTRACT DOCUMENTS.

2.1 The Contract Documents consist exclusively of:

- This Agreement
- Invitation to Bid
- Instructions to Bidders
- Prevailing Wage Rates (if Applicable)
- Proposal
- Bid Schedule
- Performance and Payment Bonds
- Delinquent Personal Property Tax & Noncollusion Affidavit
- Affidavit of Authority (If applicable)
- List of Subcontractors
- Contractor Qualification Statement
- CITY OF DUBLIN General Conditions Division 100
- Supplemental General Conditions
- The current version of the CMS, excluding 's Division 100
- Specifications
- Supplemental Specifications
- Notice of Award to Bidder
- Notice to Proceed
- Final Affidavit of Compliance with Prevailing Wages
- Plans and Drawings

If there is a conflict between any of the Contract Documents, the document listed first above shall control.

3 OWNER'S REPRESENTATIVE.

3.1 The City Engineer and/or his designee is the Owner's Representative with respect to all matters involving the Owner.

3.2 Except as specifically stated to the contrary elsewhere in this Agreement, the Contractor shall direct all communications to the Owner through the Owner's Representative, although the City Manager and Fiscal Officer of the Owner are also authorized to send written communications to the Contractor.

3.3 The Owner's Representative will monitor the progress of the Contractor's Work and will conduct regular inspections of the progress of the Work as provided in the Contract Documents. Such inspections shall not relieve the Contractor of any of its obligations under the Contract Documents.

3.4 The Contractor shall at all times provide the Owner's Representative access to the Work.

4 TIME FOR COMPLETION AND PROJECT COORDINATION.

4.1 Project Time Schedule. The Owner anticipates that Work on the Project will begin upon its issuance of a Notice to Proceed and be completed by **November 20, 2014**, unless the Owner and Contractor agree to different commencement and completion dates.

4.2 Contractor is responsible for scheduling its subcontractors and for any delay resulting from their performance.

4.3 TIME IS OF THE ESSENCE. THE DATES IN THE PROJECT TIME SCHEDULE ARE OF THE ESSENCE OF THIS AGREEMENT. THE CONTRACTOR SHALL PROSECUTE ITS WORK IN ACCORDANCE WITH THE PROJECT TIME SCHEDULE, INCLUDING ANY AMENDMENTS THERETO.

5 DELAYS AND ACCELERATIONS.

5.1 NOTICE OF DELAYS. The Contractor shall give the Owner written notice of any delay affecting its Work within 24 hours of the commencement of the delay. The notice shall state in all capital letters at least 12 point font "NOTICE OF DELAY." The failure to give the required notice or include the required "NOTICE OF DELAY" language shall constitute an irrevocable waiver of the Contractor's right to seek an extension of time and/or additional compensation/damages for the delay. The Owner, in its sole and reasonable discretion, shall determine whether a delay shall entitle the Contractor to an extension of time, additional payment, or both. Any of the foregoing shall only be granted pursuant to the procedures for Change Orders set forth in this Agreement.

5.2 ACCELERATION OF THE WORK. If the Contractor fails to perform as required by the Contract schedule, the Owner may require the Contractor to accelerate its Work by adding workers or working additional shifts, extended shifts or overtime, so that the Work is in final form before the Date for Final Completion. If the Owner requires the Contractor to accelerate its Work, the Contractor shall take the required action within two days of the Notice. If the acceleration is not due to fault of the Contractor, Owner shall issue a Change Order increasing the Contract Sum to pay the Contractor for the Contractor's additional costs of accelerating its Work so that the Work is in final form before the Date for Final Completion. If there is a dispute as to whether the Contractor is entitled to a Change Order for accelerating its Work, the Contractor shall proceed to accelerate its Work without waiting for a Change Order or payment of any additional compensation, but may reserve its right to make a claim against the Owner for its additional costs incurred in accelerating its Work. The Contractor's additional costs for accelerating its Work shall be determined in accordance with Paragraph 5.2.2.

5.2.1 OWNER'S OBLIGATION TO PAY. The Owner shall pay the Contractor, as provided in this Paragraph, for the Contractor accelerating its Work so that its Work is in final form before the Date for Final Completion so long as the acceleration is not required as a result of the Contractor's failure to stay on schedule. The Owner shall not be required to compensate the Contractor for accelerating its Work based on the Contractor's own decision so that the Work is in final form by the Date for Final Completion.

5.2.2 COMPENSATION FOR ACCELERATION OF THE WORK. To the extent that the Owner requires the Contractor to accelerate its Work and is obligated to pay under Section 5.2.1, the Owner shall pay the Contractor for the Contractor's additional costs of accelerating its Work, as determined in accordance with this Paragraph. The additional costs of accelerating the Work shall be (a) any premium for overtime, additional shift work, or extended shift work, (b) the cost of any additional supervision required by the acceleration, (c) out of pocket cost of any additional equipment required for the acceleration, and (d) overhead, including home office overhead, and profit equal to ten percent (10%) of the total amount of items (a) and (b) for which additional compensation is permitted under this Paragraph. The foregoing shall be the only additional compensation and/or damages the Contractor shall be entitled to receive for accelerating its Work so that it is complete before the Date for Final Completion. As a condition precedent to its recovery of additional compensation, the Contractor shall provide the Owner with full information about the costs of accelerating its Work in the form and format requested by the Owner.

6 CORRECTIVE ACTION.

6.1 If the Owner determines that the Contractor is not cooperating or coordinating its work properly with its subcontractors, not supplying sufficient skilled workers, not cleaning up the Project, not furnishing the necessary materials, equipment, or any temporary services or facilities to perform the Work in strict conformance with the Contract Documents, or the Contractor is not on schedule, or is not otherwise performing its obligations under the Contract Documents, THE CONTRACTOR SHALL IMMEDIATELY, AND IN NOT LESS THAN FORTY-EIGHT (48) HOURS AFTER NOTICE OF SUCH DETERMINATION, OR SUCH LESSER TIME AS MAY BE PROVIDED IN THE CONTRACT DOCUMENTS, (1) COMMENCE SUCH ACTION AS IS NECESSARY TO CORRECT THE DEFICIENCIES NOTED BY THE OWNER, (2) PROCEED TO USE ITS BEST EFFORTS TO CORRECT SUCH DEFICIENCIES WITHIN THIRTY (30) DAYS OF SUCH NOTICE OR BY THE DEADLINE FOR COMPLETION OF THE PROJECT SET FORTH IN THIS AGREEMENT WHICHEVER IS SOONER AND/OR, (3) IF THE OWNER INSTRUCTS THE CONTRACTOR TO TAKE SPECIFIED CORRECTIVE ACTION, SHALL IMMEDIATELY TAKE SUCH CORRECTIVE ACTION, including but not limited to increasing the number of skilled workers, providing temporary services or facilities, and cleaning up the Project. Such corrective action shall be taken and continued uninterruptedly without waiting to initiate any dispute under Paragraph 11 of this Agreement or the resolution of any dispute initiated under such paragraph.

7 CONTRACT SUM. The lump sum Contract Sum to be paid by the Owner to the Contractor, as provided herein, for the satisfactory performance and completion of the Project and all of the duties, obligations and responsibilities of the Contractor under this Agreement and the other Contract Documents will be \$. The Contract Sum includes all federal, state, county, municipal, and other taxes imposed by law, including but not limited to any sales, use, and personal property taxes payable by or levied against the Contractor because of the Work or the materials incorporated into the Work. The Contractor shall pay any such taxes.

8 LIQUIDATED DAMAGES.

8.1 The Contractor shall have its work substantially completed by the date stated in Paragraph 1.3; the timeline may be varied following award of the contract based upon the Contractor's ability to perform the work on a different timeline acceptable to the Owner. By entering into this Agreement, the Contractor agrees that the period for performing the Work is reasonable and that the Contractor's Work can be substantially complete by the date stated in this Agreement.

8.2 If the Contractor does not have its Work on the Project substantially complete by the date stated in Paragraph 1.3 or as otherwise agreed by the parties, the Contractor will pay the Owner (and the Owner may set off from sums coming due the Contractor) liquidated damages in accordance with the Contract Documents.

8.3 The Contractor acknowledges by signing this Agreement with the Owner that the amount of liquidated damages represents a reasonable estimate of the actual damages the Owner would incur if the work is not substantially complete by the foregoing date and that the damages that may result from the failure to substantially complete the work by the foregoing date are uncertain and difficult to ascertain. These liquidated damages are damages for loss of use of the Project, and the Contractor in addition to the liquidated damages will be obligated to indemnify and hold the Owner harmless from any claims, and if the Work on the Project is accelerated because of delay, for all costs related to the acceleration of the Work, as provided in the Contract Documents. In addition to such Liquidated Damages, the Contractor shall indemnify, defend and hold the Owner and its employees and agents harmless from any and all claims, whether or not such claims are proven, and from all costs and expenses incurred, as a result of or related to such claims, including but not limited to attorneys' and consultants' fees and expenses, provided that such claims arise out of or are related to the Contractor's failure to Substantially Complete its Work by its Date for Substantial Completion. These Liquidated Damages are in addition to any other remedies available to the Owner under the Contract Documents.

9 LIMITATION AND LIABILITY.

9.1 The Owner's total liability under this Agreement shall be limited to the amount set forth in the Finance Director's certificate accompanying this Agreement. Under no circumstances shall the elected officials, officers, employees, council members, or agents of the Owner be personally liable for any obligations or claims arising out of or related to this Agreement.

10 PAYMENT

10.1 APPLICATIONS FOR PAYMENT. Payment applications shall be submitted on a monthly basis and shall reflect the amount of work completed as of the date the application for payment is submitted. On or before Completion, the Contractor shall submit to the Owner, an itemized payment application for such period in the following format and with one copy of the following documentation: 1) Invoice for work performed and materials and equipment provided for the previous pay period; 2) Current list of the Contractor's Subcontractors and suppliers showing their respective contract sums, amount paid, and amount due; 3) Contractor's Affidavit of Release of Liens with and lien releases in the format provided by the Owner for all the Contractor's

Subcontractors and suppliers current through the date of the Contractor's previous Application for Payment; 4) Such other supplemental information as the Owner may require. Such other information may include a schedule of all materials and equipment stored on site.

10.2 The Owner may withhold payment in whole or in part, and may demand that the Contractor refund amounts previously paid, to protect the Owner from loss because of: 1) The Contractor's default or failure to perform any of its obligations under the Contract Documents, including but not limited to: failure to provide sufficient skilled workers; Work, including equipment or materials, which is defective or otherwise does not conform to the Contract Documents; failure to conform to the Project Time Schedule; and failure to follow the directions of or instructions from the Owner; 2) The Contractor's default or failure to perform any of its obligations under another contract that it has with the Owner; 3) The filing of third party claims, or reasonable evidence that third party claims have been or will be filed; 4) The Work has not proceeded to the extent set forth in the application for payment; 5) Any representations made by the Contractor are untrue; 6) The failure of the Contractor to make payments to its Subcontractors; 7) Damage to the Owner's property or the property of another person or laborer; 8) The determination that there is a substantial possibility that the Work cannot be completed for the unpaid balance of the Contract Sum; and/or 9) Liens filed or reasonable evidence indicating the probable filing of such liens.

10.3 The Owner will pay the Contractor within 30 days after receipt of the Contractor's payment application, provided that the payment application has been properly submitted on a timely basis and is accompanied by all of the required documentation. The Owner may establish a cut-off date for the submission of the payment application.

11 RETAINAGE.

11.1 AMOUNT OF PAYMENTS. Subject to Paragraph 8.1, the amount of the payments to the Contractor shall be determined in accordance with the following paragraphs:

11.2 PAYMENTS. Payments under the contract shall be made at the rate of 95% of the amount set forth in the Contractor's payment application and approved by the Owner until the Work is 50% complete. When more than fifty percent (50%) of the Work has been completed, the amount retained may be reduced at the City's sole discretion. The Engineer may also, at any time, increase retainage by any amount needed to protect the City's interests with respect to any incomplete, defective or unsatisfactory Work; costs or damages incurred by the City that are subject to the Contractor's indemnification obligations; or back charges that the City may assess against the Contractor.

11.3 DOCUMENTATION. Upon request, the Contractor immediately shall supply the Owner with such information as may be requested so as to verify the amounts due to the Contractor, including but not limited to original invoices for materials and equipment and documents showing that the Contractor has paid for such materials and equipment, and so as to verify that amounts due laborers, subcontractors, and materialmen have been paid to them.

11.4 FINAL PAYMENT.

11.4.1 The final application for payment shall be itemized, and the Contractor shall ensure that the final application for payment shall contain one (1) copy of each of the following documents, if not previously delivered to the Owner: 1) All items from Paragraph

10.1; 2) Consent of the Contractor's Surety to Payment; 3) An assignment to the Owner of all warranties obtained or obtainable by the Contractor from manufacturers and suppliers of equipment and materials incorporated into the Work by written instrument of assignment in a form acceptable to the Owner; and 4) Such other documentation as required by the Contract Documents, the Owner, or applicable law.

11.4.2 The making of Final Payment by the Owner shall not constitute a waiver of Claims by the Owner for the following: 1) Liens, Claims, security interests, or encumbrances arising out of the Contract Documents that are unsettled; 2) Failure of the Work to comply with the requirements of the Contract Documents; 3) Terms of special warranties required by the Contract Documents; 4) Claims for Indemnification; 5) Claims about which the Owner has given the Contractor written notice; or 6) Claims arising after Final Payment.

11.5 ESCROW ACCOUNT. The Owner and the Contractor agree that no escrow account shall be required in connection with this Agreement and that retained funds will not earn interest.

12 CHANGE ORDERS.

12.1 A Change Order is a written instrument signed by the Owner and the Contractor stating their agreement upon a change in the Work, the amount of the adjustment or the method for computing the amount of the adjustment of the Contract Sum, if any, and the extent of the adjustment in the Project Time Schedule, if any.

13 CLAIMS AND DISPUTES.

13.1 A Claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment, or interpretation of the terms of the Contract Documents, payment of money, extension of time, or other relief with respect to the terms of the Contract Documents, provided that the Owner's decision to adjust or withhold payment under Paragraph 10.2 shall not be considered a Claim. The responsibility to substantiate claims shall rest with the party making the Claim. The Contractor shall not knowingly present or cause to be presented a false or fraudulent Claim. As a condition precedent to making a claim, the Contractor shall submit an affidavit sworn to before a notary public or other person authorized to administer oaths in the State of Ohio and executed by an authorized representative of the Contractor, which states that:

13.1.1 The Claim which is submitted herewith complies with Paragraph 13.1 of the Owner-Contractor Agreement, which provides that the "Contractor shall not knowingly present or cause to be presented a false or fraudulent Claim."

13.1.2 Claims must be made by written notice in an acceptable written medium. Claims may not be submitted via email.

13.1.3 If the Contractor wishes to make a Claim for an increase in the Contract Sum, written Notice as provided herein shall be given before proceeding to execute the Work.

13.1.4 If the Contractor wishes to make a Claim for additional time, the Contractor shall include an estimate of cost and probable effect of delay on progress of the Work. In the event of continuing delay, only one Claim is necessary. If adverse weather conditions are the basis for a Claim for additional time, such claim shall be documented by data

substantiating that weather conditions were abnormal for the period of time and could not have been reasonably anticipated, and that weather conditions had an adverse effect on the scheduled construction.

13.1.5 If conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents AND (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then the observing party shall give written notice to the other party promptly before conditions are disturbed. If the conditions meet the requirements of (1) AND (2) and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, the Owner will issue an appropriate Change Order.

13.1.6 The Contractor shall make all claims in writing within seven (7) calendar days after the occurrence of the event giving rise to the Claim. Failure to do so shall be an irrevocable waiver of the Claim.

13.1.7 Within ten (10) days of its receipt of a written request, the Contractor shall make available to the Owner or its representative any books, records, or other documents in its possession or to which it has access relating to any Claim and shall require its Subcontractors, regardless of tier, and materialmen to do likewise.

13.1.8 If a Claim has not been resolved within fourteen (14) days after submission to the other party, the City shall have the right, at its sole discretion, to elect to pursue resolution of the Claim through mediation or arbitration. Should the City elect to pursue either mediation or arbitration, said alternative dispute resolution shall be conducted in general conformity with the applicable rules of the American Arbitration Association. Should the City elect not to pursue resolution of a claim through the foregoing process, the Claimant's exclusive remedy is to file suit in the Common Pleas Court of Franklin County, Ohio.

14 DEFAULT OF THE CONTRACTOR.

14.1 EVENTS OF DEFAULT. Each of the following constitutes an event of default of the Contractor:

14.1.1 The Contractor's failure to perform any of its obligations under the Contract Documents and to proceed to commence to correct such failure within forty-eight (48) hours after written notice thereof from the Owner or such lesser time as is provided in the Contract Documents, or

14.1.2 The Contractor's failure thereafter to use its best efforts to correct such failure, or

14.1.3 Except when an extension of time is granted in writing by the Owner, to correct such failure within thirty (30) days after receipt of written notice thereof.

14.1.4 The Contractor's failure to pay its obligations as they become due or the Contractor's insolvency.

14.2 OWNER'S REMEDIES. Upon the occurrence of an event of default the Owner shall have the following remedies, which shall be cumulative:

14.2.1 Order the Contractor to stop the Work, which the Contractor shall do immediately;

14.2.2 To perform through others all or any part of the Work remaining to be done and to deduct the cost thereof from the unpaid balance of the Contract Sum or, if the unpaid balance of the Contract Sum is inadequate, to demand reimbursement of amounts previously paid to the Contractor;

14.2.3 To terminate this Agreement and take possession of, for the purpose of completing the Work or any part of it, all materials, equipment, scaffolds, tools, appliances, and other items belonging to or possessed by the Contractor, all of which the Contractor hereby transfers and assigns to the Owner for such purpose, and to employ any person or persons to complete the Work, including the Contractor's employees, and the Contractor shall not be entitled to receive any further payment until the Work is completed; and/or,

14.2.4 All other remedies which the Owner may have at law or in equity or otherwise under the Contract Documents.

14.3 TERMINATION OF AGREEMENT. The termination of this Agreement shall be without prejudice to the Owner's rights and remedies, including without limitation the Owner's right to be indemnified by the Contractor.

14.4 PAYMENTS DUE CONTRACTOR. If the unpaid balance of the Contract Sum exceeds the cost of finishing the Project, including any costs, expenses or damages incurred by the Owner as a result of the event of default, including attorneys' and consultants' fees and the administrative expense of the Owner's staff, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The obligations under this Paragraph shall survive the termination of this Agreement.

15 DEFAULT OF THE OWNER.

15.1 EVENTS OF DEFAULT. The following constitutes the exclusive events of default of the Owner:

15.1.1 The failure of the Owner to perform any of its obligations under the Contract Documents and to correct such failure within thirty (30) days after receipt of written notice thereof from the Contractor specifying the default and the necessary corrective action.

15.2 CONTRACTOR'S REMEDY.

15.2.1 The Contractor's sole and exclusive remedy for the default of the Owner, other than the failure of the Owner to pay the Contractor, will be to bring a suit for damages in the Common Pleas Court of Franklin County, Ohio. The Contractor's right to exercise that remedy shall be subject to its giving the Owner the required notices and following any other procedures required by the Contract Documents.

15.2.2 If the Owner fails to pay the Contractor as payment becomes due, the Contractor may, upon fifteen (15) days written Notice, stop the Work until payment of the amount owing has been received. An adjustment to the Contract Sum will be made as if the

Work had been suspended for the convenience of the Owner under Section 16 of this Agreement.

16 SUSPENSION OR TERMINATION FOR THE CONVENIENCE OF THE OWNER.

16.1 SUSPENSION FOR THE CONVENIENCE OF THE OWNER.

16.1.1 The Owner may, without cause, order the Contractor to suspend, delay, or interrupt the Work in whole or in part for such period of time as the Owner may determine.

16.1.2 An adjustment shall be made for increases in the cost of performance of the Work, including profit and overhead on the increased cost of performance, caused by the suspension, delay or interruption, provided that the total cost of profit and overhead shall not exceed 10% of the amount of the increased cost not attributable to profit or overhead. No adjustment shall be made to the extent that: performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or an equitable adjustment is made or denied under another provision of this Agreement.

16.2 TERMINATION FOR THE CONVENIENCE OF THE OWNER.

16.2.1 The Owner may, in its discretion and without cause, by written notice to the Contractor terminate this Agreement for the Owner's convenience.

16.2.2 Upon receipt of a written notice from the Owner terminating this Agreement without cause and for the Owner's convenience, the Contractor shall (i) immediately cease performing the Work, unless otherwise directed by the Owner, in which case the Contractor shall take the action directed by the Owner, (ii) take all reasonable and necessary action to protect and preserve the Work, and (iii) unless otherwise directed by the Owner, terminate all agreements with Subcontractors and suppliers.

16.2.3 If this Agreement is terminated without cause and for the Owner's convenience and there exists no event of the Contractor's default, as defined in this Agreement, the Owner will pay the Contractor (i) for Work performed under this Agreement up to the date the notice of termination is received by the Contractor at the rates for Work performed under this Agreement, including overhead and profit of 10% on the Work performed up to the date of termination.

16.2.4 If this Agreement is terminated without cause for the Owner's convenience and there exists an event of the Contractor's default, as defined in this Agreement, the Contractor shall be entitled to receive only such sums as it would be entitled to receive following the occurrence of an event of default under this Agreement.

16.2.5 The termination of this Agreement shall be without prejudice to any rights or remedies that exist at the time of termination.

17 INSURANCE AND INDEMNIFICATION.

17.1 The Contractor shall maintain:

- Comprehensive general liability insurance in the amount of \$1,000,000.00;

- Automobile liability insurance in the amount of \$1,000,000.00;
- Workers compensation coverage as required by Ohio Law;
- Umbrella/Excess liability coverage in the amount of \$2,000,000.00; and
- Installation floater for the Work in the amount of \$N/A;
- Additionally, said policies of insurance shall name the Owner, its elected officials, officers, employees, agents and volunteers as additional insureds for incidents arising out of the Contract.

17.2 Insurance furnished by the Owner, if any, is not intended to and shall not cover equipment and materials before they are physically incorporated into the Work or tools. The Contractor shall bear the entire risk of loss with respect to tools, equipment, and materials.

17.3 To the maximum extent permitted by law, the Contractor shall indemnify and hold harmless the Owner and the Owner's consultants, agents, and employees from and against all claims, damages, losses, and expenses, including but not limited to attorneys' and consultants' fees—whether made by Owner or a third-party—arising out of or related to the Contractor's performance of the Work including but not limited to the failure of the Contractor to perform its obligations under the Contract Documents, any claims for bodily injury, sickness, disease, or death or to injury to or destruction of or loss of use of real or personal property, claims for additional storage and handling charges, liens against funds, claims related to the alleged failure of the Contractor to perform in accordance with the Contract Documents, and/or claims related to the removal, handling, or use of any hazardous materials. The Owner may set off amounts equal to any sums for which it is entitled to be indemnified from the amounts otherwise due the Contractor under the Contract Documents. It is agreed that the cost of the Owner's staff in calculating any expenses under this Paragraph shall be at the rate of \$35.00 per hour.

18 WARRANTIES.

18.1 In addition to any other warranties, guarantees, or obligations set forth in the Contract Documents or applicable as a matter of law and not in limitation of the terms of the Contract Documents, the Contractor warrants and guarantees that:

- The Owner will have good title to the Work and all materials and equipment incorporated into the work will be new;
- The Work and all materials and equipment incorporated into the Work will be free from all defects, including any defects in workmanship or materials;
- The Work and all equipment incorporated into the Work will be fit for the purpose for which intended;
- The Work and all materials and equipment incorporated into the Work will be merchantable; and,
- The Work and all materials and equipment incorporated into the Work will conform in all respects to the Contract Documents.

18.2 Upon notice of the breach of any of the foregoing warranties or guarantees or any other warranties or guarantees under the Contract Documents, the Contractor, in addition to any other requirements in the Contract Documents, shall commence to correct such breach and all

damage resulting therefrom within forty-eight (48) hours after written notice thereof, thereafter shall use its best efforts to correct such breach and damage to the satisfaction of the Owner and, except when an extension of time is granted in writing by the Owner, correct such breach and damage to the satisfaction of the Owner within thirty (30) days of such notice; provided that if such notice is given after final payment hereunder, such 48-hour period shall be extended to seven (7) calendar days. If the Contractor fails to commence to correct such breach and damage, or to correct such breach and damage as provided above, the Owner, upon written notice to the Contractor and without prejudice to any of its other rights or remedies, may correct the deficiencies. The Contractor upon written notice from the Owner shall pay the Owner, within ten (10) days after the date of such notice, all of the Owner's costs and expenses incurred in connection with or related to such correction and/or breach, including without limitation the Owner's administrative, legal, and consulting expenses. The foregoing warranties and obligations of the Contractor shall survive the final payment and/or termination of this Agreement. If the Contractor fails to pay the Owner any amounts due under this Paragraph, the Contractor shall pay the Owner, in addition to the amounts due, a late payment fee of one and one-half percent (1.5%) per month for each month or part thereof that the payments are not paid when due.

19 GENERAL.

19.1 MODIFICATION. No modification or waiver of any of the terms of this Agreement or of any other Contract Documents shall be effective against a party unless set forth in writing and signed by or on behalf of a party, which in the case of the Owner shall require the signature of the Owner's Representative acting under the authority of a specific resolution of the Owner. Under no circumstances shall forbearance, including the failure or repeated failure to insist upon compliance with the terms of the Contract Documents, constitute the waiver or modification of any such terms. The parties acknowledge that no person has authority to modify this Agreement or the other Contract Documents or to waive any of its or their terms, except as expressly provided in this Paragraph.

19.2 ASSIGNMENT. The Contractor may not assign this Agreement without the written consent of the Owner, which the Owner may withhold in its sole discretion.

19.3 THIRD PARTIES. Nothing contained in this Agreement shall create a contractual relationship with or a cause of action in favor of a third party against either the Owner or the Contractor.

19.4 LAW AND JURISDICTION. All questions regarding the validity, intention, or meaning of this Agreement or any modifications of it relating to the rights and obligations of the parties shall be construed and resolved under the laws of the State of Ohio. Any suit, which may be brought to enforce any provision of this Agreement or any remedy with respect hereto, shall be brought in the Common Pleas Court of Franklin County, Ohio, and each party hereby expressly consents to the jurisdiction of such court.

19.5 STATUTE OF LIMITATIONS. Regardless of any provision to the contrary, the statute of limitations with respect to any defective or non-conforming Work that is not discovered by the Owner shall not commence until the discovery of such defective or non-conforming Work by the Owner.

19.6 NOTICES. Notices, requests, or demands by either party shall be in writing, unless otherwise expressly authorized, and shall be personally served, forwarded by expedited messenger service, sent by facsimile transmission, or be given by registered or certified mail, return receipt requested, postage prepaid, and, in the case of the Owner, addressed to the address/FAX number set forth at the beginning of this Agreement marked "Urgent, deliver to Owner's Representative/Designee," and, in the case of the Contractor, addressed to its address/FAX number set forth at the beginning of this Agreement. Any party may change its address/FAX number by giving notice hereunder. All notices, requests, and demands shall be deemed received upon receipt in the case of personal delivery or delivery by expedited messenger service, including leaving the notice at the address provided herein during normal business hours; upon the expiration of forty-eight (48) hours from the time of deposit in the United States mail; or, in the case of a notice given by facsimile transmission, upon the expiration of twenty-four (24) hours after the transmission is sent.

19.7 CONSTRUCTION. The parties acknowledge that each party has reviewed this Agreement and the other Contract Documents and has voluntarily entered into this Agreement. Accordingly, the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Agreement, the other Contract Documents, or any amendments or exhibits to it or them.

19.8 APPROVALS. Except as expressly provided herein, the approvals and determinations of the Owner shall be subject to the sole discretion of the Owner and will be valid and binding on the Contractor, provided only that they be made in good faith, i.e., honestly. If the Contractor challenges any such approval or determination, the Contractor shall have the burden of proving by clear and convincing evidence that it was not made in good faith.

19.9 PARTIAL INVALIDITY. If any term or provision of this Agreement is found to be illegal, unenforceable, or in violation of any laws, statutes, ordinances, or regulations of any public authority having jurisdiction, then, notwithstanding such term or provision, this Agreement shall remain in full force and effect, and such term shall be deemed stricken; provided this Agreement shall be interpreted, when possible, so as to reflect the intentions of the parties as indicated by any such stricken term or provision.

19.10 COMPLIANCE WITH LAWS AND REGULATIONS. The Contractor, at its expense, shall comply with all applicable federal, state, and local laws, rules, and regulations applicable to the Work. Including, but not limited to Ohio's Prevailing Wage law if applicable.

19.11 PROJECT SAFETY. The Contractor shall follow all applicable safety and health regulations during the progress of the Project and shall monitor all of its employees and its subcontractors for compliance with such safety and health regulations. In undertaking the responsibilities set forth in this Paragraph, the Contractor does not assume any duty or responsibility to the employees of any Subcontractor or supplier, regardless of tier. The Owner assumes no responsibility for the development, review, or implementation of any project safety plan or for Project safety and has no authority to direct the means and methods of the Contractor.

19.12 EQUAL OPPORTUNITY. Contractor agrees that, in the hiring of employees for the performance of work under the Contract or any subcontract, no contractor, subcontractor, or any person acting on a contractor's or subcontractor's behalf, by reason of race, creed, sex, disability or military status as defined in section 4112.01 of the Revised Code, or color, shall discriminate against any citizen of the state in the employment of labor or workers who is qualified and available to

perform the work to which the employment relates. Contractor further agrees that neither it, its subcontractors, or any person on the Contractor's or subcontractor's behalf, in any manner, shall discriminate against or intimidate any employee hired for the performance of work under the contract on account of race, creed, sex, disability or military status as defined in section 4112.01 of the Revised Code, or color. That there shall be deducted from the amount payable to the Contractor by the Owner under this Agreement a forfeiture of twenty-five dollars (\$25.00) as required by O.R.C. Section 153.60 for each person who is discriminated against or intimidated in violation of this Agreement. That this Agreement may be canceled or terminated by the Owner and all money to become due hereunder may be forfeited for a second or subsequent violation of the terms of this section of this Agreement.

19.13 USE OF OWNER'S FACILITIES. The Contractor shall ensure that neither its employees, nor its Subcontractor's or material supplier's employees, regardless of tier, do any of the following without the express prior written consent of the Owner: use the Owner's cafeteria, rest rooms, or phones; use or bring any alcoholic beverages, controlled substances, or firearms on any property owned by the Owner. The Owner will not tolerate any such actions and any such action observed or made known to the Owner shall be dealt with severely.

19.14 ETHICS. By signing and entering into this agreement with the Owner, the Contractor represents that it is familiar with all applicable ethics law requirements, including without limitation Sections 102.04 and 3517.13 of the O.R.C., and certifies that it is in compliance with such requirements. The Contractor understands that failure to comply with the ethics laws is, in itself, grounds for termination of this contract and may result in the loss of other contracts with the Owner.

19.15 PROPERTY TAX AFFIDAVIT. The Contractor's affidavit given under ORC Section 5719.024 is incorporated herein.

19.16 ENTIRE AGREEMENT. This Agreement and the other Contract Documents constitute the entire agreement among the parties with respect to their subject matter and will supersede all prior and contemporaneous, oral or written, agreements, negotiations, communications, representations, and understandings with respect to such subject matter, and no person is justified in relying on such agreements, negotiations, communications, representations, or understandings.

CITY OF DUBLIN, OHIO

By: _____

By: _____

Its: _____

Its: _____

Date: _____

Date: _____

APPROVED AS TO FORM:

Date: _____

Stephen J. Smith, Esq., Law Director

CERTIFICATE OF AVAILABILITY OF FUNDS

I Angel Mumma, hereby certify that I am the fiscal officer for the CITY OF DUBLIN, OHIO and that the amount of money to wit \$ _____ required to meet the cost of the attached Contract between the City and _____ has been or will be, before the ordering of any materials, lawfully appropriated for the purpose of said Contract and the money so appropriated is on deposit or in process of collection to the credit of the appropriate fund free from any previous encumbrances. Moneys due in excess of the Contract Sum and any Contingency amount assigned thereto shall require an additional and separate Fiscal Officer's Statement of Availability which shall not be given unless the Contract adjustment is directly attributable to one of the express methods for increasing the Contract Sum under the Contract Documents; and, such process is completed in the manner required by the Contract Documents.

Date

Angel Mumma, Finance Director

B. CITY OF DUBLIN GENERAL CONDITIONS DIVISION 100

City of Dublin Division of Engineering General Condition Division 100 can always be found at:

<http://dublinohiousa.gov/dev/dev/wp-content/uploads/2013/02/City-of-Dublin-General-Conditions-Section-100.pdf>

If you purchase a hard copy of the project documents the General Condition Division 100 will be on the CD included in the Bid Document. The General Condition Division 100 will also be posted with the project on the City of Dublin's website where the project documents are available for download.

C. SUPPLEMENTAL GENERAL CONDITIONS

THERE ARE NO SUPPLEMENTAL GENERAL CONDITIONS FOR THE CITY OF DUBLIN, OHIO EMERALD PARKWAY PHASE 8 PROJECT.

D. SUPPLEMENTAL SPECIFICATIONS

CONTRACT SPECIFICATIONS

All contract specifications in this section are to be considered a part thereof.

MAINTENANCE OF TRAFFIC

MOT shall be per the approved plans unless otherwise approved by the City Engineer.

WORKING HOURS

The Contractor is permitted to work between 7:00 A.M. and 7:00 P.M., Monday through Saturday unless noted otherwise in the plans. Permission to work on Sunday and holidays must be requested in writing and approved by the City Engineer. Some construction work at the Riverside Drive/Emerald Parkway intersection is restricted to night work.

STAGING AREA

The Contractor may use as a staging area the City owner properties of 3960, 4000, 4030, and 4052 Bright Road. The southern portion of the Holder-Wright farm, now a City park property, located at 4729 Bright Road may be used as a staging area. The northern limits of the staging area shall be 300 ft north of the existing Limited Access/Right-of-Way line of I-270. No disturbance north of this 300 ft line shall be permitted. Trees located in these staging areas shall be protected unless authorization to remove is granted by the City. All areas disturbed by the contractor shall be fully restored to their original condition or better to the satisfaction of the City. The Contractor shall perform all restoration at their costs.

GEOTECHNICAL INFORMATION

The geotechnical report for the project is included in the bid documents. The rock drill corings have been retained and are available to view by appointment at our 5800 Shier-Rings Road office. Contact Ken Richardson at 410-4631 to set up an appointment.

TEST HOLES

The Contractor is encouraged to dig test holes at the project site prior to making their bid to familiarize themselves with site subsurface conditions. The bidder shall take into account any difficulty they perceive in constructing the project due to rock, ground water, weak soils, topsoil, etc.

BLASTING OF ROCK

Blasting shall be permitted for road excavation and utility excavation. All applicable specifications and safety precautions will be strictly enforced. Rock excavation may occur near existing utilities. It is the contractor's responsibility to use appropriate means and methods of rock excavation near existing utilities. Any damage to existing utilities and related costs of repair are the responsibility of the contractor.

Item 203 – EMBANKMENT

No excavated rock shall be used as embankment material.

CONSTRUCTION MATERIALS

No alternates or deviations shall be permitted from those construction materials shown on the plans. Bidders shall not submit alternates with their bid.

INSPECTION

All inspections shall be provided by the City.

COORDINATION

Contractor shall coordinate his work to facilitate work by utilities in the right-of-way and outside of the construction work limits.

PROPOSAL

No extra compensation will be paid to the Contractor by reason of compliance with any of the requirements indicated in the Specifications. Payment shall be deemed to be included among the several items, as bid upon, unless otherwise specifically provided.

SCHEDULE

The Contractor shall submit a work schedule to the City Engineer at the time of the pre-construction meeting. This schedule will detail the timing of the work activities for the various sections of the project. Revised project schedules are to be submitted every month throughout the project.

CONSTRUCTION LAYOUT

All construction layout stakes for this project shall be provided by the Contractor. All work shall be performed by and under the guidance of an Ohio Professional Surveyor.

COORDINATING WITH UTILITIES

It is the Contractor's responsibility to coordinate their work with the private utilities as required. The utility owner may be required to brace, temporarily support, or relocate their respective utilities so that the proposed improvements can be constructed.

DEWATERING

The cost of any dewatering operations required for the construction of the sanitary sewers, storm sewers, water mains, culverts, AEP duct systems and vaults, and/or conduits shall be included in the price bid for the various items.

CONDUIT END TREATMENT

Immediately after placement of any conduits, the Contractor shall construct the end treatments required by the plans at both the outlet and inlet ends. This shall include headwalls, flared-end sections, rip-rap, rock channel protection, seeding, etc.

MANHOLES, CATCH BASINS AND INLETS

The contractor will make all final grade adjustments of manhole, catch basin and inlet covers and frame assemblies using injection molded high density polyethylene (HDPE) adjustment rings where practical. These adjustment rings shall be manufactured from polyethylene plastic as identified in ASTM Designation D-1248 (Standard Specification for Polyethylene Plastic Molding and Extrusion Materials). Installation shall be per manufacture's recommendations only. The annular space between the rings and cone basin, the rings, and the rings and cover frame shall be sealed utilizing an approved butyl sealant.

ITEM 625 – POWER SERVICE, AS PER PLAN

Work shall include lighting controller complete in place.

STORAGE OF EQUIPMENT AND MATERIALS

No materials, including pipe, shall be stored within twenty (20) feet of any intersecting street or driveway. During non-working hours, storage of equipment shall comply with these same requirements and shall not in any way relieve the Contractor of their legal responsibilities or liabilities for the safety of the public.

SURVEY MONUMENTATION

The contractor shall carefully preserve bench marks, property corners, reference points, stakes and other survey reference monuments or markers. In cases of willful or careless destruction, the contractor shall be responsible. Resetting of markers shall be performed by an Ohio Professional Surveyor as approved by the City Engineer at the contractor's expense.

CONSTRUCTION NOISE

Any devise shall not be operated at any time in such a manner that the noise created substantially exceeds the noise customarily and necessarily attendant to the reasonable and efficient performance of such equipment.

TRAFFIC CONTROL

Permanent signing shall be non-performed. The City will fabricate and install all permanent traffic control signs. Maintenance of Traffic signing shall be performed by the Contractor with the Maintenance of Traffic.

STREET LIGHTING

The contractor shall submit shop drawings and specifications for the street light poles and appurtenances within 4 (four) weeks after the Notice To Proceed is authorized. Shop drawings and specification approval by the City of Dublin is required prior to fabrication. The Contractor shall order light poles immediately thereafter so as not to delay the completion of the project. The completion date for this project is **November 20, 2014**.

ITEM SPECIAL – EXPANSION MATERIAL

Full depth expansion material one half (1/2) inches thick conforming to ASTM D 1752, Type 1 (recycled rubber expansion material) shall be utilized where new work meets existing walk, curbs or structures. Fibrous type expansion material is not to be used.

E. GEOTECHNICAL SPECIFICATIONS



**SUBSURFACE INVESTIGATION
EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO**

Report to:

**BURGESS & NIPLE, INC.
COLUMBUS, OHIO**

Prepared by:

**BBC&M ENGINEERING, INC.
GEOTECHNICAL ENGINEERING
COLUMBUS, OHIO**

July 2009

**SUBSURFACE INVESTIGATION
EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO**

Report to:

**BURGESS & NIPLE, INC.
COLUMBUS, OHIO**

Prepared by:

**BBC&M ENGINEERING, INC.
GEOTECHNICAL ENGINEERING
COLUMBUS, OHIO**

July 2009



July 31, 2009
011.12300.T00

Mr. Vince Amato, P.E.
Burgess & Niple, Inc.
5085 Reed Road
Columbus, OH 43220

Re: Subsurface Investigation
Emerald Parkway Extension, Phase 8
Dublin, Ohio

Mr. Amato:

In accordance with our revised proposal dated May 11, 2009, which was authorized as part of the Burgess & Niple, Inc., Agreement for Subsurface Investigation which was executed on May 14, 2009, BBC&M Engineering, Inc. (BBCM) has completed a Subsurface Investigation for the planned Emerald Parkway (Phase 8) extension project in Dublin, Ohio (see the Vicinity Map included as Plate 1 of the Appendix). Our final report containing observations and geotechnical recommendations for this Subsurface Investigation are herewith submitted.

We appreciate having been given the opportunity to be of service. Please do not hesitate to contact our office if you have any questions concerning our report.

Respectfully,

BBC&M ENGINEERING, INC.
Columbus, Ohio

Nathan D. Abele, E.I.
Staff Engineer

Richard S. Weigand, P.E.
Senior Engineer



NDA/na
Submitted: 2 copies/Email

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1.0 PROJECT DESCRIPTION

BBCM understands that it is planned to construct a new section of Emerald Parkway (identified as Phase 8) in Dublin, Ohio. This section of roadway begins just east of the existing Emerald Parkway bridge over the Scioto River at the intersection with SR 257 (Riverside Drive), and extends approximately 3,000 feet eastward along the north side of IR-270 before curving northward to cross existing Bright Road at a location approximately 1,600 feet west of Sawmill Road. The new alignment will then continue north across Billingsley Creek and connect into the existing southern terminus of Emerald Parkway south of Hard Road. The overall length of this section of new Emerald Parkway is approximately 5,600 linear feet. This project is also to include: construction of a roundabout at the intersection of Bright Road and Emerald Parkway; a three-sided culvert to carry Emerald Parkway over Billingsley Creek; some widening of SR 257 north and south of the Emerald Parkway intersection; and, construction of a cul-de-sac on Bright Road just east of the intersection with SR 257. Additionally, a trunk sanitary sewer line is to be constructed along this new alignment of Emerald Parkway, from SR 257 to the intersection with Bright Road.

The majority of the proposed alignment traverses mostly flat grassy and cultivated areas; however, some densely wooded areas and tree lines are present at several locations along the proposed alignment. Additionally, the ground surface at the west end of the proposed alignment slopes down toward the Scioto River, dropping approximately 45 feet in elevation between STA 172+00 and STA 182+00. Also, the terrain is quite steep in the immediate vicinity of Billingsley Creek. Based on profile information provided by Burgess & Niple (B&N), BBCM understands that the proposed vertical alignment of the west end of this section of Emerald Parkway will require as much as 20 feet of "cut" but, to the east of STA 183+00, the roadway profile will generally be located within 3 feet of the existing ground surface.

To the east of STA 183+00, the invert of the proposed sanitary sewer will generally range from 10 to 20 feet below the existing ground surface. Between STA 183+00 and SR 257, however, the planned invert is to be 15 to 25 feet below the current ground surface, and 5 to 10 feet below the proposed pavement profile of Emerald Parkway.

2.0 FIELD INVESTIGATION

Between May 28 and June 5, 2009, twenty (20) roadway/sewer borings (B-1 through B-20) and two (2) culvert borings (C-1 and C-2) were drilled along the proposed roadway alignment to the approximate depths requested by B&N. The boring locations were selected and marked in the field by personnel from B&N, with stationing, offset, and ground surface elevations at these locations being provided to BBCM by B&N. Where access considerations required repositioning of a boring, BBCM measured the distance between the completed boring and the original staked location, and hand-leveled the elevation difference between the staked and drilled locations. These measurements were then provided to B&N. The approximate locations of the completed borings are shown on the Plan of Borings submitted as Plates 2 through 4 of the Appendix.

The borings were drilled by either a truck-mounted or an ATV-mounted drill rig using either a 3¼-inch I.D. hollow-stem auger or 4½-inch O.D. continuous-flight auger to advance the borings between sampling attempts. At regular intervals, the necessary tools were withdrawn from the boring, and disturbed but representative soil samples were obtained by lowering a 2-inch O.D.

split-barrel sampler to the bottom of the boring and then driving the sampler into the soil with blows from a 140-pound hammer freely falling 30 inches (Standard Penetration Test). Where the initial sampling attempt failed to retrieve a representative sample, a 2½-inch O.D. split-barrel was re-driven through and six inches deeper than the initial sampling attempt.

After being advanced through the soil overburden, 3.6 to 21.4 feet of bedrock were cored in Borings B-1 through B-5, B-13, B-14, and C-2 using an NQ core barrel and a diamond core bit using water as the circulating fluid. Bedrock specimens retrieved from the coring operations were preserved in compartmental boxes.

All recovered samples were transported to BBCM's laboratory for further examination and testing. After completion of drilling, each boring was backfilled with soil cuttings and the pavement surface was repaired with cold patch asphalt where the boring penetrated the asphalt surface.

In the field, BBCM personnel performed the following specific duties: 1) examined all samples recovered from the borings; 2) preserved representative portions of all samples in airtight glass jars; 3) prepared a log of each boring; 4) made seepage and groundwater observations; 5) made hand-penetrometer measurements in specimens exhibiting cohesion; and, 6) provided liaison between the field work and the Project Engineer so that the exploration program could be modified in the event unusual or unexpected subsurface conditions were encountered.

3.0 LABORATORY TESTING

In the laboratory, the samples were visually identified, and, index tests consisting of natural moisture content, liquid and plastic limit determinations, sieve analyses. The results of these tests permit an evaluation of the strength and compressibility characteristics of the soils encountered at this site by comparison with similar soils for which these characteristics have been previously determined. The results of the moisture content and Atterberg limit tests are reported on the individual boring logs. Gradation test results are presented graphically on Plates 33 through 52 in the Appendix.

In addition to the above index tests, unconfined compressive strength tests were performed on intact samples of the recovered bedrock core. The results of these tests are presented on Plates 53 through 62 in the Appendix, and are also reported numerically on the boring logs.

Based on the results of the laboratory testing program, soil descriptions contained on the field logs were modified, if necessary, and laboratory-corrected logs are included in the Appendix as Plates 7 through 30. Shown on these logs are: descriptions of the stratigraphy encountered; depths from which samples were attempted; sampling efforts (blow counts) required to obtain the specimens; seepage and groundwater observations; and values of hand-penetrometer measurements made in soil samples exhibiting cohesion. Hand-penetrometer values are roughly equivalent to the unconfined compressive strength of the cohesive fraction of the soil sample. In addition to the percentage of recovery for rock core, the logs also include the Rock Quality Designation (RQD).

Soils described in this report have been classified basically in accordance with the Unified Soil Classification System, but this system has been augmented by the use of special adjectives to designate the approximate percentages of minor soil components. An explanation of the

symbols and terms used on the boring logs, and definitions of the special adjectives used to denote the minor soil components are presented on Plate 5 in the Appendix of this submission. Plate 6 should be referenced for bedrock sampling and hardness descriptions.

4.0 GENERAL SUBSURFACE CONDITIONS

4.1 Emerald Parkway - STA 171+00 to Approximate STA 181+00

Beneath 6 to 11 inches of topsoil, Borings B-1 through B-4 encountered 1.4 to 6.9 feet of soil overburden above the underlying bedrock. In Boring B-1, the soil overburden consisted of stiff brown silty clay, and in Boring B-4, the uppermost 1.6 feet of soil was also described as stiff to very-stiff brown silty clay. The majority of the overburden in Borings B-2 through B-4 consisted of loose to dense brown fine to coarse sand, silt, and gravel mixed with clay or silty clay and containing numerous limestone fragments, some of which were cobble and boulder-sized.

Hard gray and dark-gray limestone was encountered at the depths of 2.0, 7.5, 6.3, and 6.0 feet in Borings B-1 through B-4, respectively. The limestone was generally massively bedded and contained a few nodules and zones of very hard chert.

No groundwater seepage was observed in any of these borings prior to bedrock coring. It should also be noted that, in Boring B-1, all coring water was lost from the bore hole upon the removal of the outer core barrel.

4.2 Emerald Parkway - Approximate STA 181+00 to STA 193+00

Borings B-5 through B-9 were drilled in this area. Beneath 6 to 10 inches of topsoil, the general stratigraphy encountered in these borings may be described in descending order as follows:

- ▶ 6.8 to 12.5 feet of stiff to hard brown, dark-brown and dark-gray silty clay, which contained a few medium-stiff pockets in Boring B-9. Also, in Boring B-9, the uppermost 2.2 feet of this stratum was described as being slightly organic.
- ▶ 4.5 to 15.0 feet of granular soil described as medium-dense to very-dense gravel and sand containing cobbles. This stratum was not encountered in Boring B-5, and Boring B-7 was terminated in this deposit at a depth of 20 feet below the ground surface. In Boring B-9, this granular soil was underlain by 4.5 feet of very-stiff to hard gray mottled with brown silty clay described as partly similar to very-soft shale.
- ▶ Boring B-5 and B-6 encountered limestone bedrock at Elevations 842.2 and 840.0, respectively. Boring B-5 was terminated after coring 10.9 feet into the limestone, whereas Boring B-6 was terminated after encountering auger refusal at a depth of 14.8 feet.
- ▶ Borings B-8 and B-9 were terminated after augering 2.0 and 8.0 feet, respectively, into very-soft gray shale which was similar to very-stiff to hard clayey silt.

No groundwater seepage was noted during drilling in Borings B-5 through B-7. Boring B-9 noted seepage at a depth of 8 feet, and more significant quantities of groundwater were noted in Borings B-8 and B-9 at the depths of 8.0 and 8.5 feet below the ground surface, respectively. At the completion of drilling, groundwater had accumulated in Borings B-8 and B-9 to the depths of 9.0 and 16.2 feet below the ground surface, respectively.

4.3 Emerald Parkway - STA 193+00 to Billingsley Creek

Borings B-10 through B-16 were drilled in this section of proposed Emerald Parkway, and encountered the following subsurface stratigraphy:

- ▶ 2 to 11 inches of topsoil (average = 6 inches). In Boring B-15, the topsoil was underlain by 0.9 feet of very-stiff dark-gray silty clay described as being slightly organic.
- ▶ 2.6 to 7.4 feet of stiff to hard brown mottled with gray and dark-gray silty clay, except in Borings B-11 and B-13, which consisted primarily of medium-stiff to stiff silty clay.
- ▶ 2.0 to 8.5 feet of stiff to hard brown and brown mottled with gray clayey silt. Borings B-12 and B-13 did not encounter, and Borings B-15 and B-16 were terminated in, this stratum.
- ▶ 3.0 to 11.8 feet of stiff to hard gray clayey silt and silty clay in Borings B-10, B-11, B-15 and B-16.
- ▶ 0.7 to 2.0 feet of loose to medium-dense gray and brown fine to coarse sand in Borings B-10 through B-12. Borings B-10 and B-11 were terminated in this stratum.
- ▶ Borings B-12 through B-14 were terminated after augering and coring 7.5 to 13.2 feet into soft to medium-hard dark-gray shale.

No seepage was noted during drilling in Borings B-15 and B-16, and these borings were dry at completion. In Boring B-10, slight seepage was noted at 18.7 feet, but no measureable amount of water had accumulated at the bottom of the boring at the completion of drilling.

In Borings B-11 through B-14, however, groundwater was noted between the depths of 6.0 and approximately 16 feet as drilling progressed. At the completion of Borings B-12 and B-13 and prior to coring in Borings B-13 and B-14, water had accumulated in the bore holes to between the depths of 2.7 and 16.2 feet below the ground surface.

4.4 Billingsley Creek Culvert

Borings C-1 and C-2 were drilled along the northern creek bank, at an elevation roughly 10 to 13 feet below the proposed profile of Emerald Parkway. Beneath 6 to 7 inches of existing rootmat and topsoil, the general stratigraphy encountered in these culvert borings may be described in descending order as follows:

- ▶ 10.0 to 14.9 feet of hard brown becoming gray clayey silt containing cobbles and boulders.
- ▶ 12.5 feet of dense to very-dense fine gray silt and fine to coarse sand containing layers of hard gray clayey silt in Boring C-1.
- ▶ 8.5 to 20.0 feet of medium-dense to very-dense gray and brown fine to medium and fine to coarse sand.
- ▶ Both borings were terminated after penetrating and coring 2.2 to 8.1 feet in very-soft to soft gray shale with a fragmental structure, and which was described as being similar to hard clayey silt in Boring C-1.

Although both of these borings were drilled at locations which were roughly 3 to 4 feet above the flow line of Billingsley Creek, groundwater was initially noted in Borings C-1 and C-2 at the depths of 19.2 and 16.0 feet below the ground surface. At the completion of drilling, groundwater had accumulated in the borings to between the depths of 26.4 and 27.4 feet below the ground surface.

4.5 Bright Road

Borings B-17 and B-18 were drilled in existing Bright Road and encountered 8 inches of asphalt over 6 to 8 inches of existing granular base material. Beneath the existing pavement, Boring B-17, located just east of the proposed roundabout at the intersection with Emerald Parkway, encountered 2.3 feet of stiff to very-stiff brown silty clay underlain by 6.5 feet of very-stiff to hard brown mottled with gray clayey silt. Boring B-18 was drilled near the proposed cul-de-sac to the east of Riverside Drive and encountered 4.7 feet of stiff to very-stiff brown silty clay over apparent limestone bedrock. No seepage was noted in either of these borings.

4.6 Riverside Drive

Boring B-19, drilled along the east side of existing Riverside Drive and just north of Tuller Road, encountered 4 inches of topsoil underlain by 3.2 feet of hard brown mottled with dark-gray silty clay described as being slightly organic. Boring B-19 encountered fragmented limestone at Elevation 797.7, and auger refusal at Elevation 796.1.

Boring B-20 was also located along the east side of Riverside Drive, and just north of the proposed Emerald Drive intersection. This boring encountered 2.9 feet of existing fill and possible fill which was described as fine to coarse sand and gravel containing limestone fragments. Apparent limestone bedrock was noted at a depth of 2.9 feet (Elevation 806.2), and auger refusal was encountered at a depth of 3.0 feet below the existing ground surface.

No groundwater seepage was noted during drilling in either Boring B-19 or B-20.

5.0 ANALYSES AND RECOMMENDATIONS

5.1 Roadway Embankment Construction

Profile information provided by B&N indicates that as much as 20 feet of cut and up to roughly 12 feet of new fill will be necessary to attain the desired profile of this phase of Emerald Parkway. Minimal profile adjustments are anticipated on the portions of Bright Road and Riverside Drive being reconstructed and widened.

5.1.1 Embankment Foundation/Subgrade Preparation

Prior to commencing earthwork operations, it is recommended that all existing pavement, structures, sod and topsoil, existing trees including their entire root mass, vegetation, and other miscellaneous materials be completely removed from the entire footprint of the proposed Emerald Parkway roadway/embankment. Following the removal of these materials, it is recommended that the entire exposed subgrade and embankment foundation surface be examined by a Geotechnical Engineer to identify any weak, wet, organic, or otherwise unsuitable soils that were not encountered during the subsurface investigation, particularly in at-grade and fill areas. This is of particular importance in the vicinity of Borings B-9, B-11, B-13 and B-19 where slightly organic and medium-stiff to stiff soils were encountered at the approximate subgrade level.

5.1.1.1 "Fill" Areas

Where the proposed vertical alignment will require the placement of less than 3 feet of new fill to attain the proposed subgrade level, BBCM recommends that consideration be given to proofrolling the exposed embankment foundation prior to commencing fill placement in these areas. This additional proofrolling, performed in accordance with Item 204.06 of the 2008 ODOT Construction and Material Specifications (CMS) and Section 204 of the 2006 ODOT Construction Inspection Manual of Procedures, would assist in identifying soft, wet or weak zones that may be present in areas where the thickness of new fill embankment may be insufficient to "bridge" an underlying weak or wet soil. If any such zones are present, the materials contained in these zones should be either scarified, dried, and thoroughly recompacted in place in accordance with ODOT Item 203.07, or be removed and the overexcavation filled in a controlled manner with compacted, suitable embankment material (Item 203.02) and the recommendations presented in this report. BBCM recommends that the Geotechnical Engineer of Record or his/her designated representative be present at the time of proofrolling, as visual observation of these procedures may result in a partial reduction of undercutting of unsuitable soils.

Although Item 203.05 permits the use of a "bridge lift" to aid in spanning soft or wet foundation areas, BBCM recommends that this practice be discouraged in areas where less than 3 feet of new fill is planned. Soft, weak, or wet soils that are not removed from beneath a thin layer of fill may result in significant difficulties in achieving the compaction percentages required for the new fill (Items 203.07 or 204.03) such that final subgrade acceptance proofrolling may require overexcavation of the new fill where weak soils were "bridged" by a minimal thickness of new fill.

New fill used to construct the roadway embankment or to backfill overexcavated areas of the proposed roadway subgrade should consist of inorganic soil free of all miscellaneous materials, cobbles, and boulders. The fill/backfill should be placed in uniform, thin layers and then compacted in accordance with either Item 203, "Roadway Excavation and Embankment", or when within 12 inches of the proposed subgrade level, Item 204 "Subgrade Compaction and Proofrolling", of the ODOT "*Construction and Material Specifications*." Fill materials should not be placed in a frozen condition or upon a frozen surface. **Also, any fill material placed within 3 feet of the proposed subgrade level should be tested in the laboratory to determine that the borrow materials are capable of exhibiting subgrade support characteristics that are no less than the CBR value used during the pavement design (see "Pavement Subgrade Evaluation" section on page 10 of this report).**

At locations where new fill is to be placed on an existing ground surface with a slope that is between 4(H):1(V) and 8(H):1(V), benching of the existing ground surface should be performed in accordance with Item 203.05 of the 2008 ODOT CMS. However, at any locations where the existing ground surface is steeper than 4(H):1(V), BBCM recommends that benching should be performed in accordance with the procedures outlined in the ODOT Geotechnical Bulletin GB2, *Special Benching and Sidehill Embankment Fills*, dated November 4, 2008, and the 2006 ODOT *Construction Inspection Manual of Procedures*. Additionally, the sides of new fill embankments should be constructed with slopes no steeper than 2 (horizontal) on 1 (vertical).

5.1.1.2 "At-Grade" and "Cut" Areas

■ *Bedrock Subgrade*

Based on the results of the borings and the proposed profile information, BBCM anticipates that bedrock will be encountered at, or within 2 feet of, the proposed Emerald Parkway subgrade level from Riverside Drive to approximate STA 181+00. Bedrock may also be encountered at the subgrade level where Riverside Drive is being widened; however, Borings B-19 and B-20 encountered limestone at the depths of 3.5 and 2.9 feet below the ground surface. Because of the wide spacing of these explorations, however, consideration should also be given to the possibility that bedrock may be present along Riverside Drive at elevations higher than what was encountered in the borings.

In accordance with Item 204.05 of the ODOT *Construction and Materials Specifications (CMS)* the proposed pavement subgrade should be undercut to a depth of two feet below the bottom of the asphalt or concrete pavement. The overexcavation should also extend laterally to at least one foot outside the proposed pavement shoulder. This overexcavated material must be replaced with compacted, suitable embankment material (ODOT CMS Item 204.02) which possesses subgrade support characteristics consistent with the design CBR for the pavement section. BBCM recommends that consideration be given to using ODOT Item 703.16.C.2 Granular Material B (Item 304).

BBCM also recommends that consideration be given to placing a geotextile fabric (ODOT Item 712.09, Type D) at the bottom of these subgrade overexcavations prior to backfilling to reduce the potential for loss of backfill material and granular base course into any large fractures or voids that may be present in the limestone bedrock.

Significant difficulties should be anticipated in performing excavation of limestone bedrock at this project, and it is understood that drilling and blasting was required to remove bedrock for the construction of Emerald Parkway directly across the Scioto River from this site. Additionally, it must be emphasized that **a direct correlation should not be made between the performance of the drilling rigs and the ability of construction equipment to excavate bedrock at this site**. RQD measurements obtained during bedrock coring (see Plate 6 of the Appendix for an explanation) varied from 0% to 93% in the limestone. Ten unconfined compressive strength tests were performed on portions of the recovered limestone bedrock. The results of these tests ranged from 5,760 psi to 18,959 psi, with an average of 12,774 psi.

■ *Soil Subgrade*

To the east of approximate STA 181+00 on Emerald Parkway, and also along Bright Road, none of the borings encountered bedrock within 2 feet of the anticipated subgrade level.

Once the desired subgrade elevation has been attained in "cut" and "at-grade" areas, BBCM recommends that the entire exposed subgrade be examined by a Geotechnical Engineer to identify any weak, wet, organic, or otherwise unsuitable soils that were not encountered during the subsurface investigation. This is of particular importance in the vicinity of Borings B-9, B-11, B-13 and B-19 where slightly organic and medium-stiff to stiff soils were encountered at the approximate subgrade level. After any unsuitable subgrade materials have been overexcavated and properly backfilled, the subgrade soil beneath the entire roadway and shoulder pavement area should be scarified and recompacted to a depth of 12 inches below the subgrade level in

accordance with ODOT Item 204.03. During recompaction, the moisture content of the subgrade soil should be maintained or adjusted in accordance with ODOT Item 203.07.A.

Final subgrade proofrolling should be performed in accordance with Item 204.06 of the ODOT *Construction and Material Specifications*, and Section 204 of the 2006 ODOT *Construction Inspection Manual of Procedures*. If weak, wet, or soft zones are present, it is recommended that the materials contained in these zones should be removed and replaced in accordance with Item 204.04.

Following the completion of the scarification, recompaction, and proofrolling of the subgrade in these cut and at-grade areas, it is strongly recommended that construction traffic be restricted from traveling on the compacted subgrade. Cohesive subgrade soils subjected to repetitious construction load and moisture fluctuations, which may occur as a result of exposure to rainfall and/or surface water runoff, may exhibit subgrade instability.

It should be noted that several of the borings encountered soil at the approximate subgrade level which possessed a moisture content at or slightly above the plastic limit, and Borings B-11 and B-13 encountered medium-stiff to stiff soil to depths of 5 to 7 feet below the proposed subgrade level. Soils such as these may exhibit significant deflection under a proofroll, and may need to be scarified, aerated and recompacted, or be completely removed and replaced with more suitable material. It is recommended, however, that the maximum depth of any necessary overexcavation be limited to 5 feet, even where the bottom remains unstable. In these cases, it is recommended that a geotextile (ODOT Item 712.09, Type D) be placed at the bottom of the overexcavation and then the undercut area backfilled with compacted granular material (ODOT Item 703.16.C Type C or D Granular Material). To assist the paving process, it may be desirable to top this granular backfill with a few inches of Item 703.16.C.2 (Type B).

5.1.1.3 Additional Subgrade Preparation Considerations

The recommendations presented in this report are based on the conditions encountered at the time of the subsurface investigation, and it should be recognized that the amount and location of any necessary subgrade remediation is dependent on the moisture conditions of the subgrade soil at the time of construction. The actual locations and depths of subgrade areas requiring undercut or remediation must be determined during the proofrolling operations. It is strongly recommended that the Geotechnical Engineer of Record be present at the time of proofrolling in an effort to minimize the amount of any undercut.

It should also be noted that the cohesive soils encountered in the borings performed for this project, if exposed to inclement weather or rainfall, may rapidly absorb additional moisture and weaken. It is imperative that these soil types not be exposed to rainfall while in a loosened state (such as during disking and drying for moisture conditioning). Should these materials become sufficiently saturated that additional moisture conditioning is impractical, the material should be wasted. Therefore, it is recommended that moisture conditioning only be performed when extended periods of suitable weather are anticipated, and that only the amount of borrow soil be exposed that may be moisture conditioned and properly compacted during suitable weather periods.

5.1.2 Borrow Soil and Backfill Compaction Recommendations

Soil used to backfill any overexcavated subgrade materials or used as fill to attain the design subgrade level should consist of clean inorganic soils free of debris and cobbles, and should be thoroughly compacted in accordance with ODOT specifications (Item 203, and when within 12 inches of subgrade level, Item 204). Additionally, BBCM recommends that the moisture content of all soil used as fill be maintained within -2% to +2% of the optimum moisture content during all compaction operations. Fill should not be placed in a frozen condition or upon a frozen subgrade. The source(s) of borrow should be designated well in advance of construction and bulk samples should be procured and tested in a laboratory to determine compaction and subgrade support characteristics so that this data will be available for the control of fill when construction begins. Additionally, **all soil used as new fill or backfill within 3 feet of the proposed subgrade level must be capable of providing subgrade support characteristics in a final compacted state that are no less than the value used for the design of new pavement (see "Pavement Subgrade Evaluation" section on page 10 of this report).**

5.1.3 Yielding Subgrade

Laboratory tests performed on the near-surface soils at this site indicate that the anticipated subgrade soils may be considered moderately to highly plastic and sensitive to the effects of moisture and repetitive construction loads. Soil of this type may "fail" (i.e., rut or pump unacceptably) during proofrolling, especially if the subgrade soils become wet and the moisture contents increase. If such yielding does occur, it is imperative that the subgrade be stabilized before a full-depth pavement is constructed, even if an aggregate base is to be used.

Restricting construction activity and permitting the subgrade to dry will frequently eliminate yielding if weather conditions are favorable. If exceptionally good drying weather is not expected or does not occur, however, it will likely be necessary to scarify the subgrade to a depth of eight to twelve inches and to recompact the loosened soil subsequent to a period of drying and aerating. The process of drying and aerating is dependent entirely upon weather conditions, and it would be advisable to limit the work area to a size which can be scarified and compacted the same day to avoid exposure to precipitation. If scarification and aeration do not result in significant drying so that compaction can be accomplished the same day, it must be concluded that the weather is not favorable for the procedure.

Another procedure that can be used to improve a yielding subgrade would be to remove or "undercut" severely disturbed areas to a depth of twelve inches or greater and to fill these areas with a more suitable, compacted soil. This procedure is usually performed during the original site preparation but, if yielding does not become evident until after the subgrade has been exposed to repetitive preliminary paving operations, this procedure would have to be repeated prior to performing the paving work.

Other procedures for improving an unusually weak, wet or severely yielding subgrade include the use of chemical stabilization (lime, lime/fly-ash, cement, etc.). At times, it is possible to use a geogrid or geotextile in conjunction with the aggregate to provide the added support necessary to place the pavement without improving the subgrade. It is not necessarily predicted that the natural soils at this site will yield and become unstable. It is believed, however, that you should be made aware of this phenomenon which can occur even in soils which appear to be exceptionally strong when initially exposed in cuts, and of the advisability of improving a yielding subgrade before constructing pavements.

5.1.4 Chemical Subgrade Modification

Because the subgrade soil encountered in the borings varied from low to highly plastic silty clay (plasticity indices ranging from 11 to more than 30), it is BBCM's opinion that a subgrade modification program incorporating only lime as the chemical additive may not provide a uniform level of subgrade improvement in all of the proposed pavement widening areas. A chemical additive capable of improving more silty/sandy subgrade materials may also be desirable. Such additives (flyash, cement, etc.) in combination with lime may provide effective improvement for the variable soil types encountered in the borings for this project, however, BBCM strongly recommends that a laboratory testing program be performed to determine whether sufficient improvement may be provided for each of the soil types encountered in the borings.

5.1.5 Groundwater Considerations for Roadway Construction

Based upon observations made at the time of this investigation, significant groundwater problems are not anticipated in connection with the proposed roadway construction.

The roadway subgrade should be graded to prevent surface runoff from pooling on the cohesive soils during construction as exposure of cohesive soils to moisture will result in a decrease in strength and an increase in compressibility. The cohesive soils encountered in the borings performed for this project, if exposed to inclement weather or rainfall, may rapidly absorb additional moisture and weaken. It is imperative that these soil types not be exposed to rainfall while in a loosened state (such as during disking and drying for moisture conditioning). Should these materials become sufficiently saturated that moisture conditioning is impractical, the material should be wasted. Therefore, it is recommended that moisture conditioning only be performed when extended periods of suitable weather are anticipated, and that only the amount of borrow soil be exposed that may be moisture conditioned and properly compacted during suitable weather periods.

In addition to proper subgrade grading, BBCM recommends that the pavement design include surface and subsurface drainage measures. Water which infiltrates the pavement and remains trapped within the pavement components during traffic loading is a leading cause of premature pavement failure. Effective design measures include the use of perimeter edge drains, curbs, or a combination of these features to collect surface water runoff from areas adjacent to the pavement.

5.2 Pavement Subgrade Evaluation

The subgrade is defined as the natural or prepared soil surface which is the foundation for the pavement system. The pavement support characteristics of the subgrade are generally a function of the soil type and condition of the soil located within three to five feet of the subgrade surface. Most of the borings performed during this investigation encountered cohesive soils and the proposed subgrade elevations, and laboratory testing indicates that these soil types may be considered as having generally "poor" subgrade support characteristics.

5.2.1 Recommended Subgrade Support Parameters

Based on the results of the laboratory testing program, it is recommended that the following values be used for to design the new pavement sections for Emerald Parkway, Bright Road, and Riverside Drive:

California Bearing Ratio (CBR): 4%
Resilient Modulus (M_R): 4,800 psi
Modulus of Subgrade Reaction (k): 120 pci

These subgrade support values may be used during the pavement design for this project provided that the entire proposed pavement subgrade is prepared in strict accordance with Item 204 of the 2008 ODOT "Construction and Materials Specifications" (CMS), and the recommendations presented in this report.

This subgrade evaluation also assumes that the subgrade for the new roadways is composed of the materials encountered in the borings. If, at the time of construction, it is determined that the subgrade may consist of materials significantly different than those encountered, the pavement design subgrade criteria should be reviewed and, if necessary, modified.

Implementing these subgrade support parameters will also require that all borrow soil placed within 3 feet of the final subgrade level is capable of providing subgrade support parameters no lower than the above values. For this reason, BBCM suggests inclusion of the following notes in the General Notes of the project plans under the subheading associated with embankment construction:

All borrow soil placed within 3 feet of the final subgrade level must be capable of providing subgrade support parameters no lower than the values used to design the new pavement. Prior to commencing the construction of new fill embankments, representative bulk samples of each type of proposed earthen borrow soil shall be obtained and tested in the laboratory (ASTM D 1883/AASHTO T 193) to verify that the potential borrow soil is capable of providing a California Bearing Ratio (CBR) value equal to or greater than 4% in a properly compacted state.

5.2.2 Emerald Parkway - STA 171+00 to Approximate STA 181+00

In the event that some cost savings may be realized, consideration may be given to specifying a different pavement section for this portion of Emerald Parkway, where limestone bedrock is anticipated at the proposed subgrade elevation.

Provided that the bedrock anticipated at the proposed subgrade level is overexcavated in accordance with ODOT Item 204.05, and the overexcavation is backfilled with properly compacted select granular material (ODOT Item 703.16.C.2 Granular Material Type B (Item 304) as discussed in Section 5.1.1.2 of this report, consideration may be given to utilizing the following subgrade support values during design the new pavement section **for this portion of Emerald Parkway only:**

CBR: 20%
 M_R : 24,000 psi
k: 300 pci

Implementing these subgrade support parameters will also require that the uppermost 5 feet of all backfill materials placed in utility trench excavations below the planned subgrade elevation also consist of properly compacted ODOT Item 703.16.C.2 Granular Material Type B.

5.3 Proposed Sanitary Sewer

BBCM understands that the proposed sanitary sewer is to be approximately 5,000 feet long and generally parallel the proposed Emerald Parkway alignment. Based on the profile information for the proposed sanitary sewer provided by B&N, the sewer is to have an invert level ranging from 5 to 20 feet below the proposed Emerald Parkway profile, which is roughly 10 to 25 feet below the existing ground surface at this site.

Based on the results of the borings, it is anticipated that excavations for the proposed sanitary sewer will encounter both cohesive and granular soil, and also limestone and shale bedrock. Concerns regarding sewer installation are as follows:

- ▶ sloughing and caving of the trench walls during construction;
- ▶ the presence of rock at invert elevations; and,
- ▶ the location of the groundwater table.

These items are discussed in the following sections.

5.3.1 Excavation Conditions

The borings encountered both cohesive and granular soil above the underlying bedrock at this site. Although discontinuous deposits of granular soils were encountered along the entire length of this project, the borings encountered larger quantities of granular soils in Borings B-6 through B-9 at elevations both above and below the planned sewer invert. The borings also noted significant quantities of groundwater in Borings B-8 through B-14.

Hard limestone bedrock was encountered roughly 3 to 20 feet above the proposed sewer invert in Borings B-1 through B-6. Additionally, very-soft to medium-hard gray and dark-gray shale was encountered approximately 3 to 10 feet above the proposed invert elevation in Borings B-9, B-12 through B-14, and also just below the invert in Boring B-8. As such, the contractor should be prepared for excavation of both hard limestone and very-soft to medium-hard shale.

RQD values (see Plate 6 of the Appendix for an explanation) varied from 0 to 93% in the limestone, and from 0% to 40% in the shale. Ten unconfined compressive strength tests were performed on portions of the recovered limestone bedrock. The results of these tests ranged from 5,760 psi to 18,959 psi (average = 12,774 psi).

It should be emphasized that **a direct correlation should not be made between the performance of the drilling rig and the ability of construction equipment to excavate bedrock.** It is recommended that the contractor perform test pit excavations using the same equipment as that to be used during actual construction to better define the limits/capabilities of the equipment with regard to rock excavation. It is also known that on the opposite side of the Scioto River blasting was required to break up the bedrock and allow for removal.

5.3.2 Trench Wall Behavior and Support

Sloughing and caving should be expected for unbraced excavations, not only where granular soils are present, but also where layers of weaker cohesive soils, zones of cohesive soil containing seams and lenses of granular soils, or seepage/groundwater zones are encountered.

All excavations should be sloped back or braced in accordance with the most recent OSHA excavation rules and regulations.

If there are any existing underground utilities or structures within the influence zone of an open-cut trench for the proposed Emerald Parkway sewer, the existing structure/utility may be subjected to lateral movements if excavations for the new sanitary sewer are not fully braced. The influence zone of a trench excavation may be determined by extending an imaginary line from the base of the excavation to the ground surface using an inclination of approximately 45 degrees with the horizontal. Therefore, if the lateral distance to and depth of the existing utility are known, a determination may be made as to whether the adjacent underground utility is in the zone which may be affected by the proposed excavation. The risk of lateral movement within the influence zone increases with both the length of the excavation and the time the trench remains open. Thus, requiring the contractor to limit the length of open trench excavation to that which can be backfilled same day as the excavation would help reduce the risk of lateral movement of the trench side walls.

Where other existing underground utilities or structures are located within the potential influence zone and there is no tolerance for potential lateral movement, BBCM recommends that the trench excavations be directly braced at the time of the excavation. To be effective, the bracing must be designed to minimize deflection along the entire excavation height and be constructed "tight" against the retained soil, such as sheeting driven prior to excavation with bracing added as the excavation is lowered. If lateral movement cannot be tolerated, a bracing system cannot be installed after the excavation is made.

5.3.3 Pipe Support

The currently planned invert of the proposed sewer ranges from 5 to 20 feet below the proposed Emerald Parkway profile, which is roughly 10 to 25 feet below the existing ground surface. Based on the results of the borings, the soil and bedrock encountered at these depths should provide adequate support for the sewer pipe. In general, the soil and bedrock excavated weigh more than the pipe to be installed, so that bearing should be adequate and settlement minimal.

If areas of weak cohesive or loose granular soil are encountered at the invert elevation, then overexcavations may be required. These types of soils may also be sensitive to disturbance during excavation, especially in the presence of water. If zones of unsuitable soil are encountered at the proposed invert elevations, or if the soil becomes disturbed by construction activities, it is recommended that the disturbed materials be overexcavated and backfilled with a compacted granular bedding material, such as No. 57 or No. 2 stone. If deemed necessary, a mud mat consisting of several inches of a lean concrete may also be placed. The typical required granular bedding material may then be placed on top of the stone backfill or mud mat.

In areas where bedrock is present at the invert elevation, it is imperative that sufficient granular bedding material is provided to avoid a point-load situation from the pipe bearing directly over bedrock. The typically specified zone of granular bedding should be sufficient to provide a soil zone between the bedrock and bottom of pipe.

5.3.4 Backfill Recommendations

Any fill placed in utility trenches located beneath or within the zone of influence of pavement or buildings/structures should be placed and compacted in accordance with ODOT Item 203,

"Embankment Compaction", of the current ODOT *Construction and Material Specifications*, or Item 204 when within 12 inches of the proposed subgrade level. For utility trenches lying outside the zone of influence of pavement loads and any future building/structure loads, consideration may be given to specifying that trench backfill may be compacted to a dry unit weight no less than 95% of the maximum dry unit weight as determined by ASTM D698. Regardless of the compactive effort applied, BBCM recommends that the moisture content of all backfill be maintained between -2% to +2% of the optimum moisture content during all compaction operations.

Except for the portion of Emerald Parkway between STA 171+00 and STA 181+00, native materials from the trench excavations, with the exception of shale bedrock, may be considered for re-use as backfill for utility trenches lying outside the zone of influence of either existing pavement and structure loads, or any future construction. BBCM does not recommend that excavated shale be re-used as fill or backfill within the trenches. All soil used as new fill or backfill within 3 feet of the proposed subgrade level of Emerald Parkway must be capable of providing subgrade support characteristics in a final compacted state that are no less than the value used for the design of new pavement (see "Pavement Subgrade Evaluation" section on page 10 of this report).

If the pavement section of the portion of Emerald Parkway between STA's 171+00 and 181+00 is designed using a CBR value of 20% (see Section 5.2.2 of this report), BBCM recommends that the uppermost 5 feet of all backfill materials placed in utility trench excavations below the planned subgrade elevation consist of properly compacted ODOT Item 703.16.C.2 Granular Material Type B.

5.3.5 Groundwater Considerations

In the borings performed along the proposed sewer alignment, groundwater only encountered during drilling in Borings B-8 through B-14. Extended groundwater measurements were not taken in any of the borings, but at the completion of drilling, groundwater had accumulated in these borings to between the depths of 2.7 and 16.2 feet below the ground surface. Based on these observations, it should be anticipated that groundwater will be encountered during trench excavation and pipe installation.

If a system of sumps and pumps cannot sufficiently maintain the water level below the invert elevation, then more extensive dewatering techniques, such as wells or a well-point system, may be necessary for dewatering. It should be recognized that the lowering of the groundwater table in permeable granular strata will influence the water level of the aquifer in the surrounding area, and the water supply to nearby shallow wells might be temporarily affected. Also, a significant lowering of the water table can cause subsidence in the nearby soils. Such issues should be considered if dewatering of a large area will be required.

The presence of water in trenches, coupled with construction activity, will soften and weaken any cohesive soils, and these disturbed zones might cause settlement beneath the pipe following backfilling. Therefore, the trench bottom should be kept free of standing water and any soft/weak or disturbed cohesive soils should be removed and replaced with stone or a mud mat as described in the Pipe Support section of this report.

5.4 Billingsley Ditch Culvert

5.4.1 Available Information

As part of this roadway construction project, it is understood that a new three-sided precast concrete culvert will be constructed to carry Emerald Parkway over Billingsley Ditch. Based on preliminary information provided by B&N, we understand that the culvert will have an approximate 20-foot span, be founded at approximate Elevation 873, and have approximately 10 feet of soil cover between the top of the culvert and Emerald Parkway. B&N has also indicated that the flowline of the ditch at the proposed culvert location is roughly Elevation 877.

5.4.2 Scour Zone Information for Billingsley Ditch

Grain-size distribution testing was performed on 4 soil samples recovered from below the existing streambed level in Borings C-1 and C-2. The results of these tests are summarized in Table 1 below.

TABLE 1: Scour Zone Gradation Information - Billingsley Ditch Culvert

Boring No.	Sample Depth (ft.)	Sample Elevation	D ₅₀ (mm)	D ₉₅ (mm)
C-1	6.0' - 7.5'	871.9 - 873.4	0.0313	4.1613
	11.0' - 12.5'	866.9 - 868.4	0.0320	4.0066
C-2	3.5' - 5.0'	872.4 - 873.9	0.0311	3.1243
	8.5' - 10.0'	867.4 - 868.9	0.0191	7.4216

5.4.3 Culvert Foundations

Borings C-1 and C-2 encountered hard brown and gray clayey silt at the proposed spread foundation bearing level (El. 873), which is approximately four feet below the existing flow line of Billingsley Ditch. BBCM recommends that spread foundations bearing on this material at or below Elevation 873 be designed using a maximum allowable unit bearing pressure of 4,000 pounds per square foot (psf).

BBCM also recommends that spread foundations for the culverts and any wingwalls bear at least 12 inches below the bottom elevation of any rip rap placed for scour protection, or at a depth in accordance with frost depth requirements, whichever elevation is the lowest. It is also recommended that continuous strip footings have a minimum width of 24 inches and that sufficient longitudinal reinforcing steel be included to strengthen continuous footings against any abrupt differential settlements. Footings designed in accordance with these recommendations should exhibit a factor of safety of at least 3 against bearing capacity failure.

Undisturbed samples and laboratory consolidation testing for site specific settlement analyses were not included in the scope of this investigation. However, based on our local experience, the relatively strong or dense glacial till soils encountered at this culvert site typically exhibit only minor settlement and deflection under the loads similar to those anticipated for the culvert. Although a detailed analysis was not performed, but assuming proper construction techniques

are implemented, BBCM would estimated differential settlement to be less than one-half inch and total settlement ranging from one-half to one inch.

As these recommendations have been based on the currently available preliminary information, BBCM requests the opportunity to review the final proposed foundation design for the replacement culvert included in this project prior to the submission of the project plan sheets to the Owner. BBCM also strongly recommends that the foundation excavations be observed by the Geotechnical Engineer of Record or the Engineer's designated representative to verify suitable bearing conditions are present prior to the placement of concrete.

5.4.5 Sliding Resistance

Any unbalanced lateral loads acting on the wingwall foundations may be resisted by sliding friction developed along the interface of the bottom of the footing and the underlying soil. A coefficient of friction of 0.35 is recommended for evaluation of the ultimate frictional resistance developed between the base of the footings and the clayey silt soil encountered at the foundation bearing elevation (873) proposed by B&N..

5.4.6 Lateral Earth Pressures

The proposed replacement culvert and any associated wingwalls must be designed to withstand lateral earth pressures, as well as hydrostatic pressures, that may develop behind the walls. The magnitude of the lateral earth pressures varies on the basis of soil type and permissible wall movement.

To minimize lateral earth pressures the zone behind the walls and structure should be backfilled with granular soil, and the backfill should be effectively drained. For effective drainage, a zone of free-draining gravel, such as ODOT Item 703 (No. 57 stone), should be used directly behind the structures for a thickness of at least 2 feet along practically the entire height of the structures. This granular zone should be drained to either weepholes or a pipe drain, so that hydrostatic pressures do not develop against the walls. The type of backfill beyond the granular zone will, however, govern the magnitude of the pressure to be used for structural design. Pressures of a relatively low magnitude will be developed by the use of granular backfill, whereas a cohesive (clay) backfill will result in creep and the development of much higher pressures with time.

It is recommended that granular backfill be used in excavations next to the structure and wingwalls. The backfill should be placed in a wedge formed by the back of the structure and a line rising from the base of the structure footings at an angle no greater than 60° from the horizontal. Granular backfill behind the structures should be compacted in accordance with Item 203.07, *Compaction and Moisture Requirements*, of the ODOT Construction and Material Specifications. Overcompaction in areas directly behind the walls should be avoided as this might cause damage to the structure.

If the culvert design incorporates proper drainage with granular backfill that is compacted as specified, an equivalent fluid unit weight of 40 lb/ft³ may be used provided wall movement equivalent to 0.25 percent of the height (H) of the culvert or wingwall is allowed to occur. Such movement is considered sufficient to mobilize an active earth pressure condition. Without proper drainage, but with the permissible movement, an equivalent fluid unit weight of 80 lb/ft³ should be used for design.

If, however, the movement of the walls of the culvert are restricted to less than 0.25 percent of the height of the culvert or wingwall, BBCM recommends that the culvert be designed using an "at rest" equivalent fluid unit weight of 50 pounds per cubic foot (lb/ft³). If proper drainage is not provided, an "at rest" equivalent fluid unit weight of 90 lb/ft³ is recommended for use during design.

Compacted cohesive materials tend alternatively to shrink, expand and creep over periods of time and create significant lateral pressures on any adjacent structures. Because of the long-term adverse effects, it is recommended that, if proper drainage is provided, an equivalent fluid unit weight of 105 lb/ft³ may be used for design of the replacement structure to resist the lateral loads imparted by drained, cohesive backfill.

The replacement structure should also be designed to withstand the vertical load resulting from the weight of the fill and pavement to be placed over the structure. To estimate vertical loading on the culvert, a total unit weight of 125 lb/ft³ may be used for compacted, cohesive soil and 135 lb/ft³ for compacted, granular soil. The surcharge effect of the traffic crossing the structure should also be considered when designing the structure and any wingwalls.

5.4.7 Scour Countermeasures

It is imperative that all foundations for the proposed structure and any wingwalls be protected from erosion of soil by scour during periods of elevated flow. If rock channel protection (rip rap) is to be utilized, it is recommended that foundations be protected from the flow during the design event using, as a minimum, rip rap of a size and layer thickness in accordance with Section 203.3, "Scour", of the ODOT "Bridge Design Manual."

Rip rap should be placed in a continuous manner so that no portions of the foundations or stream banks below the design storm water surface are exposed to elevated water flow. Rip rap is not a permanent or absolute countermeasure against, nor does it totally eliminate the potential for scour. Therefore, specifications which include the use of rip rap must also contain provisions for routine maintenance of the rip rap blanket so that the design blanket thickness is preserved over the design life of the structure. Additionally, in all cases where rip rap is used for scour control, the structure should be monitored during and inspected after periods of high flow.

5.4.8 Foundation Construction

BBCM recommends that the sides and bottoms of all excavations be closely monitored by the Geotechnical Engineer of Record or the designated representative during the construction of the culvert. If the soil at the bottom of an excavation becomes disturbed or softened by construction activity or channel flow, it is recommended that the disturbed material be removed and the excavation lowered to stronger, more suitable soils. Localized sheeting and continuous dewatering, in conjunction with stream diversion, may aid in minimizing disturbance of the soil at the foundation bearing elevation.

Where disturbed or otherwise unsuitable foundation soils are overexcavated, BBCM recommends that the overexcavation be backfilled with select granular fill such as ODOT Item 703.11 Type 3 Structural Backfill, or Item 703.16.E.5 Granular Material Type E (#2 or #57 stone), which may be properly compacted in the presence of water. This backfill should be placed and compacted in accordance with ODOT Item 203.07. Alternatively, overexcavated

foundations may be backfilled with a lean concrete mix provided that a dewatered and dry overexcavation may be maintained.

It should also be emphasized that the walls of all excavations should be either braced or sloped back at a safe angle in accordance with current OSHA excavation regulations.

5.4.9 Groundwater Considerations

Long-term observations were not made, but it is believed that the groundwater level will be approximately the same as and vary with the level of water in the ditch. Some seepage may emanate from granular seams or zones encountered in excavations above the level of water in the ditch; however, the quantity of water is anticipated to be limited and may likely be controlled by bailing or with portable pumps.

All excavations for the proposed structure and wingwall foundations should be protected from stream, groundwater, and storm water flow. This may require that the stream be diverted through a temporary pipe or by driving sheeting between the foundation excavations and the stream flow. Even with stream flow diversion, provisions for continuous pumping from sumps should be made for the larger groundwater flows that may be encountered in excavations extending below the level of water in the stream.

6.0 FINAL CONSIDERATIONS

The contents of this report are also based on the subsurface conditions as they existed at the time of our field investigation, and further on the assumption that the exploratory borings are representative of actual subsurface conditions between and beyond the borings might differ from those encountered at the boring locations. If subsurface conditions are encountered during construction that vary from those discussed in this report, BBCM should be notified immediately so that we may evaluate the effects, if any, on design and construction.

As the recommendations presented in this report have been based on the preliminary information provided by B&N, BBCM requests that we be given the opportunity to review the final foundation plans for these structures and verify that the intent of our recommendations has been followed and, if necessary, revise the recommendations presented in this document. Additionally, during site preparation, foundation excavations, fill placement, compaction/proofrolling operations, and concrete placement, it is recommended that a representative from our office be on-site to verify that our design recommendations are met and that the subsurface conditions are similar to those encountered in our borings. BBCM cannot assume responsibility or liability for the adequacy of recommendations if BBCM is not retained to review the final plans and observe construction.

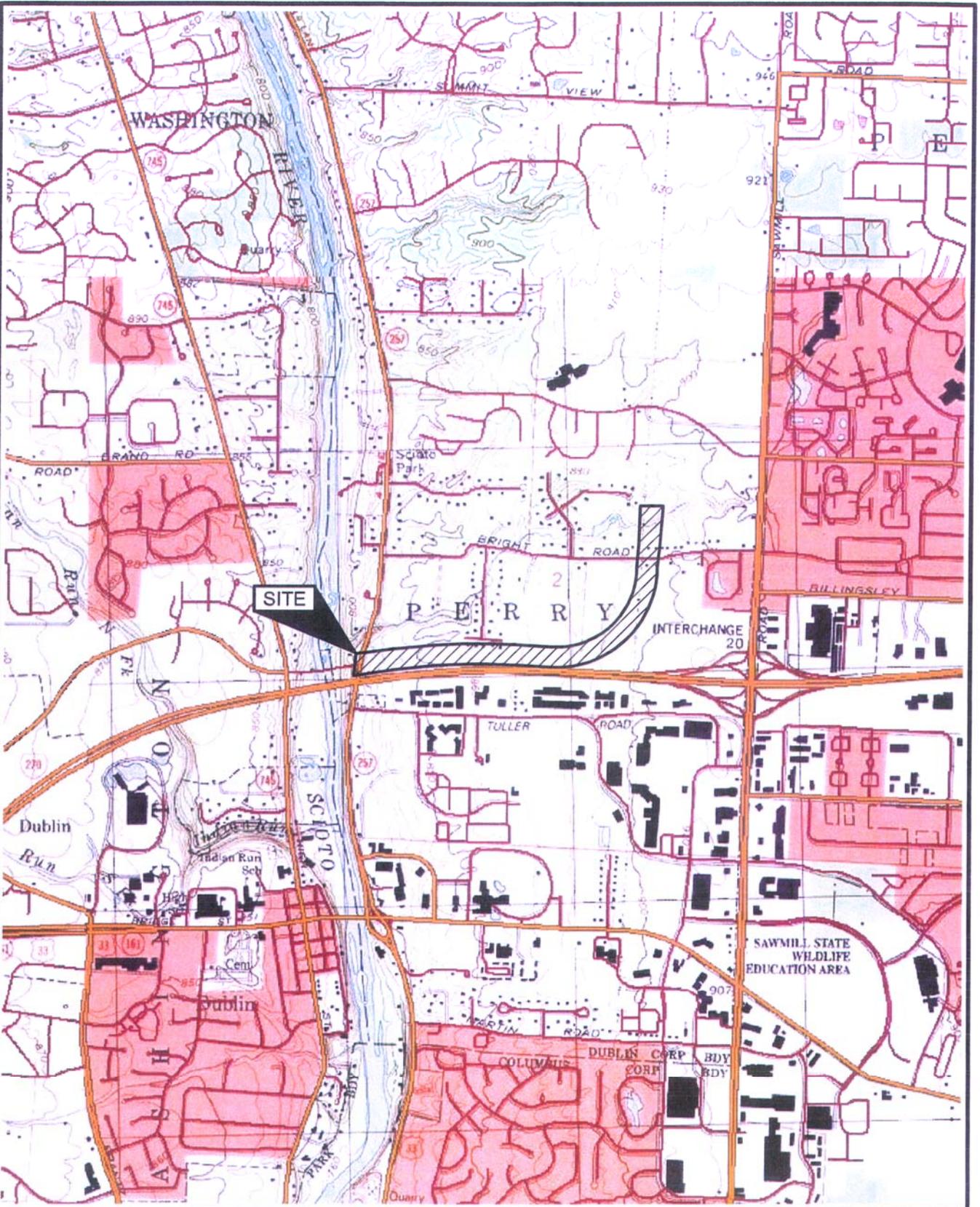
APPENDIX

Images: ~ TOPOGRAPHIC

Xrefs:
File Last Updated: Jul 06, 2009

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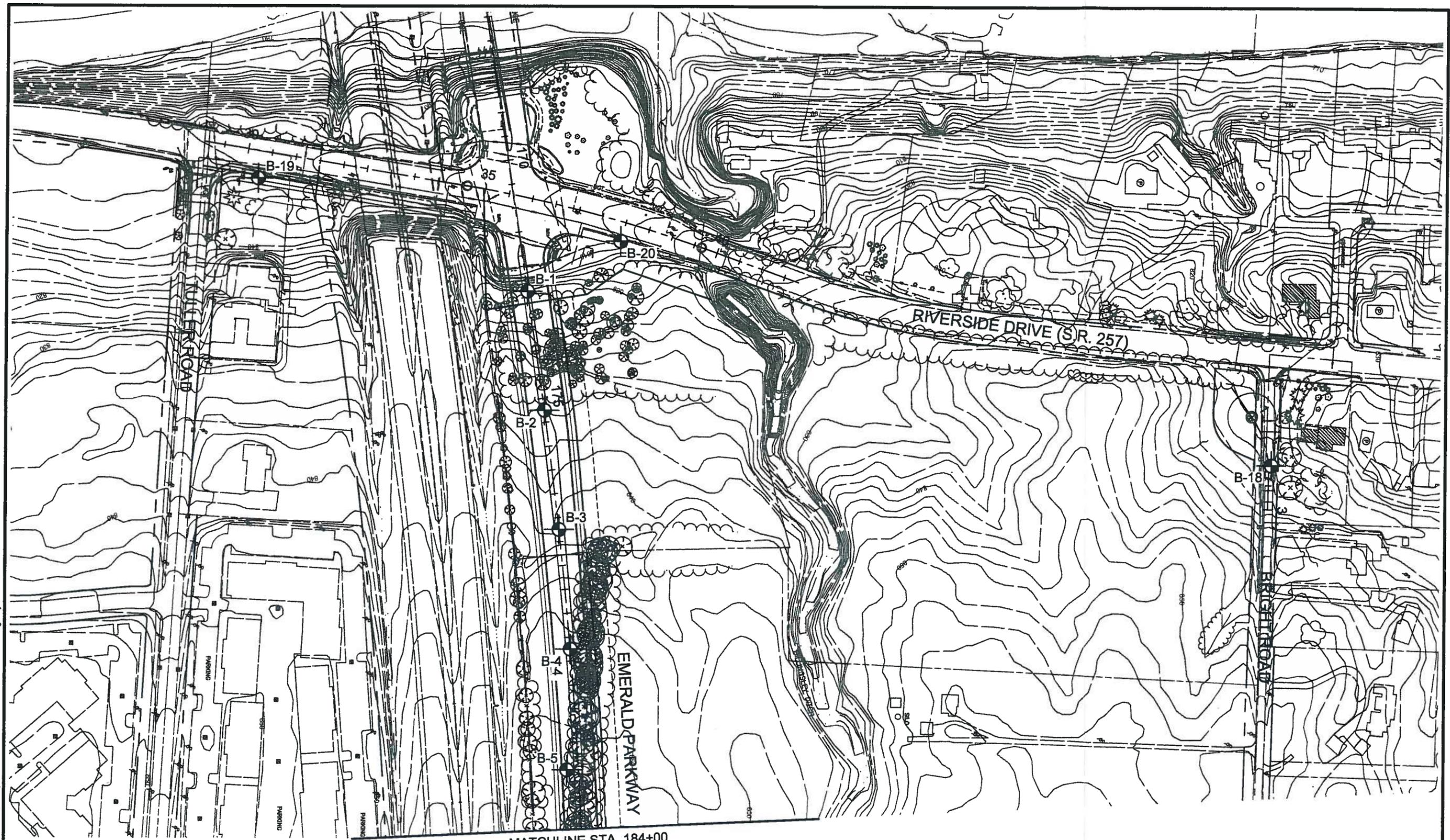
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Northwest Columbus Quad

VICINITY MAP		
EMERALD PARKWAY - PHASE 8 DUBLIN, OHIO		
Project: 011-12300-T00	Drawn By: TJM	
Drawing Date: 7-6-09	Approved By: NDA	
Last Updated: 7-6-2009	Scale: 1" = 2000'	1:1



Columbus (614) 793-2226
Cleveland (216) 901-1000
Cincinnati (513) 771-8471
Dayton (937) 424-1011

Images:
 Xrefs:
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MATCHLINE STA. 184+00
 SEE PLATE 3

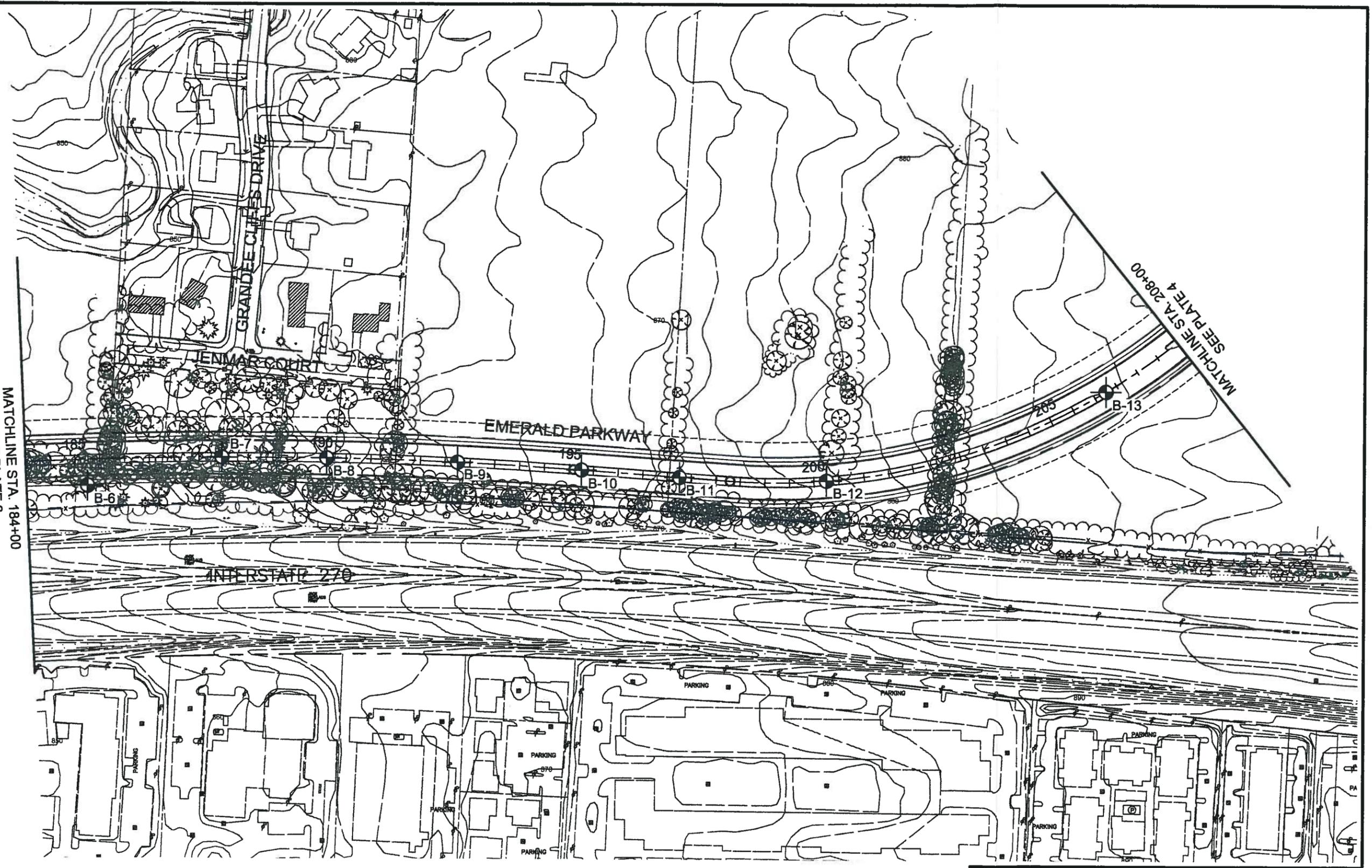
LEGEND

 B-1
 BORING NUMBER
 AND LOCATION

PLAN OF BORINGS			
EMERALD PARKWAY - PHASE 8 DUBLIN, OHIO			
Project: 011-12300-T00	Drawn By: TJM	 Columbus (614) 793-2226 Cleveland (216) 801-1000 Cincinnati (513) 771-8471 Dayton (937) 424-1011	
Drawing Date: 7-6-09	Approved By: NDA		
Last Updated: 7-6-2009	Scale: 1" = 200'		

Images:
 Xrefs:
 File Last Updated: Jul 06, 2009
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MATCHLINE STA. 184+00
 SEE PLATE 2



LEGEND

B-1
 BORING NUMBER
 AND LOCATION

PLAN OF BORINGS

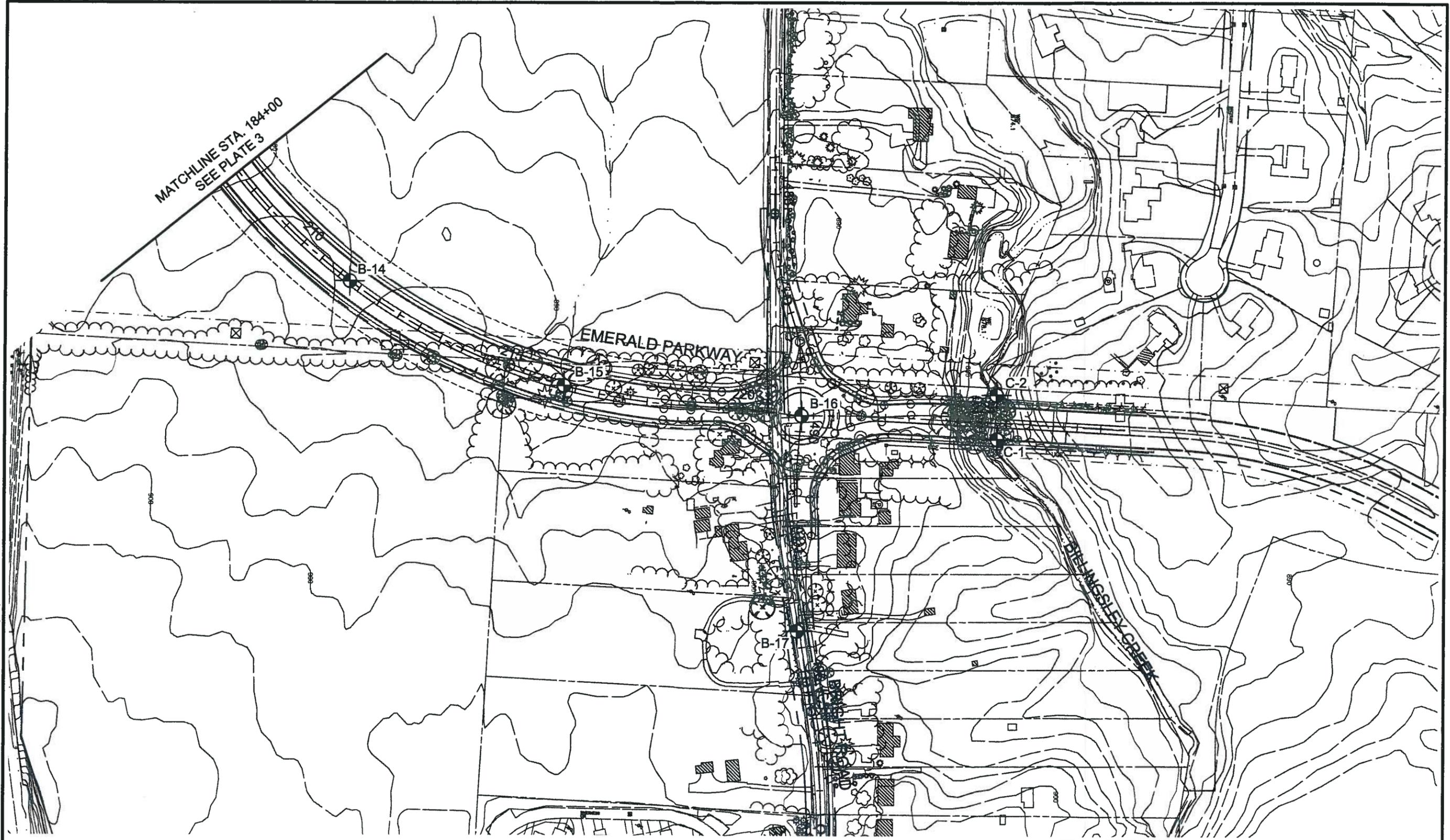
**EMERALD PARKWAY - PHASE 8
 DUBLIN, OHIO**

Project: 011-12300-T00	Drawn By: TJM
Drawing Date: 7-6-09	Approved By: NDA
Last Updated: 7-6-2009	Scale: 1" = 200'

BBCM
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MATCHLINE STA. 184+00
SEE PLATE 3



Images:
Xrefs:
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LEGEND

 B-1
BORING NUMBER
AND LOCATION

PLAN OF BORINGS

EMERALD PARKWAY - PHASE 8
DUBLIN, OHIO

Project: 011-12300-T00	Drawn By: TJM
Drawing Date: 7-6-09	Approved By: NDA
Last Updated: 7-6-2009	Scale: 1" = 200'

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EXPLANATION OF SYMBOLS AND TERMS USED ON BORING LOGS FOR SAMPLING AND DESCRIPTION OF SOIL

SAMPLING DATA

-  - Blocked-in "SAMPLES" column indicates sample was attempted and recovered within this depth interval.
-  - Sample was attempted within this interval but not recovered.
- 2/5/9 - The number of blows required for each 6-inch increment of penetration of a "Standard" 2-inch O.D. split-barrel sampler, driven a distance of 18 inches by a 140-pound hammer freely falling 30 inches. The raw "blowcount" or "N" is equal to the sum of the second and third 6-inch increments of penetration. Addition of one of the following symbols indicates the use of a split-barrel other than the 2" O.D. sampler:
 - 2S - 2½"O.D. split-barrel sampler
 - 3S - 3" O.D. split-barrel sampler
- N₆₀ - Corrected Blowcount = [(BBCM Drill Rod Energy Ratio) / (0.60 Standard)] X N_{raw}
- P - Shelby tube sampler, 3" O.D., hydraulically pushed.
- R - Refusal of sampler in very-hard or dense soil, or on a resistant surface.
- 50-2" - Number of blows (50) to drive a split-barrel sampler a certain number of inches (2), other than the normal 6-inch increment.
- SD - Split-barrel sampler (S) advanced by weight of drill rods (D).
- SH - Split-barrel sampler (S) advanced by combined weight of rods and drive Hammer (H).

SOIL DESCRIPTIONS

All soils have been classified basically in accordance with the Unified Soil Classification System, but this system has been augmented by the use of special adjectives to designate the approximate percentages of minor components, as follows:

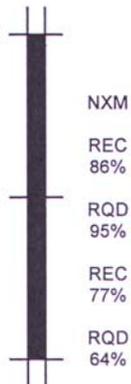
<u>Adjective</u>	<u>Percent by Weight</u>
trace	1 to 10
little	11 to 20
some	21 to 35
"and"	36 to 50

The following terms are used to describe density and consistency of soils:

<u>Term (Granular Soils)</u>	<u>Blows per foot (N₆₀)</u>
Very-loose	Less than 5
Loose	5 to 10
Medium-dense	11 to 30
Dense	31 to 50
Very-dense	Over 50
<u>Term (Cohesive Soils)</u>	<u>Qu (tsf)</u>
Very-soft	Less than 0.25
Soft	0.25 to 0.5
Medium-stiff	0.5 to 1.0
Stiff	1.0 to 2.0
Very-stiff	2.0 to 4.0
Hard	Over 4.0

EXPLANATION OF SYMBOLS AND TERMS USED ON BORING LOGS FOR SAMPLING AND DESCRIPTION OF ROCK

SAMPLING DATA



When bedrock is encountered and rock core samples are attempted, the "SAMPLING EFFORT" column is used to record the type of core barrel used (NXM), the percentage of core recovered (REC) for each run of the sampler, and the Rock Quality Designation (RQD) value. Rock-core barrels can be of either single- or double-tube construction, and a special series of double-tube barrels, designated by the suffix M, is commonly used to obtain maximum core recovery in very-soft or fractured rock. Three basic groups of barrels are used most often in subsurface investigations for engineering purposes, and these groups and the diameters of the cores obtained are as follows:

AX, AW, AXM, AWM	-	1-1/8 inches
BX, BW, BXM, BWM	-	1-5/8 inches
NX, NW, NXM, NWM	-	2-1/8 inches

Rock Quality Designation (RQD) is expressed as a percentage and is obtained by summing the total length of all core pieces which are at least 4 inches long and then dividing this sum by the total length of core run. It has been found that there is a reasonably good relationship between the RQD value and the general quality of rock for engineering purposes: This relationship is shown as follows:

<u>RQD - %</u>	<u>General Quality</u>
0 - 25	Very-poor
25 - 50	Poor
50 - 75	Fair
75 - 90	Good
90 - 100	Excellent

ROCK HARDNESS

THE FOLLOWING TERMS ARE USED TO DESCRIBE ROCK HARDNESS:

<u>Term</u>	<u>Meaning</u>	<u>Mohs' Hardness</u>
Very-soft	Rock such as shale can be easily picked apart by the fingers. Sandstone is poorly cemented and very friable. The rock resembles hard clay or dense sand, but has rock structure.	Less than 1
Soft	Rock such as shale, siltstone or limestone can be scratched or powdered by fingernail pressure. Sandstone is mostly poorly cemented, and individual sand grains can be separated from the main rock mass by a fingernail.	1 to 1½
Medium-hard	Rock cannot be scratched by a fingernail, but can be powdered by a knife. Sandstone is mostly well cemented, but individual grains can be removed by scratching with a knife.	2½ to 5½
Hard	Rock is well cemented and cannot be powdered by a knife. Rock can be powdered by a steel file.	5½ to 6½
Very-hard	Rock cannot be scratched by a steel file and the core sample rings when struck with a hammer.	Greater than 6½

**LOG OF BORING NO. B-1
EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO**



LOCATION: (Emerald Pkwy.) STA 172+75, on Centerline ELEVATION: 820.0 DATE: 6/2/09
 DRILLING METHOD: 3-1/4" I.D. Hollow-stem Auger COMPLETION DEPTH: 25.0'
 SAMPLER(S): 2" O.D. Split-barrel Sampler, NQ Rock Core Barrel

NEW DEFAULT BORING LOG-W/ N60 112300T00.GPJ BBCM.GDT 7/31/09

ELEV.	DEPTH, FEET	SAMPLE NUMBER	SAMPLE EFFORT	N ₆₀	SAMPLE REC-%	DESCRIPTION	NATURAL CONSISTENCY INDEX				TEST RESULTS
							NATURAL MOISTURE CONTENT				
	0						PLASTIC LIMIT	LIQUID LIMIT			
819.4	0					TOPSOIL - 7 INCHES	10	20	30	40	
818.0						Stiff (est.) brown silty clay, some fine to coarse sand.					
	1	50-1"R			100	Hard gray limestone, massive bedding, many horizontal and diagonal fractures, few vertical fractures, few stylolites, few fossils, few clay-filled fractures between 3.6' and 7.4'. - From 19.65' - 20.15': Unconfined Compression Strength = 10,110 psi. - From 22.65' - 23.15': Unconfined Compression Strength = 5,760 psi. - Encountered rock at 2.0'. - Encountered auger refusal at 3.5'. - Upon removal of the outer core barrel after coring to 25 feet, all coring water was lost from the bore hole.					
	2	RQD 0%			94						
	3	RQD 15%			100						
	4	RQD 23%			100						
	5	RQD 47%			98						
	6	RQD 54%			93						
795.0	25										
	30										

WATER LEVEL: ∇ "Dry"
 WATER NOTE: Prior to coring
 DATE: 6/2/09

SYMBOLS USED TO INDICATE TEST RESULTS

G - Gradation	} See Separate Curves	H - Penetrometer (tsf)
Q - Uncon Comp		W - Unit Dry Wt (pcf)
T - Triax Comp		D - Relative Dens (%)
C - Consol.		

Drill Rod Energy Ratio: 0.82
 Last Calibration Date: 11/19/07
 Drill Rig Number: D50

**LOG OF BORING NO. B-2
EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO**



LOCATION: (Emerald Pkwy.) STA 175+25, on Centerline ELEVATION: 833.4 DATE: 6/2/09 - 6/3/09
 DRILLING METHOD: 3-1/4" I.D. Hollow-stem Auger COMPLETION DEPTH: 25.5'
 SAMPLER(S): 2" O.D. Split-barrel Sampler, NQ Rock Core Barrel

NEW DEFAULT BORING LOG-W/ N60 112300T00.GPJ BBCM.GDT 7/31/09

ELEV.	DEPTH, FEET	SAMPLE NUMBER	SAMPLE	SAMPLE EFFORT	N ₆₀	SAMPLE REC-%	DESCRIPTION	NATURAL CONSISTENCY INDEX				TEST RESULTS
								NATURAL MOISTURE CONTENT				
								PLASTIC LIMIT	LIQUID LIMIT			
832.8	0						TOPSOIL - 7 INCHES	10	20	30	40	
	1		9 1/2 / 12 / 10		30	40	Medium-dense brown fine to coarse sand, some fine to coarse gravel (limestone fragments), little to some silty clay, contains cobble and boulder-sized limestone fragments.					
825.9							Hard gray limestone, massive bedding, many horizontal and diagonal fractures, few fossils, few stylolites, few solution cavities, few re-cemented fractures.					
	2		50.0"R RQD 11%			89	- Water return fluctuated between 11' and 12'.					
	3		RQD 41%			100	- From 10.25' - 10.75': Unconfined Compression Strength = 13,576 psi.					
	4		RQD 65%			100	- From 14.75' - 15.25': Unconfined Compression Strength = 9,440 psi.					
	5		RQD 69%			100						
808.4	25						- Encountered apparent bedrock at 7.5'. - Encountered auger refusal at 8.0'. - Encountered large cobble/boulder from 2.0' to 3.0'.					

WATER LEVEL: ∇ "Dry" 7.7
 WATER NOTE: Prior to coring After HSA pulled
 DATE: 6/2/09 6/2/09

SYMBOLS USED TO INDICATE TEST RESULTS

G - Gradation	See Separate Curves	H - Penetrometer (tsf)
Q - Uncon Comp		W - Unit Dry Wt (pcf)
T - Triax Comp		D - Relative Dens (%)
C - Consol.		

Drill Rod Energy Ratio : 0.82
 Last Calibration Date : 11/19/07
 Drill Rig Number : D50

**LOG OF BORING NO. B-3
EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO**



LOCATION: (Emerald Pkwy.) STA 177+75, on Centerline ELEVATION: 840.1 DATE: 6/3/09
 DRILLING METHOD: 3-1/4" I.D. Hollow-stem Auger COMPLETION DEPTH: 25.0'
 SAMPLER(S): 2" O.D. Split-barrel Sampler, NQ Rock Core Barrel

8 NEW DEFAULT BORING LOG-W\N60 112300T00.GPJ BBCM.GDT 7/31/09

ELEV.	DEPTH, FEET	SAMPLE NUMBER	SAMPLE EFFORT	N ₆₀	SAMPLE REC-%	DESCRIPTION	NATURAL CONSISTENCY INDEX				TEST RESULTS
							NATURAL MOISTURE CONTENT				
							PLASTIC LIMIT	LIQUID LIMIT			
839.6	0					TOPSOIL - 6 INCHES					
	1	23	20	49	73	Dense brown fine to coarse gravel (limestone fragments), some fine to coarse sand, little clayey silt, few cobble-sized limestone fragments.					
833.8	2	RQD	0%		100	Hard dark-gray interbedded with gray limestone, nearly horizontally bedded, many horizontal and diagonal fractures, few fossils, contains chert nodules, few fractures re-cemented with calcite.					
	3	RQD	35%		96	- From 10.3' - 10.8': Unconfined Compression Strength = 16,701 psi.					
825.5	4	RQD	71%		100	Hard gray limestone, massive bedding, many diagonal fractures, few re-cemented fractures, few stylolites, few fossils.					
	5	RQD	93%		100	- From 16.8' - 17.3': Unconfined Compression Strength = 9,346 psi.					
	6	RQD	84%		100						
815.1	25					- Encountered cobbles from 1.5' to 2.5'. - Encountered auger refusal at 6.3'.					

WATER LEVEL: ∇ "Dry" ∇ 11.2
 WATER NOTE: Before coring After HSA pulled
 DATE: 6/3/09 6/3/09

SYMBOLS USED TO INDICATE TEST RESULTS

G - Gradation	See	H - Penetrometer (tsf)
Q - Uncon Comp	Separate Curves	W - Unit Dry Wt (pcf)
T - Triax Comp		D - Relative Dens (%)
C - Consol.		

Drill Rod Energy Ratio : 0.82
 Last Calibration Date : 11/19/07
 Drill Rig Number : D50

**LOG OF BORING NO. B-4
EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO**



LOCATION: (Emerald Pkwy.) STA 180+25, on Centerline ELEVATION: 848.0 DATE: 6/3/09 - 6/4/09
 DRILLING METHOD: 3-1/4" I.D. Hollow-stem Auger COMPLETION DEPTH: 20.0'
 SAMPLER(S): 2" O.D. Split-barrel Sampler, NQ Rock Core Barrel

8 NEW DEFAULT BORING LOG-W/ N60 112300T00.GPJ BBCM.GDT 7/31/09

ELEV.	DEPTH, FEET	SAMPLE NUMBER	SAMPLE EFFORT	N ₆₀	SAMPLE REC-%	DESCRIPTION	NATURAL CONSISTENCY INDEX				TEST RESULTS
							NATURAL MOISTURE CONTENT				
	0						PLASTIC LIMIT	LIQUID LIMIT			
847.1						TOPSOIL - 11 INCHES					
						Stiff to very-stiff (est.) brown silty clay, little to some fine to coarse sand, few limestone fragments.					
845.5						Loose to medium-dense dark-brown silt, trace to little clay, trace fine sand, intermixed with gray fine to coarse gravel (limestone fragments).					
	1	4	4	25	53						
	5										
842.0						Hard gray limestone, massive bedding, many diagonal fractures, many chert nodules, few fossils, few fractures re-cemented with calcite.					
	2	RQD 0%			38						
	10	RQD 30%			100						
						- From 12.0' - 12.5': Unconfined Compression Strength = 8,787 psi.					
						- From 13.5' to 14.0': Unconfined Compression Strength = 18,959 psi.					
	15	RQD 41%			100						
	20	RQD 24%			98						
828.0						- Encountered auger refusal at 6.0'.					
	25										

WATER LEVEL: ▽ "Dry" ▽ 4.2
 WATER NOTE: Before coring After HSA pulled
 DATE: 6/3/09 6/3/09

SYMBOLS USED TO INDICATE TEST RESULTS

G - Gradation	} Separate Curves	See	H - Penetrometer (tsf)
Q - Uncon Comp		W - Unit Dry Wt (pcf)	
T - Triax Comp		D - Relative Dens (%)	
C - Consol.			

Drill Rod Energy Ratio : 0.82
 Last Calibration Date : 11/19/07
 Drill Rig Number : D50

**LOG OF BORING NO. B-5
EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO**



LOCATION: (Emerald Pkwy.) STA 182+75, 24' Rt. ELEVATION: 850.0 DATE: 6/4/09
 DRILLING METHOD: 3-1/4" I.D. Hollow-stem Auger COMPLETION DEPTH: 19.7'
 SAMPLER(S): 2" O.D. Split-barrel Sampler, NQ Rock Core Barrel

NEW DEFAULT BORING LOG-W/ N60 112300T00.GPJ BBCM.GDT 7/31/09

ELEV.	DEPTH, FEET	SAMPLE NUMBER	SAMPLE EFFORT	N ₆₀	SAMPLE REC-%	DESCRIPTION	NATURAL CONSISTENCY INDEX				TEST RESULTS
							NATURAL MOISTURE CONTENT				
	0						PLASTIC LIMIT	LIQUID LIMIT			
							10	20	30	40	
849.0						TOPSOIL - 12 INCHES					
						Very-stiff to hard brown silty clay, some fine to coarse sand, trace fine gravel.					
	5	1	6 / 7 / 6	18	60					H=4.0-4.5+	
842.2						Hard to very-hard gray limestone, massive bedding, many diagonal fractures, few zones of dolomitic limestone, few becoming many very-hard chert nodules, few shale partings.					
	10	2	50-0"R		93	- From 8.8' - 9.3': Unconfined Compression Strength = 17,271 psi.					
	15	3	RQD 73%		97	- From 14.0' - 14.5': Unconfined Compression Strength = 17,796 psi.					
	20	4	RQD 43%		97						
830.3						- Encountered apparent bedrock at 7.8'. - Encountered auger refusal at 8.8'. - Coring terminated at 19.7' after encountering extreme difficulty coring through hard to very-hard chert nodules.					

WATER LEVEL: ∇ "Dry" ∇ 1.7
 WATER NOTE: Before coring 6/4/09 After HSA pulled 6/4/09
 DATE: 6/4/09 6/4/09

SYMBOLS USED TO INDICATE TEST RESULTS

G - Gradation	} Separate Curves	See	H - Penetrometer (tsf)
Q - Uncon Comp		W - Unit Dry Wt (pcf)	
T - Triax Comp		D - Relative Dens (%)	
C - Consol.			

Drill Rod Energy Ratio : 0.82
 Last Calibration Date : 11/19/07
 Drill Rig Number : D50

**LOG OF BORING NO. B-7
EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO**



LOCATION: (Emerald Pkwy.) STA 187+96, on Centerline ELEVATION: 858.5 ± DATE: 6/2/09
 DRILLING METHOD: 4-1/2" O.D. Continuous-flight Auger COMPLETION DEPTH: 20.0'
 SAMPLER(S): 2" O.D. Split-barrel Sampler

8 NEW DEFAULT BORING LOG-W/NG0 112300T00.GPJ BBCM.GDT 7/6/09

ELEV.	DEPTH, FEET	SAMPLE NUMBER	SAMPLE	SAMPLE EFFORT	N ₆₀	SAMPLE REC-%	DESCRIPTION	NATURAL CONSISTENCY INDEX				TEST RESULTS
								NATURAL MOISTURE CONTENT				
								X ——— X \ ——— / PLASTIC LIMIT — LIQUID LIMIT				
858.0	0						TOPSOIL - 6 INCHES					
		1	4 / 4 / 4	4	11	87	Very-stiff dark-brown silty clay, little fine to coarse sand, little fine to coarse gravel.					H=3.0-4.0 G
855.5		2	3 / 3 / 5	5	11	93	Stiff to very-stiff brown mottled with dark-brown silty clay, some fine to coarse sand, trace fine to coarse gravel, desiccated.					H=1.5-3.0
851.5		3	3 / 7 / 9	9	23	100	Very-stiff to hard brown silty clay, some fine to coarse sand, trace fine to coarse gravel, desiccated.					H=3.0-4.5
845.5		4	50 R			100	Dense brown and gray fine to coarse sand, some fine to coarse gravel, some silt, few cobbles.					
844.0							Medium-dense brown fine to coarse sand, "and" fine to coarse gravel, little silt, many cobbles.					
838.5		5	24 / 13 / 17	17	43	100						
							- Encountered cobbles from 13.0' to 18.0'.					

WATER LEVEL: ▽ "Dry" ▽
 WATER NOTE: Caved at 17.7'
 DATE: 6/2/09

SYMBOLS USED TO INDICATE TEST RESULTS

G - Gradation	} Separate Curves	H - Penetrometer (tsf)
Q - Uncon Comp		W - Unit Dry Wt (pcf)
T - Triax Comp		D - Relative Dens (%)
C - Consol.		

Drill Rod Energy Ratio : 0.86
 Last Calibration Date : 02/17/09
 Drill Rig Number : TRUCK 55

**LOG OF BORING NO. B-8
EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO**



LOCATION: (Emerald Pkwy.) STA 190+10, on Centerline ELEVATION: 862 ± DATE: 6/2/09
 DRILLING METHOD: 4-1/2" O.D. Continuous-flight Auger COMPLETION DEPTH: 25.0'
 SAMPLER(S): 2" O.D. Split-barrel Sampler

8 NEW DEFAULT BORING LOG-W/ N60 112300T00.GPJ BBCM.GDT 7/16/09

ELEV.	DEPTH, FEET	SAMPLE NUMBER	SAMPLE EFFORT	N ₆₀	SAMPLE REC-%	DESCRIPTION	NATURAL CONSISTENCY INDEX				TEST RESULTS
							NATURAL MOISTURE CONTENT				
							PLASTIC LIMIT	LIQUID LIMIT			
							10	20	30	40	
861.4	0					TOPSOIL - 7 INCHES					
		1	2 / 2 / 3	7	100	Very-stiff dark-brown mottled with brown silty clay, trace to little fine to coarse sand, trace fine gravel.					H=2.0-3.0
		2	4 / 5 / 6	16	100						H=2.5-3.5 G
854.0	5					Medium-dense brown fine to coarse gravel, "and" fine to coarse sand, some clayey silt.					
		3	6 / 7 / 10	24	100						
849.0	10					Medium-dense gray fine to coarse sand, some fine to coarse gravel, little silt.					
		4	12 / 13 / 12	36	100						
844.5	15					Medium-dense gray fine to coarse gravel, "and" fine to coarse sand, some clayey silt, many cobbles.					
		5	18 / 16 / 14	43	100						
839.0	20					Very-soft gray and brown shale, fragmental structure, similiar to hard clayey silt.					
		6	10 / 16 / 26	60	100						
837.0	25										
						- Encountered water at 8.0'. - Encountered many cobbles from 18.5' to 23.0'.					

WATER LEVEL: <u>9.0</u>	SYMBOLS USED TO INDICATE TEST RESULTS G - Gradation See Q - Uncon Comp Separate T - Triax Comp Curves C - Consol.	H - Penetrometer (tsf)	Drill Rod Energy Ratio : <u>0.86</u>
WATER NOTE: _____		W - Unit Dry Wt (pcf)	Last Calibration Date : <u>02/17/09</u>
DATE: <u>6/2/09</u>		D - Relative Dens (%)	Drill Rig Number : <u>TRUCK 55</u>

**LOG OF BORING NO. B-11
EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO**



LOCATION: (Emerald Pkwy.) STA 197+25, on Centerline ELEVATION: 870.7 DATE: 6/3/09
 DRILLING METHOD: 4-1/2" O.D. Continuous-flight Auger COMPLETION DEPTH: 20.0'
 SAMPLER(S): 2" O.D. Split-barrel Sampler

8 NEW DEFAULT BORING LOG-W/NGO 112300T00.GPJ BBCM.GDT 7/6/09

ELEV.	DEPTH, FEET	SAMPLE NUMBER	SAMPLE	SAMPLE EFFORT	N ₆₀	SAMPLE REC-%	DESCRIPTION	NATURAL CONSISTENCY INDEX				TEST RESULTS
								NATURAL MOISTURE CONTENT				
								PLASTIC LIMIT	LIQUID LIMIT			
								10	20	30	40	
870.3	0						TOPSOIL - 5 INCHES					
869.3	1	4	5/6		16	67	Very-stiff dark-gray silty clay, trace fine to coarse sand.					H=1.0-3.0
	2	3	4/5		13	73	Medium-stiff to stiff brown mottled with gray silty clay, little to some fine to coarse sand, trace fine gravel, few zones of very-stiff silty clay.					H=0.5-2.0 G
863.7	3	5	5/8		19	100	Very-stiff to hard brown mottled with gray clayey silt, some fine to coarse sand, trace fine gravel.					H=3.5-4.5
58.2	4	6	5/8		19	87	Stiff to very-stiff gray silty clay, little fine to coarse sand, trace fine gravel.					H=1.75-2.5
852.7	5	6	5/8		19	40	Medium-dense gray and brown fine to coarse sand, some fine to coarse gravel, some clayey silt.					
850.7	20						- Encountered water at approximately 16'.					

WATER LEVEL: 16.2 16.2
 WATER NOTE: _____
 DATE: 6/3/09

SYMBOLS USED TO INDICATE TEST RESULTS

G - Gradation	See	H - Penetrometer (tsf)
Q - Uncon Comp	Separate Curves	W - Unit Dry Wt (pcf)
T - Triax Comp		D - Relative Dens (%)
C - Consol.		

Drill Rod Energy Ratio : 0.86
 Last Calibration Date : 02/17/09
 Drill Rig Number : TRUCK 55

**LOG OF BORING NO. B-12
EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO**



LOCATION: (Emerald Pkwy.) STA 200+25, on Centerline ELEVATION: 875.9 DATE: 6/3/09
 DRILLING METHOD: 4-1/2" O.D. Continuous-flight Auger COMPLETION DEPTH: 17.4'
 SAMPLER(S): 2" O.D. Split-barrel Sampler

8 NEW DEFAULT BORING LOG-W/ N60 112300T00.GPJ BBCM.GDT 7/6/09

ELEV.	DEPTH, FEET	SAMPLE NUMBER	SAMPLE	SAMPLE EFFORT	N ₆₀	SAMPLE REC-%	DESCRIPTION	NATURAL CONSISTENCY INDEX				TEST RESULTS
								NATURAL MOISTURE CONTENT				
								PLASTIC LIMIT	LIQUID LIMIT			
								10	20	30	40	
875.5	0						TOPSOIL - 5 INCHES					
		1	3 / 4 / 4		11	100	Very-stiff brown mottled with dark-gray and gray silty clay, little fine to coarse sand, trace fine gravel.					H=3.0-3.75 G
872.9												
871.7		2A	3 / 3 / 7		14	100	Loose brown fine to coarse sand, some silty clay, trace fine gravel.					
	5	2B				100	Soft to medium-hard dark-gray shale.					
	10	3	24 / 26 / 29		79	80						
	15	4	50-2"R			50						
858.5												
	20						- Encountered water at 6.0'. - Encountered auger refusal at 17.4'.					
	25											
	30											

WATER LEVEL: 2.7
 WATER NOTE: _____
 DATE: 6/3/09

SYMBOLS USED TO INDICATE TEST RESULTS

G - Gradation	} Separate Curves	See	H - Penetrometer (tsf)
Q - Uncon Comp			W - Unit Dry Wt (pcf)
T - Triax Comp			D - Relative Dens (%)
C - Consol.			

Drill Rod Energy Ratio : 0.86
 Last Calibration Date : 02/17/09
 Drill Rig Number : TRUCK 55

**LOG OF BORING NO. B-13
EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO**



LOCATION: (Emerald Pkwy.) STA 206+25, on Centerline ELEVATION: 887.6 DATE: 6/5/09
 DRILLING METHOD: 3-1/4" I.D. Hollow-stem Auger COMPLETION DEPTH: 20.0'
 SAMPLER(S): 2" and 2-1/2" O.D. Split-barrel Samplers, NQ Rock Core Barrel

NEW DEFAULT BORING LOG-W/N60 112300T00.GPJ BBCM.GDT 7/6/09

ELEV.	DEPTH, FEET	SAMPLE NUMBER	SAMPLE	SAMPLE EFFORT	N ₆₀	SAMPLE REC-%	DESCRIPTION	NATURAL CONSISTENCY INDEX				TEST RESULTS
								NATURAL MOISTURE CONTENT				
								PLASTIC LIMIT	LIQUID LIMIT			
887.0	0						TOPSOIL - 7 INCHES	10	20	30	40	
		1	4 / 4 / 4	4	11	33	Stiff to very-stiff brown mottled with gray silty clay, some fine to coarse sand, trace fine to coarse gravel.					H=2.7-3.2
884.6		2	3 / 4 / 6	6	14		Medium-stiff to stiff brown mottled with gray silty clay, some fine to coarse sand, trace fine gravel.					H=0.75-1.1 G
	5	2S		8								
879.6		3	6 / 20 / 32	32	71	100	Very-soft to soft dark-gray shale, nearly horizontally and very thinly bedded.					
	10											
874.1		4	50-1"R			100	Soft to medium-hard dark-gray shale, nearly horizontally bedded, many horizontal and diagonal fractures.					
	15											
		5	RQD 40%			98						
867.6	20											
							- Encountered water at 8.0'.					

WATER LEVEL: <u>12.7</u>	WATER NOTE: <u>Before coring</u>	DATE: <u>6/5/09</u>	WATER LEVEL: <u>4.8</u>	WATER NOTE: <u>After pulling HSA</u>	DATE: <u>6/5/09</u>	SYMBOLS USED TO INDICATE TEST RESULTS G - Gradation See Q - Uncon Comp Separate T - Triax Comp Curves C - Consol.	H - Penetrometer (tsf)	Drill Rod Energy Ratio: <u>0.82</u>
							W - Unit Dry Wt (pcf)	Last Calibration Date: <u>11/19/07</u>
							D - Relative Dens (%)	Drill Rig Number: <u>D50</u>

**LOG OF BORING NO. B-15
EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO**



LOCATION: (Emerald Pkwy.) STA 216+25, on Centerline ELEVATION: 892.3 DATE: 6/3/09
 DRILLING METHOD: 4-1/2" O.D. Continuous-flight Auger COMPLETION DEPTH: 18.5'
 SAMPLER(S): 2" O.D. Split-barrel Sampler

88 NEW DEFAULT BORING LOG-W/N60 112300T00.GPJ BBCM.GDT 7/16/09

ELEV.	DEPTH, FEET	SAMPLE NUMBER	SAMPLE	SAMPLE EFFORT	N ₆₀	SAMPLE REC-%	DESCRIPTION	NATURAL CONSISTENCY INDEX				TEST RESULTS
								NATURAL MOISTURE CONTENT				
								X	●	X		
								PLASTIC LIMIT		LIQUID LIMIT		
								10	20	30	40	
891.8	0						TOPSOIL - 6 INCHES					
890.9		1	4 / 5 / 6		16	100	Very-stiff dark-gray silty clay, trace fine to coarse sand, trace fine gravel, few roots, slightly organic.					H=2.5-3.5
		2	4 / 5 / 6		16	100	Stiff to very-stiff brown mottled with gray silty clay, little fine to coarse sand, trace fine gravel, few roots.					H=1.0-3.5 G
886.8	-5											
		3	6 / 6 / 9		22	100	Very-stiff to hard brown mottled with gray clayey silt, some fine to coarse sand, trace to little fine to coarse gravel, desiccated, few cobbles.					H=3.0-4.5
		4	6 / 8 / 12		29	87						H=2.75-4.0
880.8	-10											
		5	19 / 13 / 17		43	100	Hard gray clayey silt, some fine to coarse sand, trace fine to coarse gravel.					H=4.5+
873.8	-15											
			50-0"R									
	-20						- Encountered auger refusal at 18.5'. - No seepage noted.					
	-25											
	-30											

WATER LEVEL: ▽ "Dry" ▼
 WATER NOTE: _____
 DATE: 6/3/09

SYMBOLS USED TO INDICATE TEST RESULTS

G - Gradation	See	H - Penetrometer (tsf)
Q - Uncon Comp	Separate	W - Unit Dry Wt (pcf)
T - Triax Comp		D - Relative Dens (%)
C - Consol.	Curves	

Drill Rod Energy Ratio : 0.86
 Last Calibration Date : 02/17/09
 Drill Rig Number : TRUCK 55

**LOG OF BORING NO. B-16
EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO**



LOCATION: (Emerald Pkwy.) STA 221+25, on Centerline ELEVATION: 893.0 DATE: 6/1/09
 DRILLING METHOD: 4-1/2" O.D. Continuous-flight Auger COMPLETION DEPTH: 15.0'
 SAMPLER(S): 2" O.D. Split-barrel Sampler

08 NEW DEFAULT BORING LOG-W/ N60 112300T00.GPJ BBCM.GDT 7/6/09

ELEV.	DEPTH, FEET	SAMPLE NUMBER	SAMPLE EFFORT	N ₆₀	SAMPLE REC-%	DESCRIPTION	NATURAL CONSISTENCY INDEX				TEST RESULTS
							NATURAL MOISTURE CONTENT				
							PLASTIC LIMIT	LIQUID LIMIT			
							10	20	30	40	
892.8	0					TOPSOIL - 2 INCHES					
		1	3 / 3 / 5	11	67	Very-stiff brown mottled with dark-gray silty clay, little fine to coarse sand, trace fine gravel.					LL=51% *H=2.5-3.5 G
889.5	5	2	5 / 7 / 8	22	100	Very-stiff brown mottled with gray clayey silt, some fine to coarse sand, trace fine to coarse gravel, desiccated, few roots.					H=2.0-3.5
	10	3	7 / 6 / 8	20	100						H=3.5-4.0
881.0	15	4	7 / 6 / 7	19	73	Stiff to very-stiff gray clayey silt, some fine to coarse sand, trace fine to coarse gravel.					H=1.0-3.0
878.0						- No seepage noted.					

WATER LEVEL: ▽ "Dry" ▼
 WATER NOTE: _____
 DATE: 6/1/09

SYMBOLS USED TO INDICATE TEST RESULTS

G - Gradation	} Separate Curves	H - Penetrometer (tsf)
Q - Uncon Comp		W - Unit Dry Wt (pcf)
T - Triax Comp		D - Relative Dens (%)
C - Consol.		

Drill Rod Energy Ratio : 0.86
 Last Calibration Date : 02/17/09
 Drill Rig Number : TRUCK 55

**LOG OF BORING NO. B-17
EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO**



LOCATION: (Bright Rd.) STA 494+15, 7' Rt. ELEVATION: 900 ± DATE: 6/1/09
 DRILLING METHOD: 4-1/2" O.D. Continuous-flight Auger COMPLETION DEPTH: 10.0'
 SAMPLER(S): 2" O.D. Split-barrel Sampler

NEW DEFAULT BORING LOG-W/ N60 112300T00.GPJ BBCM.GDT 7/6/09

ELEV.	DEPTH, FEET	SAMPLE NUMBER	SAMPLE	SAMPLE EFFORT	N ₆₀	SAMPLE REC-%	DESCRIPTION	NATURAL CONSISTENCY INDEX				TEST RESULTS
								NATURAL MOISTURE CONTENT				
								PLASTIC LIMIT	LIQUID LIMIT			
								10	20	30	40	
899.3	0						ASPHALT - 8 INCHES					
898.8							GRANULAR BASE - 6 INCHES					
		1	5	5	6	16	Stiff to very-stiff brown silty clay, some fine to coarse sand, little fine to coarse gravel.		●			H=1.5-3.5 G
896.5	5	2	10	10	11	30	Very-stiff to hard brown mottled with gray clayey silt, some fine to coarse sand, trace fine to coarse gravel, few cobbles.					H=2.0-4.0
890.0	10	3	5	7	9	23						H=3.5-4.5+
							- No seepage noted.					

WATER LEVEL: ▽ "Dry" ▽
 WATER NOTE: _____
 DATE: 6/1/09

SYMBOLS USED TO INDICATE TEST RESULTS

G - Gradation	} Separate Curves	H - Penetrometer (tsf)
Q - Uncon Comp		W - Unit Dry Wt (pcf)
T - Triax Comp		D - Relative Dens (%)
C - Consol.		

Drill Rod Energy Ratio: 0.86
 Last Calibration Date: 02/17/09
 Drill Rig Number: TRUCK 55

**LOG OF BORING NO. B-19
EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO**



LOCATION: (Riverside Dr.) STA 30+30, 57' Rt. ELEVATION: 801.2 DATE: 6/1/09
 DRILLING METHOD: 4-1/2" O.D. Continuous-flight Auger COMPLETION DEPTH: 5.1'
 SAMPLER(S): 2" O.D. Split-barrel Sampler

8 NEW DEFAULT BORING LOG-W/NG0 112300T00.GPJ BBCM.GDT 7/6/09

ELEV.	DEPTH, FEET	SAMPLE NUMBER	SAMPLE	SAMPLE EFFORT	N ₆₀	SAMPLE REC-%	DESCRIPTION	NATURAL CONSISTENCY INDEX				TEST RESULTS
								NATURAL MOISTURE CONTENT				
								X	●	X		
								X		X		
800.9	0						TOPSOIL - 4 INCHES	10	20	30	40	
		1	3 / 4 / 5		13	67	Hard brown mottled with dark-gray silty clay, trace fine to coarse sand, few roots, slightly organic.		●	X		LL=52% XH=4.5+ G
797.7		2	20 / 50-3"R			47	Limestone, fragmented.					
796.1	5						- Encountered auger refusal at 5.1'. - No seepage noted.					
	10											
	15											
	20											
	25											

WATER LEVEL: ▽ "Dry" ▼
 WATER NOTE: _____
 DATE: 6/1/09

SYMBOLS USED TO INDICATE TEST RESULTS

G - Gradation	} See Separate Curves	H - Penetrometer (tsf)
Q - Uncon Comp		W - Unit Dry Wt (pcf)
T - Triax Comp		D - Relative Dens (%)
C - Consol.		

Drill Rod Energy Ratio : 0.86
 Last Calibration Date : 02/17/09
 Drill Rig Number : TRUCK 55

**LOG OF BORING NO. B-20
EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO**



LOCATION: (Riverside Dr.) STA 38+00, 40' Rt. ELEVATION: 809.1 DATE: 6/3/09
 DRILLING METHOD: 4-1/2" O.D. Continuous-flight Auger COMPLETION DEPTH: 3.0'
 SAMPLER(S): 2" O.D. Split-barrel Sampler

NEW DEFAULT BORING LOG-W/ N60 112300T00.GPJ BBCM.GDT 7/6/09

ELEV.	DEPTH, FEET	SAMPLE NUMBER	SAMPLE	SAMPLE EFFORT	N ₆₀	SAMPLE REC-%	DESCRIPTION	NATURAL CONSISTENCY INDEX				TEST RESULTS
								NATURAL MOISTURE CONTENT				
	0							PLASTIC LIMIT	LIQUID LIMIT			
								10	20	30	40	
807.4		1A	5	8	40	100	FILL: Medium-dense gray and brown fine to coarse gravel (limestone fragments), little fine to coarse sand, trace silt.					
		1B	5	8	20	100	POSSIBLE FILL: Dense brown and gray fine to coarse sand, some fine gravel, trace silt.					
806.2							Apparent limestone bedrock.					
806.1				50-0"R								
	5						- Encountered auger refusal at 3.0'. - No seepage noted.					
	10											
	15											
	20											
	25											

WATER LEVEL: ▽ "Dry" ▼
 WATER NOTE: _____
 DATE: 6/3/09

SYMBOLS USED TO INDICATE TEST RESULTS

G - Gradation	} Separate Curves	H - Penetrometer (tsf)
Q - Uncon Comp		W - Unit Dry Wt (pcf)
T - Triax Comp		D - Relative Dens (%)
C - Consol.		

Drill Rod Energy Ratio : 0.86
 Last Calibration Date : 02/17/09
 Drill Rig Number : TRUCK 55

**LOG OF BORING NO. C-1
EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO**



LOCATION: (Emerald Pkwy.) STA 225+32, 34' Rt. ELEVATION: 879.4 DATE: 5/28/09
 DRILLING METHOD: 3-1/4" I.D. Hollow-stem Auger COMPLETION DEPTH: 38.7'
 SAMPLER(S): 2" O.D. Split-barrel Sampler

8 NEW DEFAULT BORING LOG-W/ N60 112300T00.GPJ BBCM.GDT 7/16/09

ELEV.	DEPTH, FEET	SAMPLE NUMBER	SAMPLE	SAMPLE EFFORT	N ₆₀	SAMPLE REC-%	DESCRIPTION	NATURAL CONSISTENCY INDEX				TEST RESULTS
								NATURAL MOISTURE CONTENT				
								PLASTIC LIMIT	LIQUID LIMIT			
								10	20	30	40	
878.8	0						Rootmat/Organic Clayey Silt - 7 Inches					
							Hard brown clayey silt, some fine to coarse sand, trace fine gravel.					
		1	8 / 9 / 15		33	100						H=4.5+
873.9	5						Hard gray clayey silt, some fine to coarse sand, trace to little fine to coarse gravel.					
		2	18 / 22 / 25		64	87		●	×	×		H=4.5+ G
		3	14 / 17 / 18		48	100						H=4.5+
	10											
		4	10 / 11 / 15		36	93		●	×	×		H=4.5+ G
		5	19 / 20 / 25		62	100						H=4.5+
863.9	15						Very-dense gray fine to coarse sand, little fine to coarse gravel, little silt, few seams of silt and clayey silt.					
		6	25 / 28 / 45		100	87						G
861.4												
860.2		7A	19 / 27 / 31		79	100	Hard gray clayey silt, some fine to coarse sand, trace fine gravel, few lenses of fine sand.					H=4.5+
		7B				100	Very-dense gray fine sand, little silt, trace clay, trace medium to coarse sand, trace fine to coarse gravel, few cobbles.					
858.4	20											
		8	17 / 13 / 15		38	73	Dense gray silt, "and" fine to medium sand, trace clay, trace coarse sand, trace fine gravel.					
		9	7 / 13 / 11		33	67						
	25											

WATER LEVEL: ▽ 27.4 ▽
 WATER NOTE: _____
 DATE: 5/28/09

SYMBOLS USED TO INDICATE TEST RESULTS

G - Gradation	See	H - Penetrometer (tsf)
Q - Uncon Comp	Separate	W - Unit Dry Wt (pcf)
T - Triax Comp	Curves	D - Relative Dens (%)
C - Consol.		

Drill Rod Energy Ratio : 0.82
 Last Calibration Date : 11/19/07
 Drill Rig Number : D50

**LOG OF BORING NO. C-1
EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO**



LOCATION: (Emerald Pkwy.) STA 225+32, 34' Rt. ELEVATION: 879.4 DATE: 5/28/09
 DRILLING METHOD: 3-1/4" I.D. Hollow-stem Auger COMPLETION DEPTH: 38.7'
 SAMPLER(S): 2" O.D. Split-barrel Sampler

08 NEW DEFAULT BORING LOG-W/N60 112300T00.GPJ BBCM.GDT 7/16/09

ELEV.	DEPTH, FEET	SAMPLE NUMBER	SAMPLE	SAMPLE EFFORT	N ₆₀	SAMPLE REC-%	DESCRIPTION	NATURAL CONSISTENCY INDEX				TEST RESULTS
								NATURAL MOISTURE CONTENT				
								PLASTIC LIMIT	LIQUID LIMIT			
								10	20	30	40	
853.9	25						Dense gray silt, "and" fine to medium sand, trace clay, trace coarse sand, trace fine gravel.					
		10	8	11/15	36	80	Hard gray clayey silt, some fine to coarse sand, trace fine gravel.					H=4.0-4.5+
851.4							Medium-dense gray and brown fine to coarse sand, some fine to coarse gravel, little to some clayey silt.					
		11	13	13/13	36	73						
	30											
		12	16	16/17	45	80						
	35											
842.9							Very-soft gray shale, fragmental structure, similar to hard clayey silt.					
840.7		13	50-2"R			13						
	40						- Encountered seepage at 19.2'. - Encountered water at 26.0'. - Encountered cobbles at 20.7'. - Encountered 1.5' of heave at 28.5', and 3.3' at 33.5'.					
	45											
	50											

WATER LEVEL: 27.4
 WATER NOTE: _____
 DATE: 5/28/09

SYMBOLS USED TO INDICATE TEST RESULTS

G - Gradation	} Separate Curves	H - Penetrometer (tsf)
Q - Uncon Comp		W - Unit Dry Wt (pcf)
T - Triax Comp		D - Relative Dens (%)
C - Consol.		

Drill Rod Energy Ratio : 0.82
 Last Calibration Date : 11/19/07
 Drill Rig Number : D50

**LOG OF BORING NO. C-2
EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO**



LOCATION: (Emerald Pkwy.) STA 225+27, 58' Lt. ELEVATION: 877.4 DATE: 5/28/09 - 5/29/09
 DRILLING METHOD: 3-1/4" I.D. Hollow-stem Auger COMPLETION DEPTH: 38.6'
 SAMPLER(S): 2" O.D. Split-barrel Sampler, NQ Rock Core Barrel

8 NEW DEFAULT BORING LOG-W/N60 112300T00.GPJ BBCM.GDT 7/16/09

ELEV.	DEPTH, FEET	SAMPLE NUMBER	SAMPLE	SAMPLE EFFORT	N ₆₀	SAMPLE REC-%	DESCRIPTION	NATURAL CONSISTENCY INDEX				TEST RESULTS
								NATURAL MOISTURE CONTENT				
								PLASTIC LIMIT	LIQUID LIMIT			
								10	20	30	40	
876.9	0						Rootmat/Organic Clayey Silt - 6 Inches					
							Hard brown mottled with gray clayey silt, some fine to coarse sand, trace fine to coarse gravel, desiccated, few cobbles.					
		1	18/28	40	93	87			●	×	×	H=4.5+ G
871.9	5						Hard gray clayey silt, some fine to coarse sand, trace fine to coarse gravel, few cobbles and boulders.					
		2	13/50	3"R		73						
		3	16/10	36	63	87			●	×	×	H=4.5+ G
866.9	10						Very-dense brown fine to coarse sand, some fine to coarse gravel, some silt.					
		4	9/45	36	111	100						G
863.3		5A	25/36	26	85	100						
		5B			89		Very-dense gray and brown fine to medium sand, little to some fine to coarse gravel, trace coarse sand, trace to little silt.					
	15											
		6	15/26	37	86	93						
859.4							Very-dense gray fine to medium sand, little to some fine to coarse gravel, little silt, few seams of clayey silt.					
	20	7	19/22	21	59	47						
		8	16/27	28	75	40						
854.4							Dense gray and brown fine to medium sand, little fine gravel, little silt, trace coarse sand.					
		9	6/15	19	46	100						
852.4	25											

WATER LEVEL: ▽ 26.4 ▽
 WATER NOTE: _____
 DATE: 5/28/09

SYMBOLS USED TO INDICATE TEST RESULTS

G - Gradation	See	H - Penetrometer (tsf)
Q - Uncon Comp	Separate Curves	W - Unit Dry Wt (pcf)
T - Triax Comp		D - Relative Dens (%)
C - Consol.		

Drill Rod Energy Ratio: 0.82
 Last Calibration Date: 11/19/07
 Drill Rig Number: D50

**LOG OF BORING NO. C-2
EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO**



LOCATION: (Emerald Pkwy.) STA 225+27, 58' Lt. ELEVATION: 877.4 DATE: 5/28/09 - 5/29/09

DRILLING METHOD: 3-1/4" I.D. Hollow-stem Auger COMPLETION DEPTH: 38.6'

SAMPLER(S): 2" O.D. Split-barrel Sampler, NQ Rock Core Barrel

8 NEW DEFAULT BORING LOG-W/ N60 112300T00.GPJ BBCM.GDT 7/6/09

ELEV.	DEPTH, FEET	SAMPLE NUMBER	SAMPLE	SAMPLE EFFORT	N ₆₀	SAMPLE REC-%	DESCRIPTION	NATURAL CONSISTENCY INDEX				TEST RESULTS		
								NATURAL MOISTURE CONTENT						
	25							PLASTIC LIMIT	LIQUID LIMIT	10	20	30	40	
	10	15, 19, 28			64	87	Dense gray and brown fine to medium sand, little fine gravel, little silt, trace coarse sand.							
	11	15, 25, 28			72	53								
846.9	30						Very-soft to soft gray shale, fragmental structure, few horizontal and diagonal fractures, contains 2-1/2" of hard gray siltstone at bottom of core run.							
	12	20, 37, 50-1"R				73								
	13	RQD 35%				43								
838.8	40						- Encountered cobble at 3.0'. - Encountered auger refusal at 7.0' on apparent boulder. Offset boring 4' and continued drilling. - Encountered water at 16.0'. - Encountered 2.2' of heave at 18.5' and 2.0' at 21.0'.							
	45													
	50													

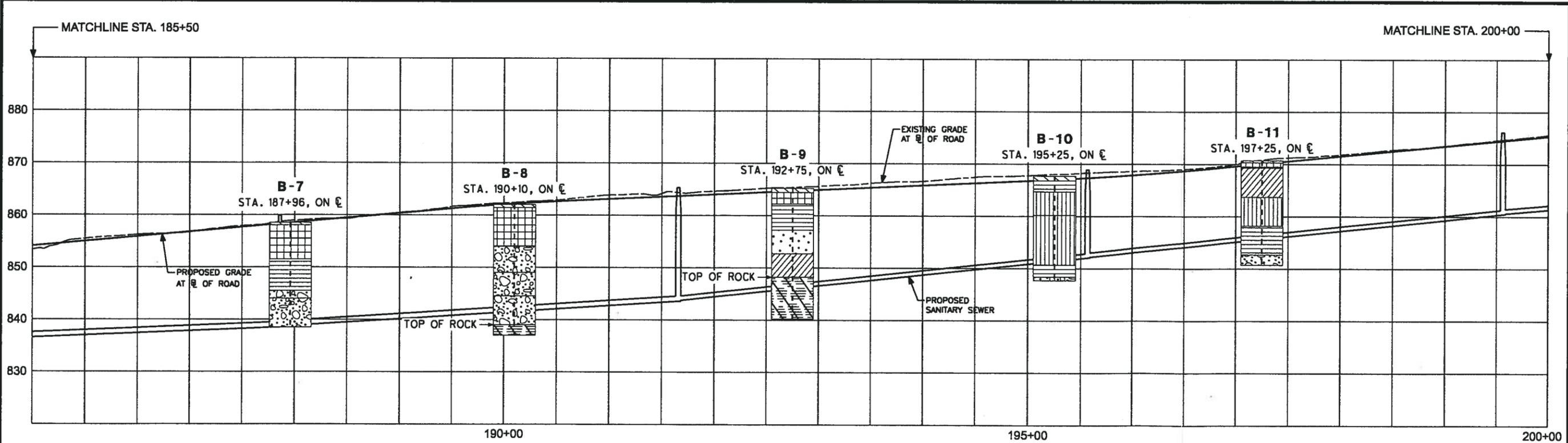
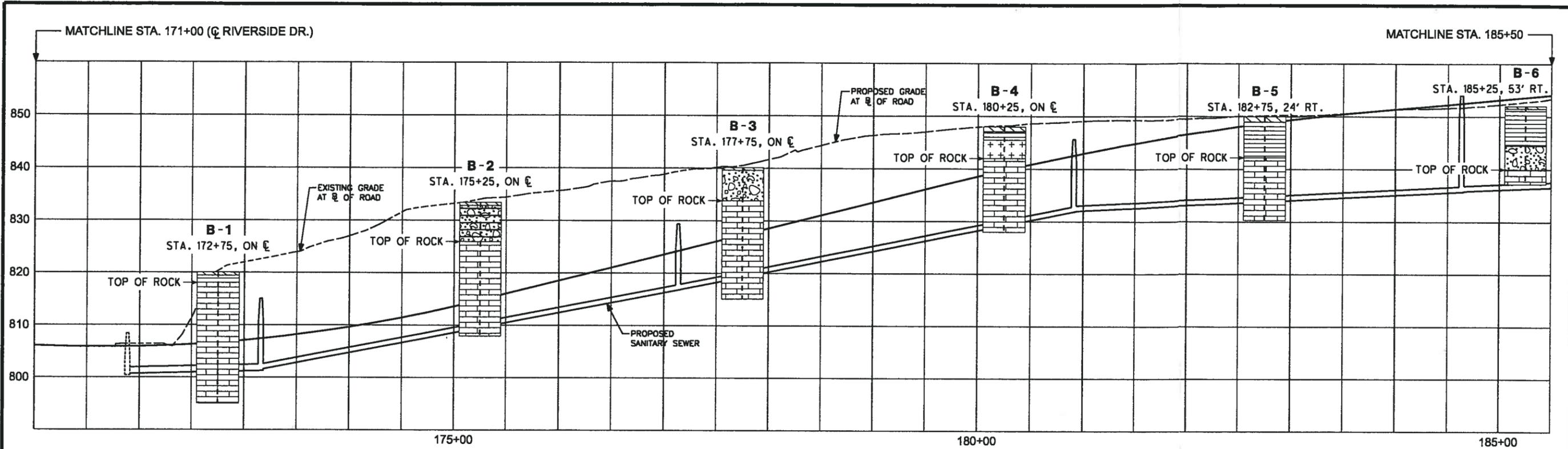
WATER LEVEL: 26.4
 WATER NOTE: _____
 DATE: 5/28/09

SYMBOLS USED TO INDICATE TEST RESULTS

G - Gradation	} Separate Curves	See	H - Penetrometer (tsf)
Q - Uncon Comp		W - Unit Dry Wt (pcf)	
T - Triax Comp		D - Relative Dens (%)	
C - Consol.			

Drill Rod Energy Ratio : 0.82
 Last Calibration Date : 11/19/07
 Drill Rig Number : D50

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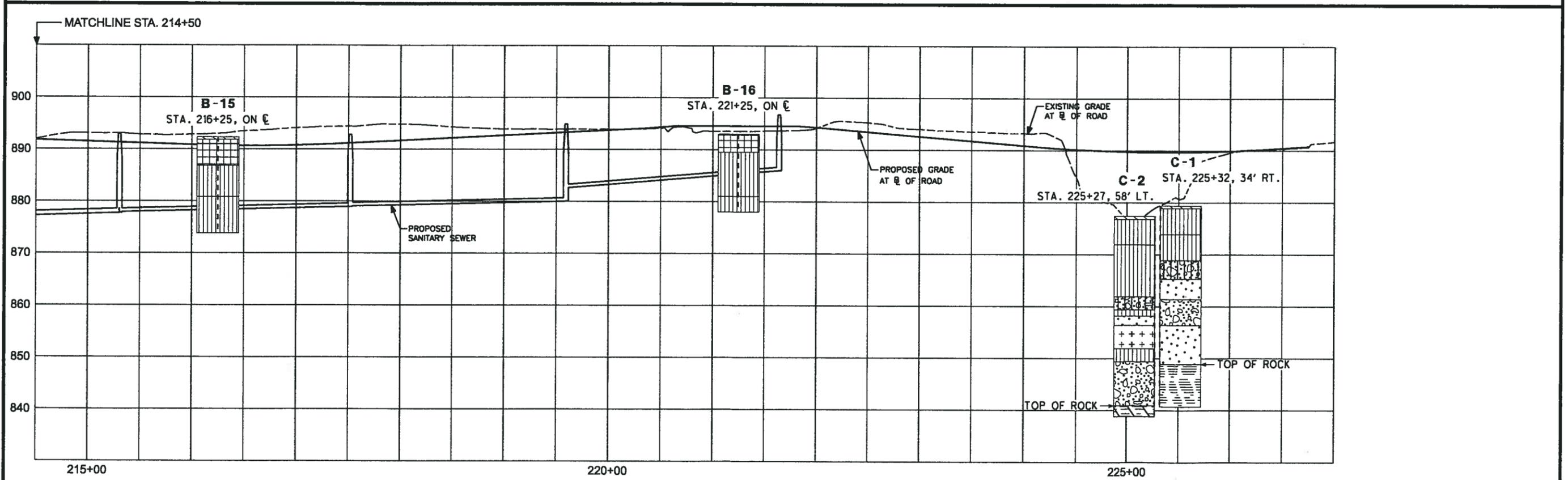
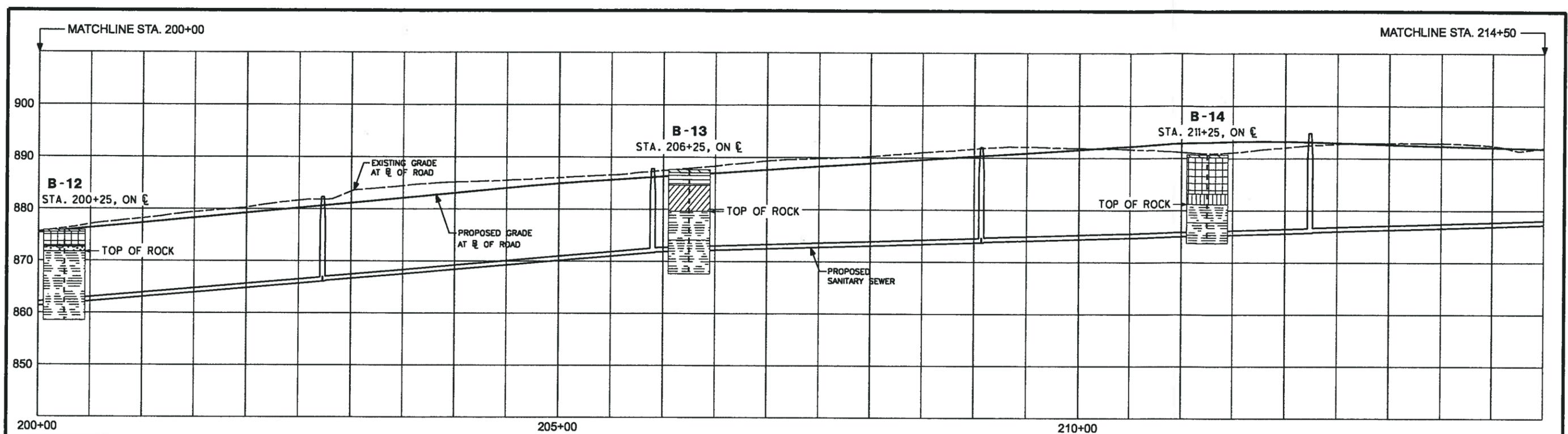


SCHEMATIC SECTION	
EMERALD PARKWAY - PHASE 8 DUBLIN, OHIO	
Project: 011-12300-T00	Drawn By: TJM
Drawing Date: 6/16/09	Approved By: RSW
Revision Date:	Scale: 1" = 100'

BBC&M
SOLUTIONS TO BUILD ON

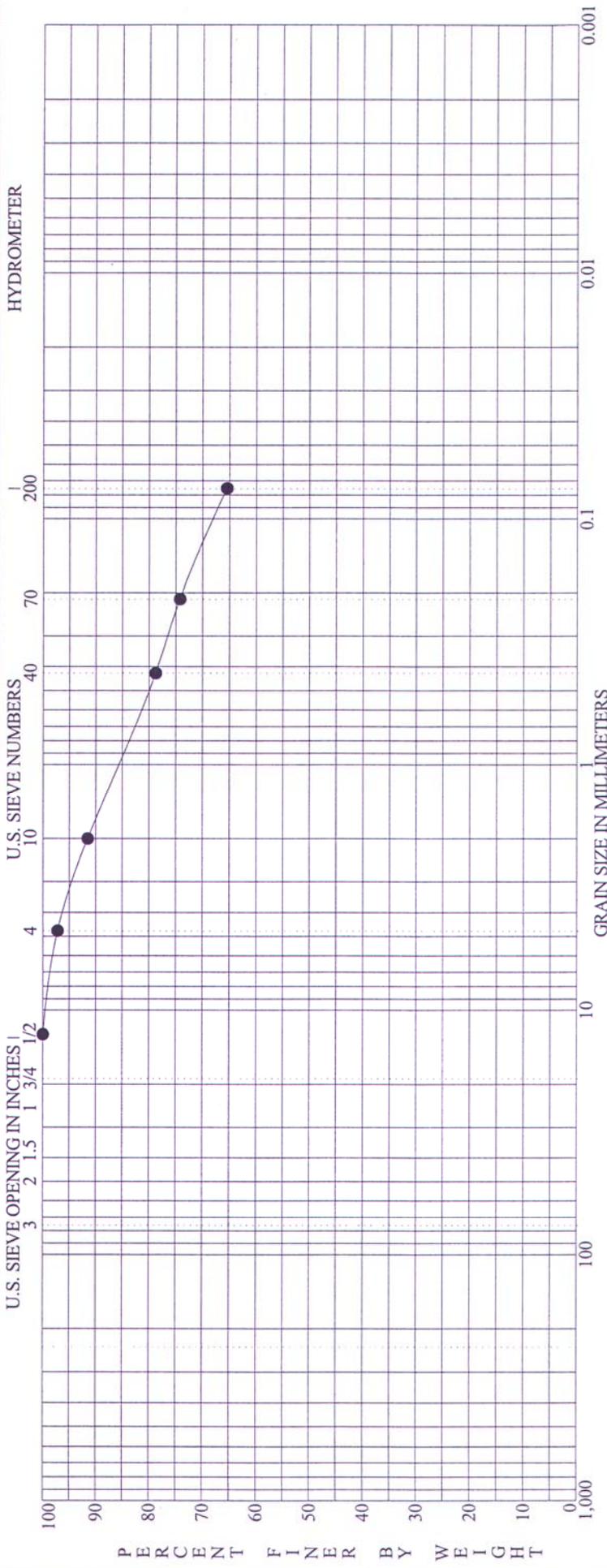
Columbus (614) 793-2228
Cleveland (216) 901-1000
Cincinnati (513) 771-8471
Dayton (937) 424-1011

BBC&M DRAWING FILE: ...BORING-LOCATIONS_6-10-09.dgn 7/30/2009 11:04:40 AM MODEL NAME: Model



SCHEMATIC SECTION	
EMERALD PARKWAY - PHASE 8 DUBLIN, OHIO	
Project: 011-12300-T00	Drawn By: TJM
Drawing Date: 6/16/09	Approved By: RSW
Revision Date:	Scale: 1" = 100'

Columbus (614) 793-2226
Cleveland (216) 901-1000
Cincinnati (513) 771-8471
Dayton (937) 424-1011



BOULDERS	COBBLES	GRAVEL			SAND			SILT OR CLAY									
		coarse	fine	coarse	medium	fine	MC%	LL	PL	PI	Cc	Cu					
Specimen Identification - Depth																	
●	B-6	S-1	1.0' to 2.0'	Brown mottled with gray silty clay, some fine to coarse sand, trace fine gravel.								25	40	17	23		
Specimen Identification - Depth																	
●	B-6	S-1	1.0' to 2.0'	12.5000	3.3939						2.8	31.7	65.5				

ASTM D422

GRADATION CURVE

PROJECT
LOCATION
JOB NO.

EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO
011-12300-T00

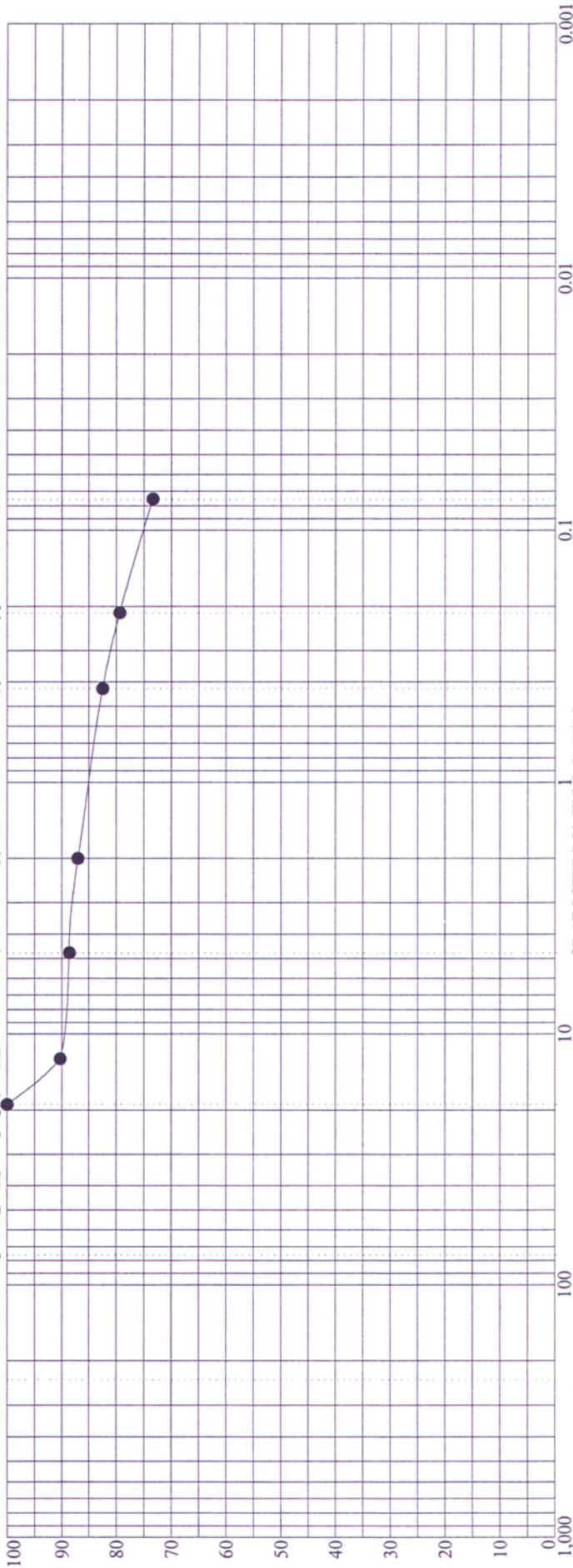
DATE 7/30/09



HYDROMETER

U.S. SIEVE NUMBERS

U.S. SIEVE OPENING IN INCHES
3 2 1.5 1 3/4 1/2



PERCENT FINER BY WEIGHT

GRAIN SIZE IN MILLIMETERS

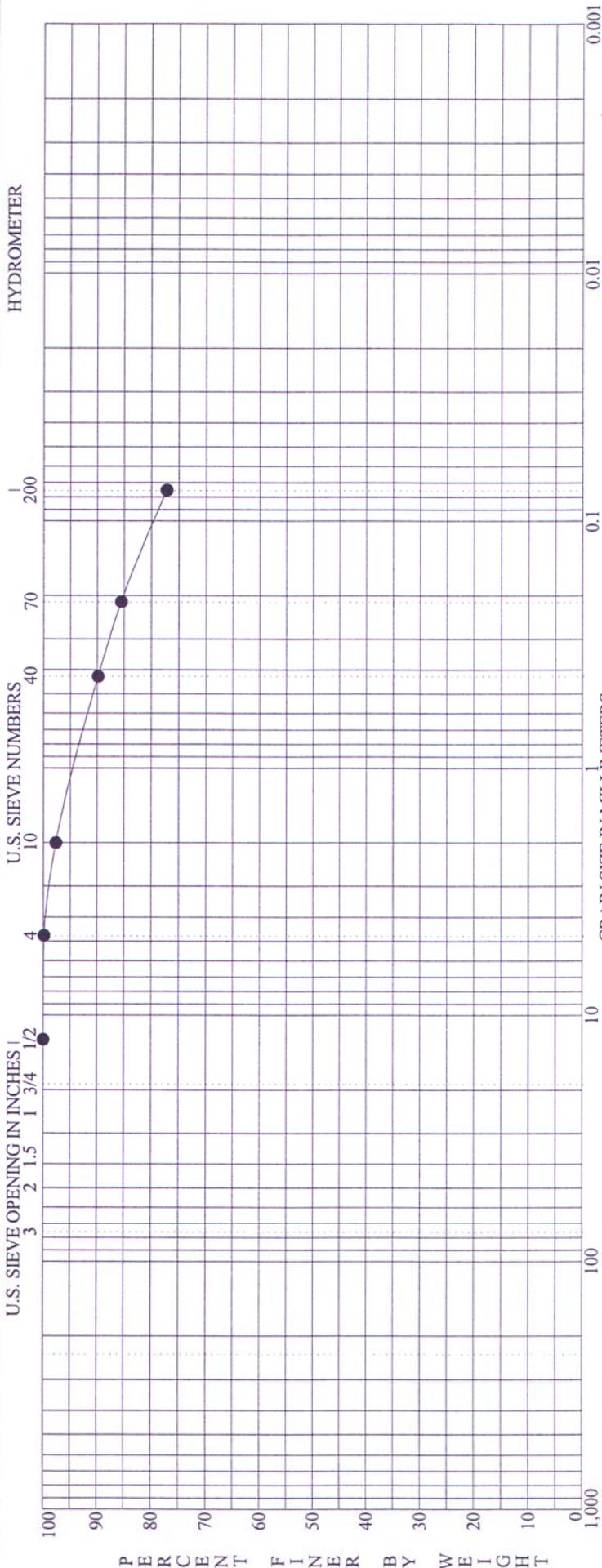
BOULDERS	COBBLES	GRAVEL			SAND			SILT OR CLAY									
		coarse	fine	Classification	coarse	medium	fine	MC%	LL	PL	PI	Cc	Cu				
Specimen Identification - Depth																	
●	B-7	S-1	1.0' to 2.3'	Dark-brown silty clay, little fine to coarse sand, little fine gravel.									16	19	25		
Specimen Identification - Depth																	
●	B-7	S-1	1.0' to 2.3'	D100	D95	D60	D50	D10	%Gravel	11.4	%Sand	15.2	%Silt	73.4	%Clay		

PROJECT: EMERALD PARKWAY EXTENSION, PHASE 8
 LOCATION: DUBLIN, OHIO
 JOB NO.: 011-12300-T00

ASTM D422 GRADATION CURVE
 DATE: 7/30/09



HYDROMETER



PERCENT FINER BY WEIGHT

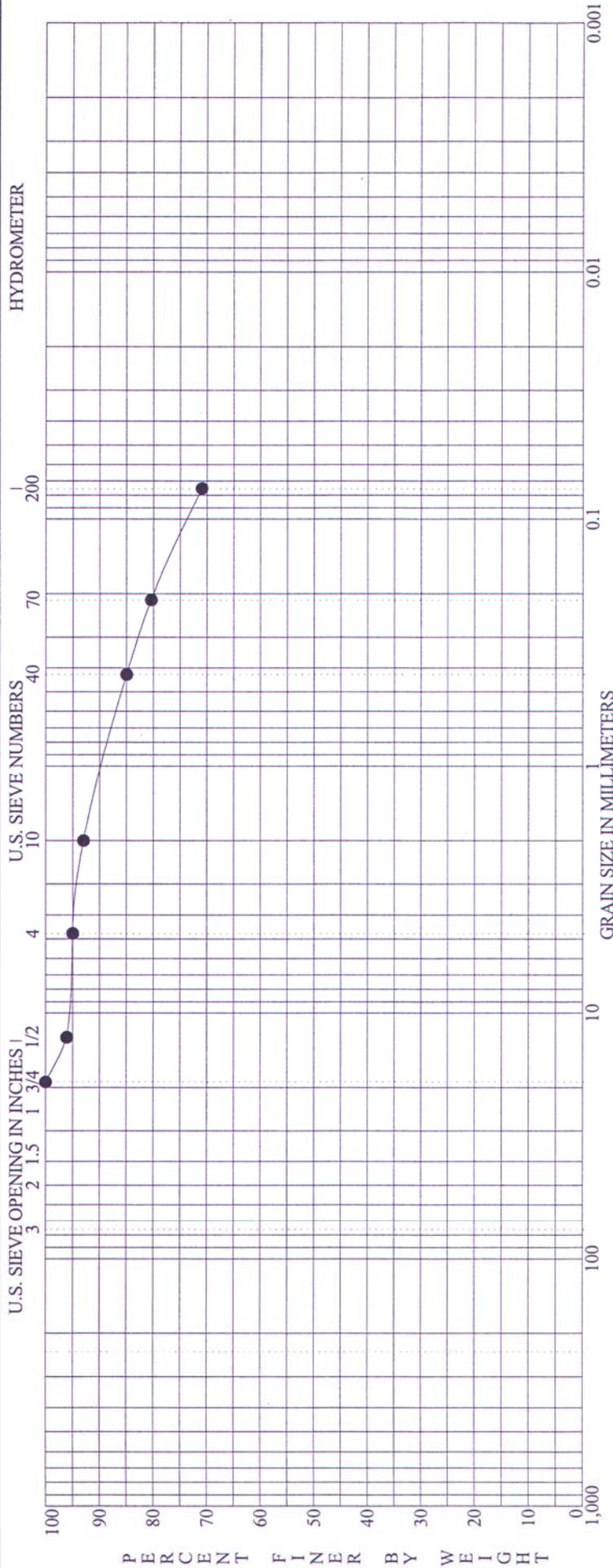
BOULDERS	COBBLES	GRAVEL			SAND			SILT OR CLAY				
		coarse	fine	medium	coarse	medium	fine	LL	PL	PI	Cc	Cu

Specimen Identification - Depth	Classification									
	D100	D95	D60	D50	D10	%Gravel	%Sand	%Silt	%Clay	
● B-9 S-2 3.5' to 5.0'	12.5000	1.1841				0.1	22.6		77.3	

Specimen Identification - Depth	D100	D95	D60	D50	D10	%Gravel	%Sand	%Silt	%Clay
● B-9 S-2 3.5' to 5.0'	12.5000	1.1841				0.1	22.6		77.3

ASTM D422 GRADATION CURVE

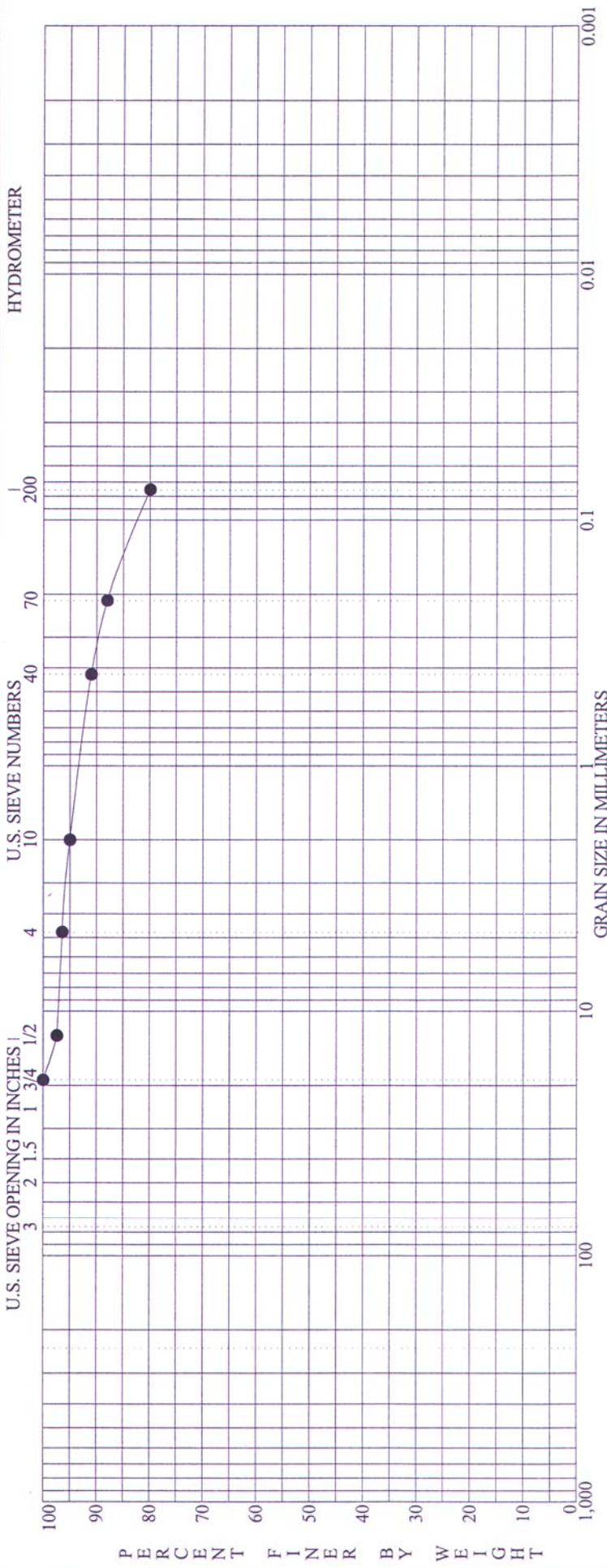
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 LOCATION: DUBLIN, OHIO
 JOB NO.: 011-12300-T00 DATE: 7/30/09



GRN-REG

PROJECT: EMERALD PARKWAY EXTENSION, PHASE 8
 LOCATION: DUBLIN, OHIO
 JOB NO.: 011-12300-T00
 DATE: 7/30/09

ASTM D422 GRADATION CURVE



BOULDERS	COBBLES	GRAVEL			SAND			SILT OR CLAY															
		coarse	fine	medium	fine	medium	coarse	LL	PL	PI	Cc	Cu											
Specimen Identification - Depth																							
● B-12	S-1	1.0' to 2.5'	Brown mottled with dark-gray and gray silty clay, little fine to coarse sand, trace fine gravel.									MC%	21	LL	43	PL	20	PI	23	Cc		Cu	
Specimen Identification - Depth																							
● B-12	S-1	1.0' to 2.5'	D100	D95	D60	D50	D10	%Gravel	3.6	%Sand	16.4	%Silt	80.0	%Clay									

ASTM D422

GRADATION CURVE

PROJECT LOCATION
JOB NO.

EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO
011-12300-T00

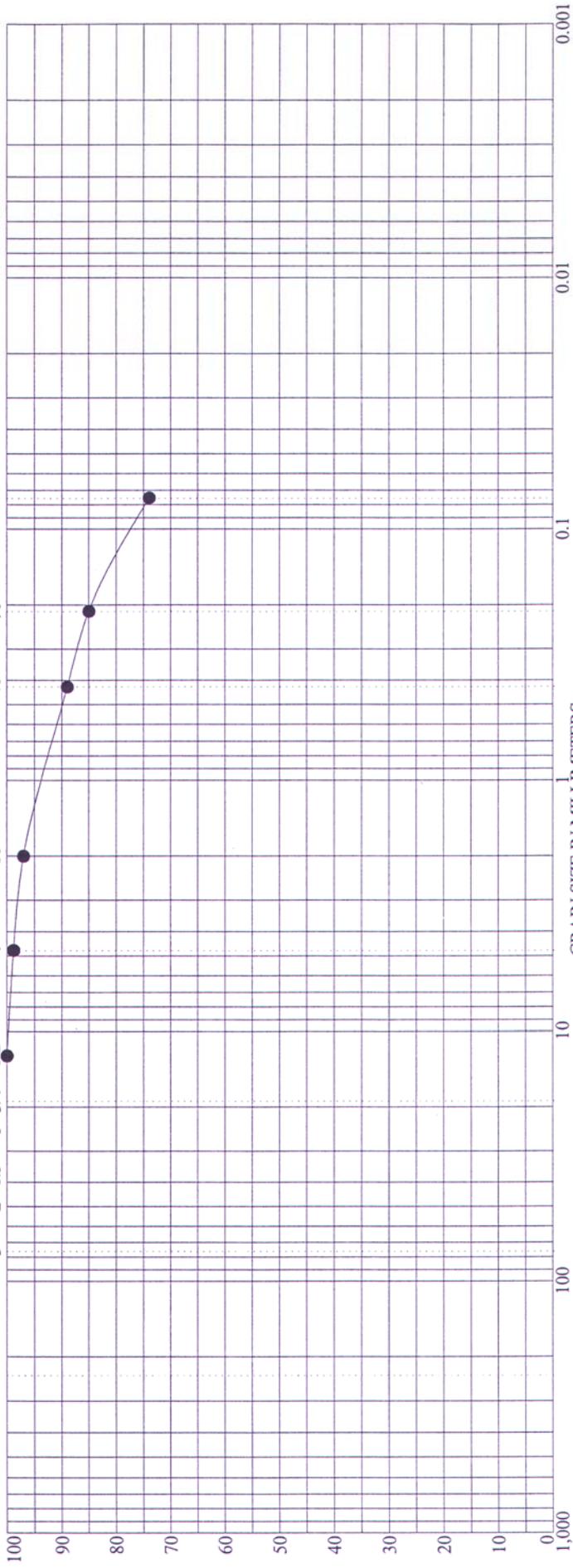
DATE 7/30/09



HYDROMETER

U.S. SIEVE NUMBERS

U.S. SIEVE OPENING IN INCHES
3 2 1.5 1 3/4 1/2



PERCENT FINER BY WEIGHT

GRAIN SIZE IN MILLIMETERS

BOULDERS	COBBLES	GRAVEL		SAND			SILT OR CLAY				
		coarse	fine	coarse	medium	fine	MC%	LL	PL	PI	Cc

Specimen Identification - Depth

● B-13 S-2 3.5' to 5.5' Brown mottled with dark-gray silty clay, some fine to coarse sand, trace fine gravel.

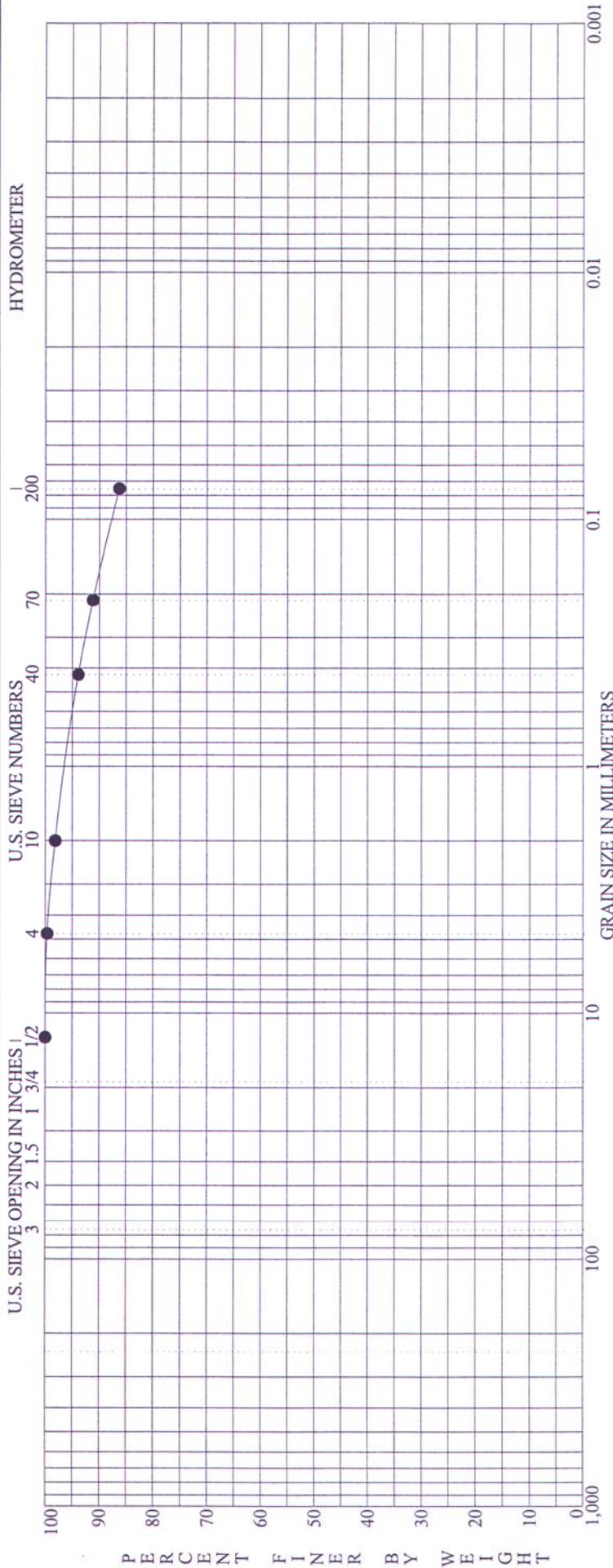
Specimen Identification - Depth

● B-13 S-2 3.5' to 5.5' 12.5000 1.3579 1.2 24.8 74.0

PROJECT: EMERALD PARKWAY EXTENSION, PHASE 8
 LOCATION: DUBLIN, OHIO
 JOB NO.: 011-12300-T00

ASTM D422 GRADATION CURVE

DATE: 7/30/09



BOULDERS	COBBLES	GRAVEL			SAND			SILT OR CLAY															
		coarse	fine	medium	coarse	medium	fine	LL	PL	PI	Cc	Cu											
Specimen Identification - Depth																							
●	B-14	S-1	1.0' to 3.0'	Brown mottled with gray and dark-gray silty clay, little fine to coarse sand, trace fine gravel.								MC%	23	LL	54	PL	20	PI	34	Cc		Cu	
Specimen Identification - Depth																							
●	B-14	S-1	1.0' to 3.0'	D100	12.5000	D95	0.6381	D60		D50		D10	0.4	%Gravel	0.4	%Sand	13.3	%Silt	86.4	%Clay			

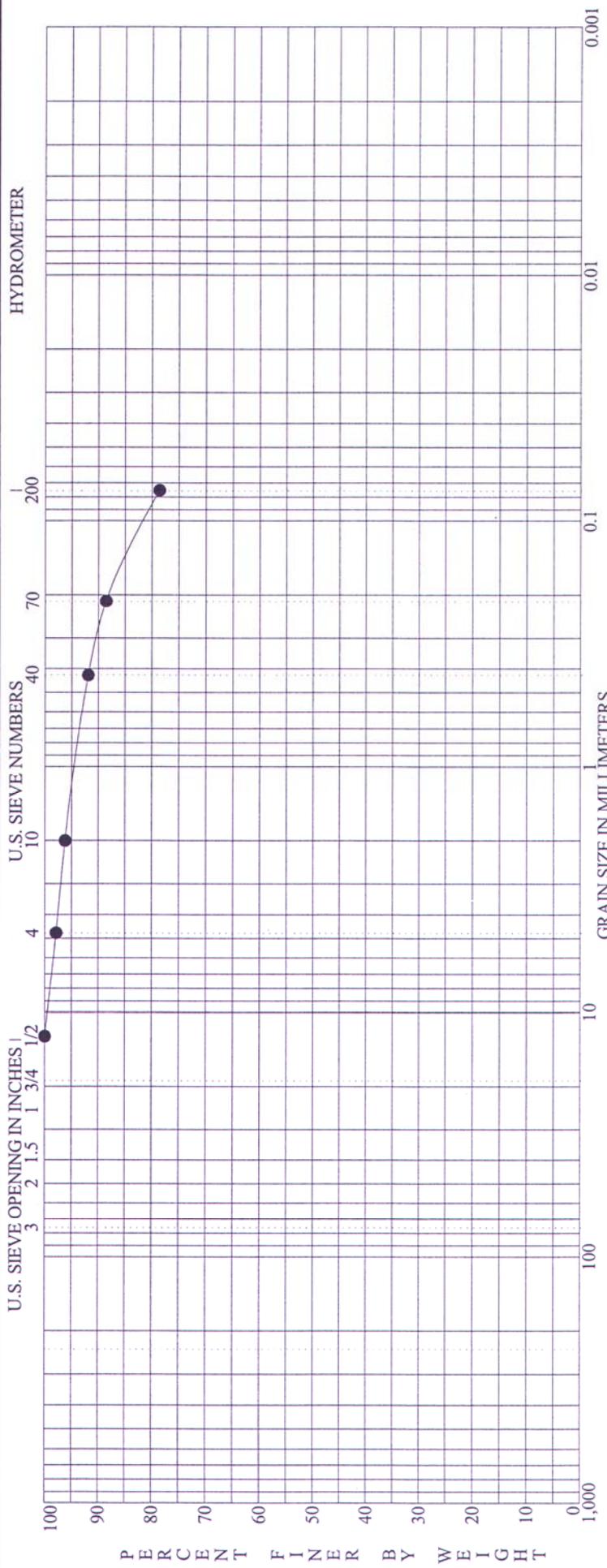
ASTM D422

GRADATION CURVE

PROJECT LOCATION JOB NO.

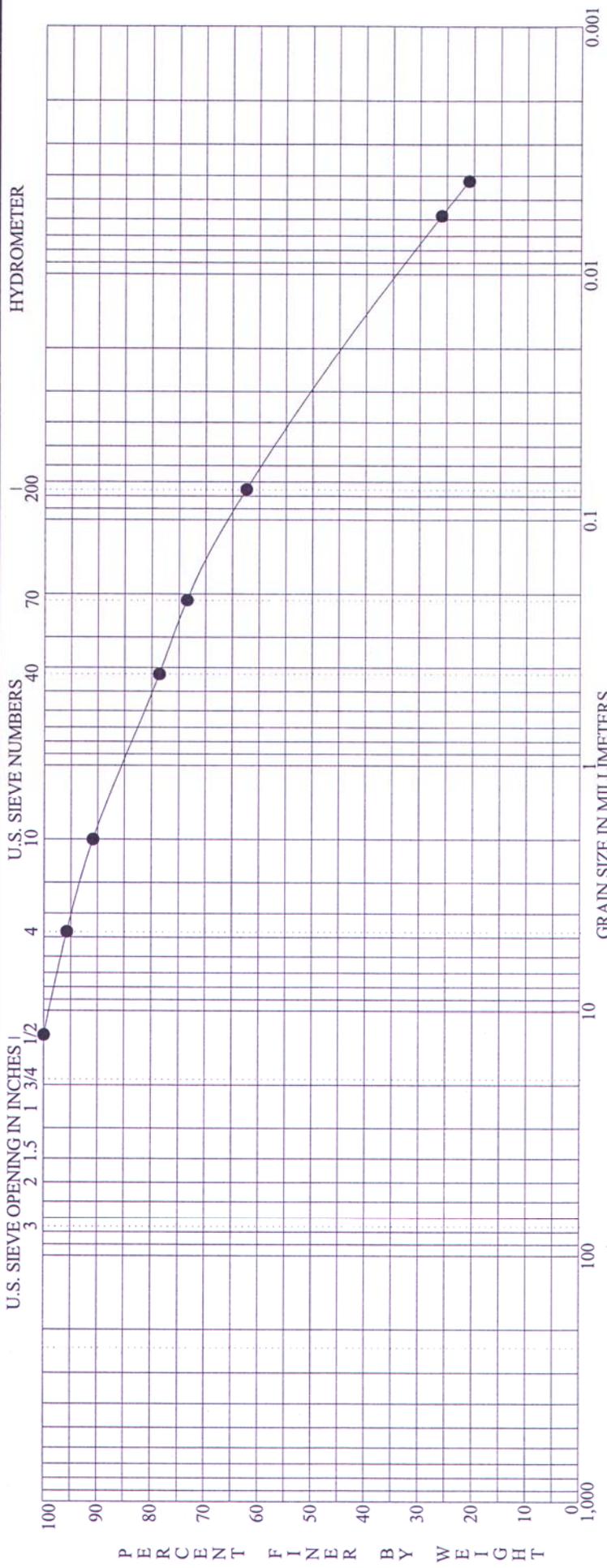
EMERALD PARKWAY EXTENSION, PHASE 8 DUBLIN, OHIO 011-12300-T00

DATE 7/30/09



BOULDERS	COBBLES	GRAVEL			SAND			SILT OR CLAY										
		coarse	fine	Classification	coarse	medium	fine	MC%	LL	PL	PI	Cc	Cu					
Specimen Identification - Depth																		
●	B-15	S-2	3.5' to 5.0'	Brown mottled with gray silty clay, little fine to coarse sand, trace fine gravel.									21	41	18	23		
Specimen Identification - Depth																		
●	B-15	S-2	3.5' to 5.0'	D100	D95	D60	D50	D10	%Gravel	%Sand	%Silt	%Clay						
				12.5000	1.2913				2.1	19.3		78.6						

ASTM D422 **GRADATION CURVE** PROJECT LOCATION JOB NO. **EMERALD PARKWAY EXTENSION, PHASE 8**
 DUBLIN, OHIO DATE 7/30/09



BOULDERS	COBBLES	GRAVEL			SAND			SILT OR CLAY												
		coarse	fine	Classification	coarse	medium	fine	MC%	LL	PL	PI	Cc	Cu							
Specimen Identification - Depth																				
●	C-1	S-2	6.0' to 7.3'	Gray clayey silt, some fine to coarse sand, trace fine gravel.									8	20	13	7				
Specimen Identification - Depth																				
●	C-1	S-2	6.0' to 7.3'	D100	4.1613	D95	0.0631	D60	0.0313	D50	0.0313	D10	4.3	%Gravel	33.3	%Sand	38.8	%Silt	23.7	%Clay

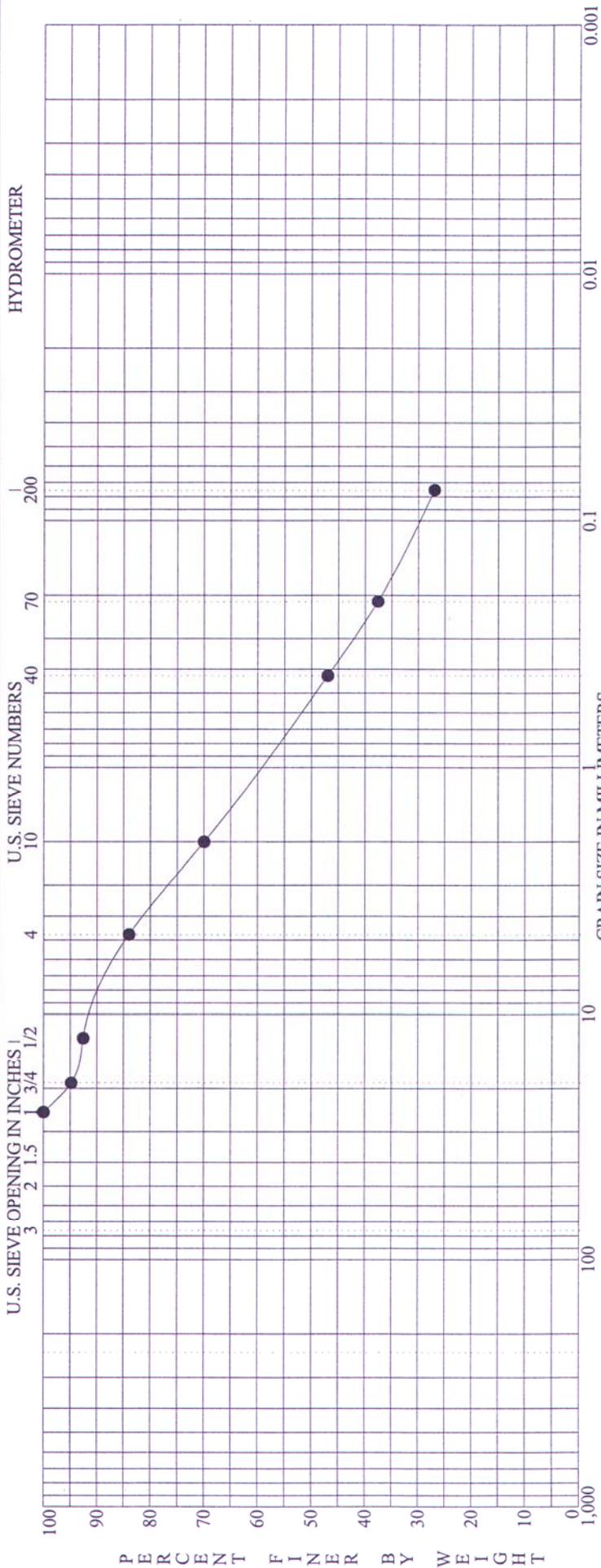
ASTM D422

GRADATION CURVE

PROJECT LOCATION
JOB NO.

EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO
011-12300-T00

DATE 7/30/09



BOULDERS	GRAVEL		SAND			SILT OR CLAY					
	coarse	fine	coarse	medium	fine	MC%	LL	PL	PI	Cc	Cu
Specimen Identification - Depth	Classification										
● C-1 S-6 16.0' to 17.3'	Gray fine to coarse sand, little fine to coarse gravel, little silt, few seams of clayey silt.										
Specimen Identification - Depth	D100	D95	D60	D50	D10	%Gravel	%Sand	%Silt	%Clay		
● C-1 S-6 16.0' to 17.3'	25.0000	19.2007	1.0199	0.5201	16.0	57.0	27.0				

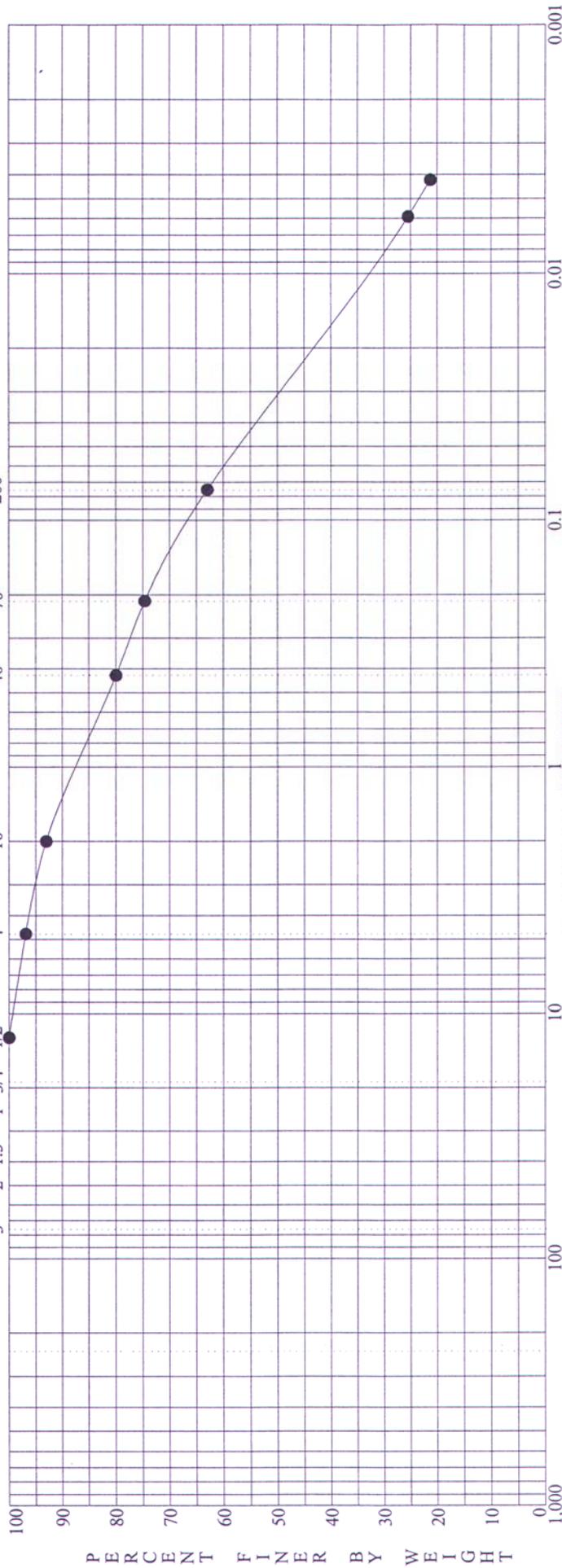
ASTM D422 **GRADATION CURVE** PROJECT LOCATION JOB NO. **EMERALD PARKWAY EXTENSION, PHASE 8**
 DUBLIN, OHIO 011-12300-T00 DATE 7/30/09



HYDROMETER

U.S. SIEVE NUMBERS

U.S. SIEVE OPENING IN INCHES



PERCENT FINER BY WEIGHT

GRAIN SIZE IN MILLIMETERS

BOULDERS	COBBLES	GRAVEL		SAND			SILT OR CLAY			
		coarse	fine	coarse	medium	fine	MC%	LL	PL	PI

Specimen Identification - Depth
 ● C-2 S-1 3.5' to 4.8'
 Gray mottled with brown clayey silt, some fine to coarse sand, trace fine gravel.

Specimen Identification - Depth	D100	D95	D60	D50	D10	%Gravel	%Sand	%Silt	%Clay
● C-2 S-1 3.5' to 4.8'	12.5000	3.1243	0.0612	0.0311		3.1	33.9	39.5	23.5

ASTM D422

GRADATION CURVE

PROJECT LOCATION
 JOB NO.

EMERALD PARKWAY EXTENSION, PHASE 8

DUBLIN, OHIO

011-12300-T00

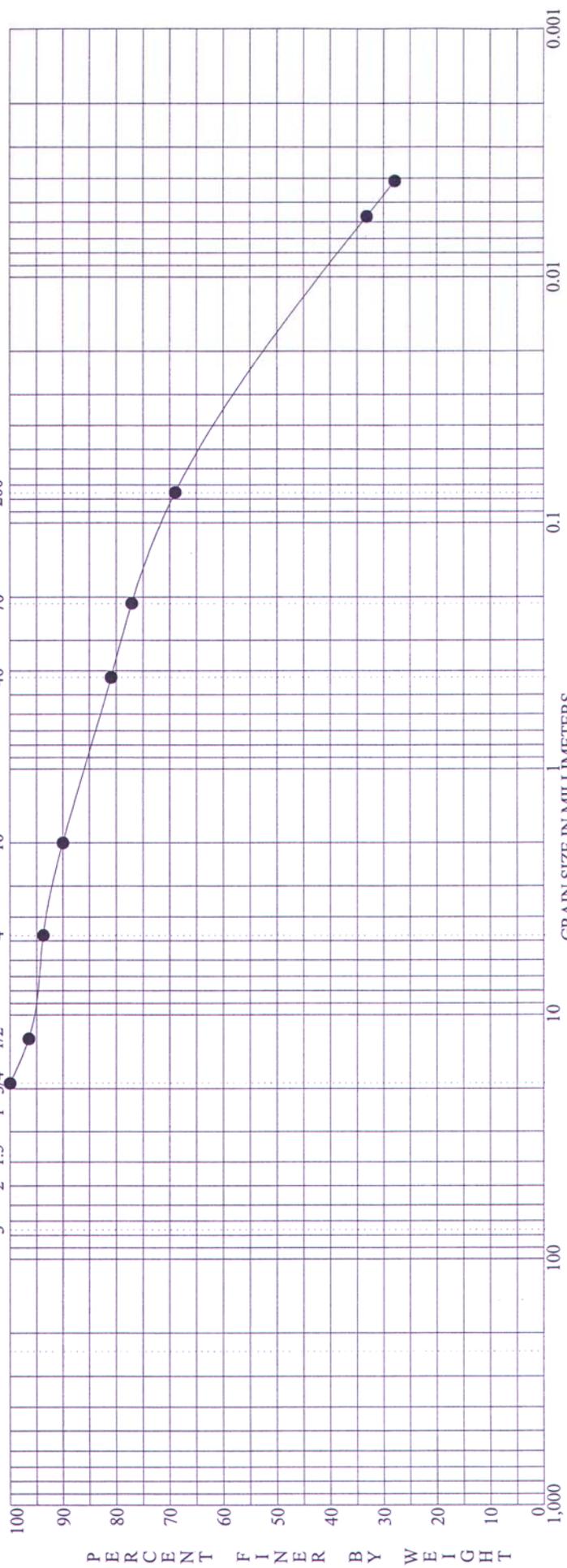
DATE 7/30/09



HYDROMETER

U.S. SIEVE NUMBERS

U.S. SIEVE OPENING IN INCHES | 3 | 2 | 1.5 | 1 | 3/4 | 1/2



PERCENT FINER BY WEIGHT

GRAIN SIZE IN MILLIMETERS

BOULDERS	COBBLES	GRAVEL		SAND			SILT OR CLAY													
		coarse	fine	coarse	medium	fine	MC%	LL	PL	PI	Cc	Cu								
Specimen Identification - Depth																				
●	C-2	S-3	8.5' to 9.8'	Gray clayey silt, some fine to coarse sand, trace fine gravel.																
Specimen Identification - Depth																				
●	C-2	S-3	8.5' to 9.8'	D100	19.0000	D95	7.4216	D60	0.0392	D50	0.0191	D10	6.3	%Gravel	24.7	%Sand	37.9	%Silt	31.1	%Clay

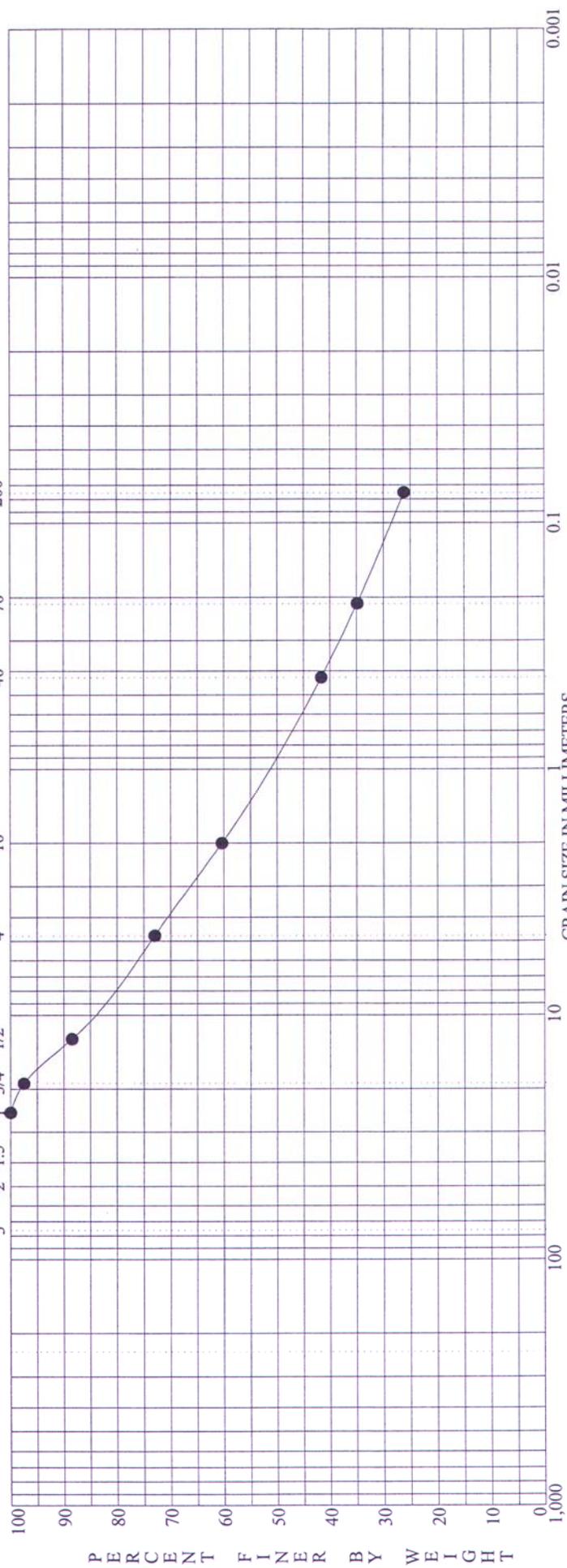
ASTM D422	GRADATION CURVE	PROJECT	EMERALD PARKWAY EXTENSION, PHASE 8
		LOCATION	DUBLIN, OHIO
		JOB NO.	011-12300-T00
		DATE	7/30/09



HYDROMETER

U.S. SIEVE NUMBERS

U.S. SIEVE OPENING IN INCHES



PERCENT FINER BY WEIGHT

GRAIN SIZE IN MILLIMETERS

BOULDERS	COBBLES	GRAVEL		SAND			SILT OR CLAY					
		coarse	fine	coarse	medium	fine	MC%	LL	PL	PI	Cc	Cu
Classification Brown and gray fine to coarse sand, some fine to coarse gravel, some silt.												
Specimen Identification - Depth		D100	D95	D60	D50	D10	%Gravel	%Sand	%Silt	%Clay		
C-2	S-4	11.0' to 12.5'	25.0000	16.9222	1.9338	0.8450	27.0	46.8	26.2			

PROJECT LOCATION
JOB NO.

GRADATION CURVE

ASTM D422

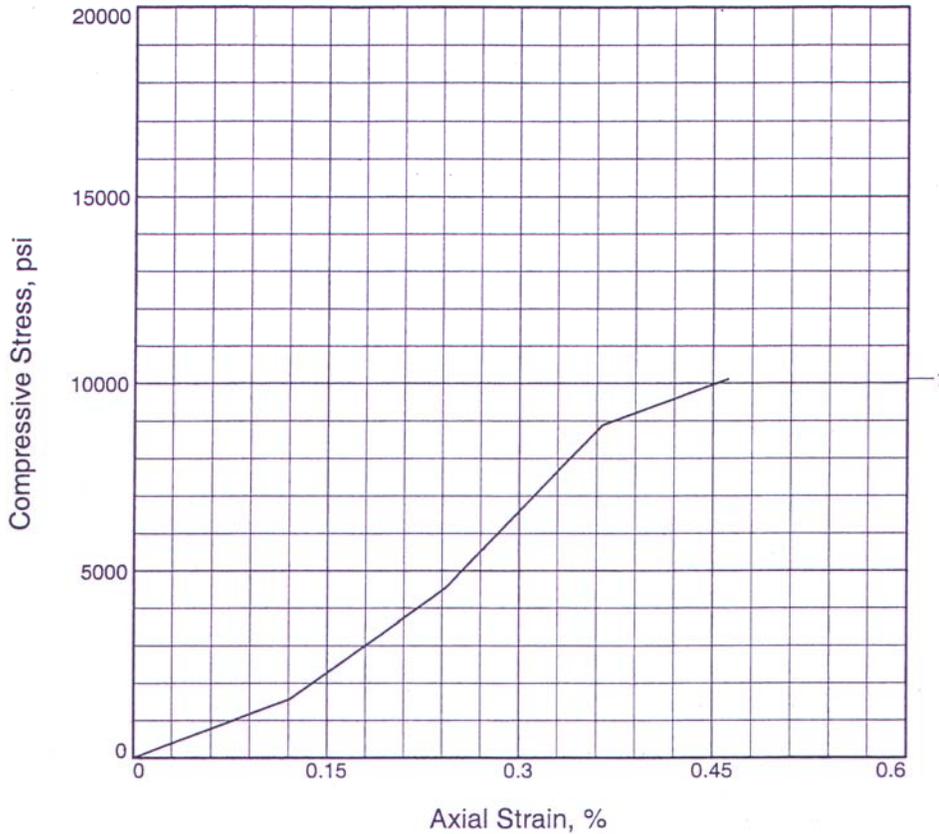
EMERALD PARKWAY EXTENSION, PHASE 8

DUBLIN, OHIO

011-12300-T00

DATE 7/30/09

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psi	10110.30			
Undrained shear strength, psi	5055.15			
Failure strain, %	0.5			
Strain rate, in./min.	0.04			
Water content, %	0.1			
Wet density, pcf	161.7			
Dry density, pcf	161.5			
Saturation, %	7.5			
Void ratio	0.0436			
Specimen diameter, in.	1.98			
Specimen height, in.	4.12			
Height/diameter ratio	2.08			

Description: Hard gray limestone.

LL = **PL =** **PI =** **Assumed GS= 2.7** **Type: Rock Core**

Project No.: 011.12300.T00

Date Sampled: 6/23/09

Remarks:

Client:

Project: EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO

Location: B-1

Sample Number: S-5 **Depth:** 19.65' to 20.15'

UNCONFINED COMPRESSION TEST

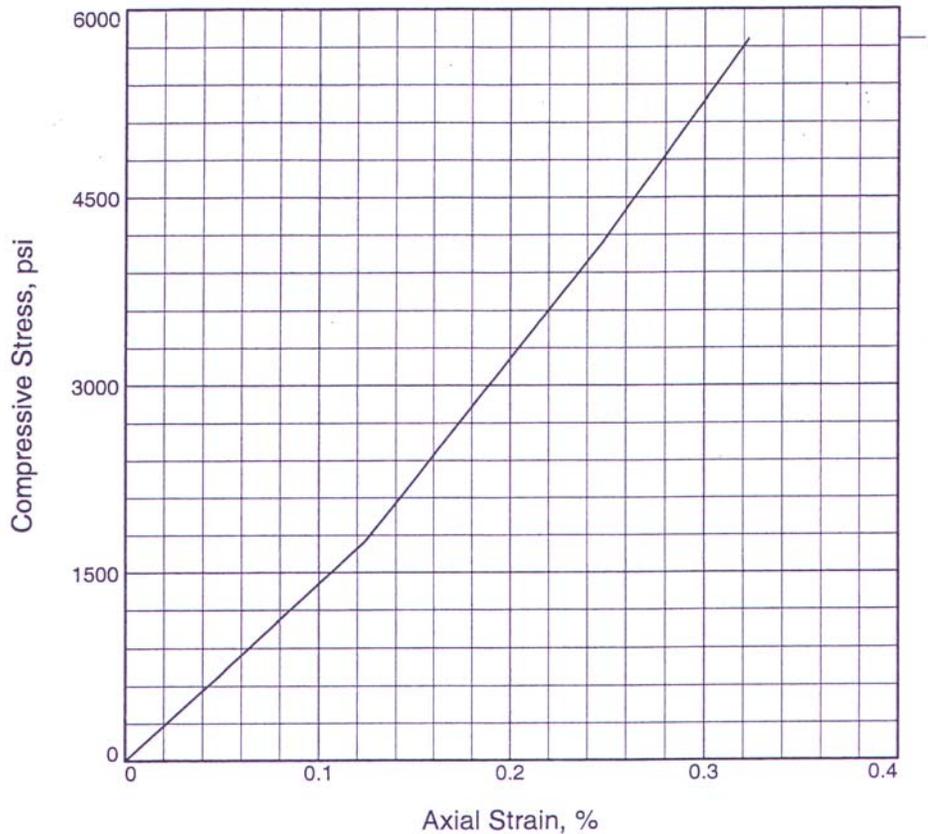
BBC&M Engineering, Inc.

1

Tested By: PJM

Checked By: JJ

UNCONFINED COMPRESSION TEST



Sample No.	1		
Unconfined strength, psi	5759.93		
Undrained shear strength, psi	2879.97		
Failure strain, %	0.3		
Strain rate, in./min.	0.04		
Water content, %	0.1		
Wet density, pcf	163.5		
Dry density, pcf	163.4		
Saturation, %	9.7		
Void ratio	0.0319		
Specimen diameter, in.	1.98		
Specimen height, in.	4.03		
Height/diameter ratio	2.03		

Description: Hard gray limestone.

LL = PL = PI = Assumed GS= 2.7 Type: Rock Core

Project No.: 011.12300.T00

Date Sampled: 6/23/09

Remarks:

Client:

Project: EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO

Location: B-1

Sample Number: S-6 **Depth:** 22.65' to 23.15'

UNCONFINED COMPRESSION TEST

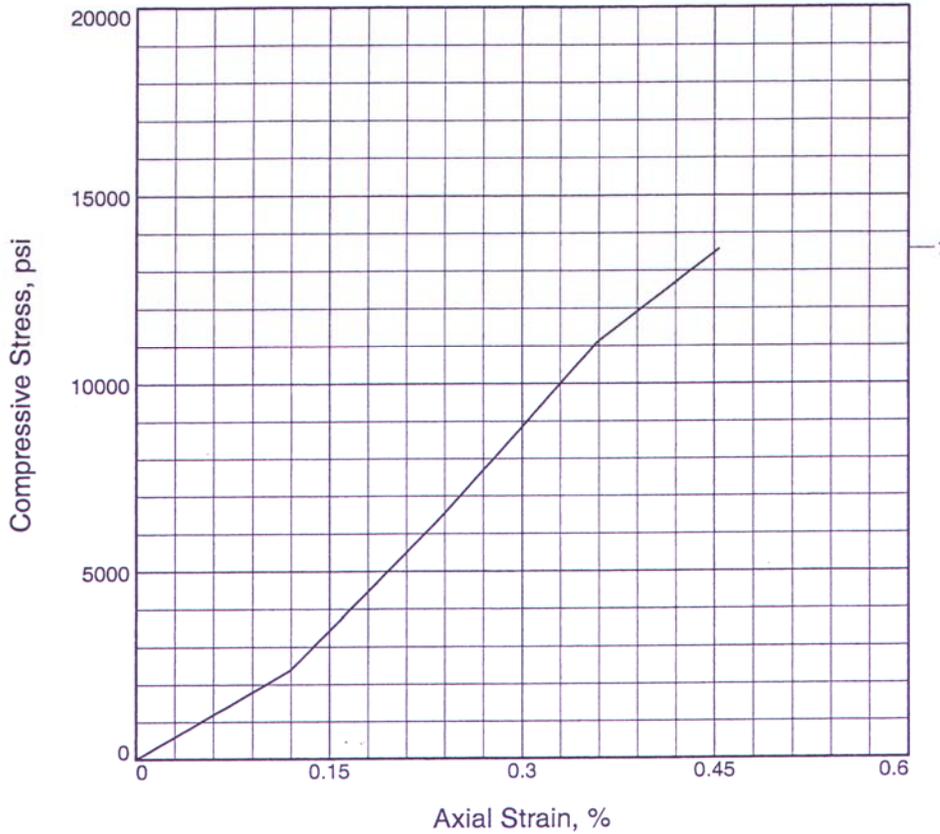
BBC&M Engineering, Inc.

1

Tested By: PJM

Checked By: JJ

UNCONFINED COMPRESSION TEST



Sample No.	1		
Unconfined strength, psi	13576.13		
Undrained shear strength, psi	6788.06		
Failure strain, %	0.5		
Strain rate, in./min.	0.04		
Water content, %	0.1		
Wet density, pcf	166.9		
Dry density, pcf	166.7		
Saturation, %	33.6		
Void ratio	0.0112		
Specimen diameter, in.	1.98		
Specimen height, in.	4.19		
Height/diameter ratio	2.11		

Description: Hard gray limestone.

LL =	PL =	PI =	Assumed GS= 2.7	Type: Rock Core
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Project No.: 011.12300.T00

Date Sampled: 6/23/09

Remarks:

Client:

Project: EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO

Location: B-2

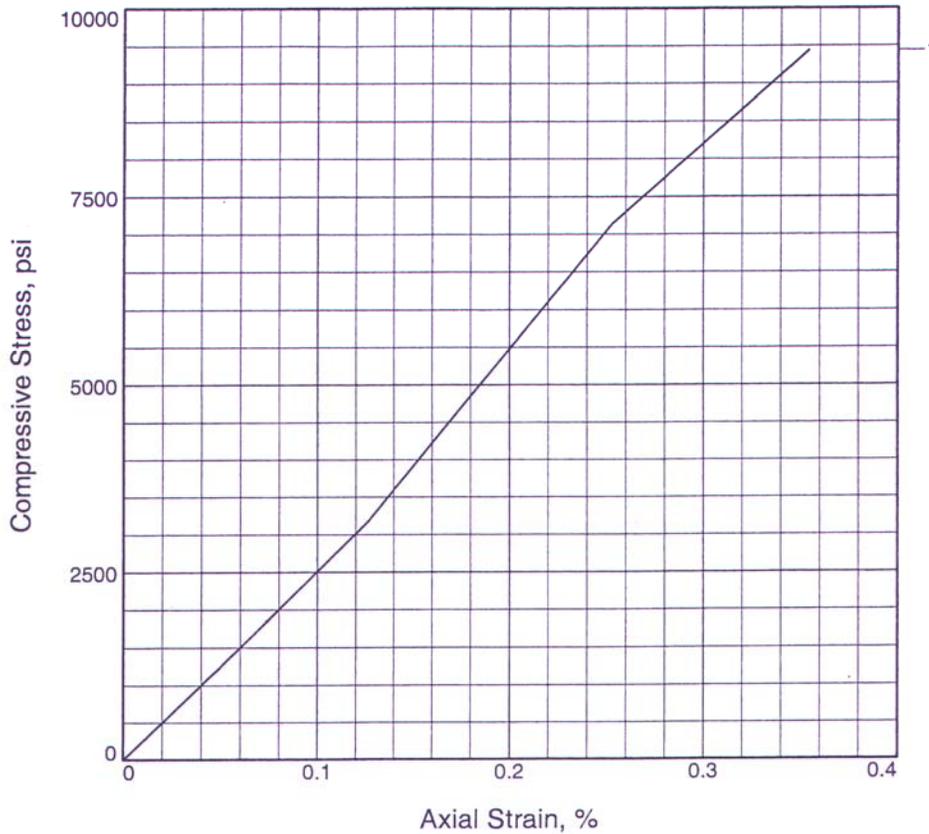
Sample Number: S-3 **Depth:** 10.25' to 10.75'

UNCONFINED COMPRESSION TEST

BBC&M Engineering, Inc.

Tested By: PJM Checked By: JJ

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psi	9440.24			
Undrained shear strength, psi	4720.12			
Failure strain, %	0.4			
Strain rate, in./min.	0.04			
Water content, %	0.1			
Wet density, pcf	166.3			
Dry density, pcf	166.1			
Saturation, %	26.1			
Void ratio	0.0148			
Specimen diameter, in.	1.98			
Specimen height, in.	3.95			
Height/diameter ratio	2.00			

Description: Hard gray limestone.

LL = PL = PI = Assumed GS= 2.7 Type: Rock Core

Project No.: 011.12300.T00

Date Sampled: 6/23/09

Remarks:

Client:

Project: EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO

Location: B-2

Sample Number: S-4 **Depth:** 14.75' to 15.25'

UNCONFINED COMPRESSION TEST

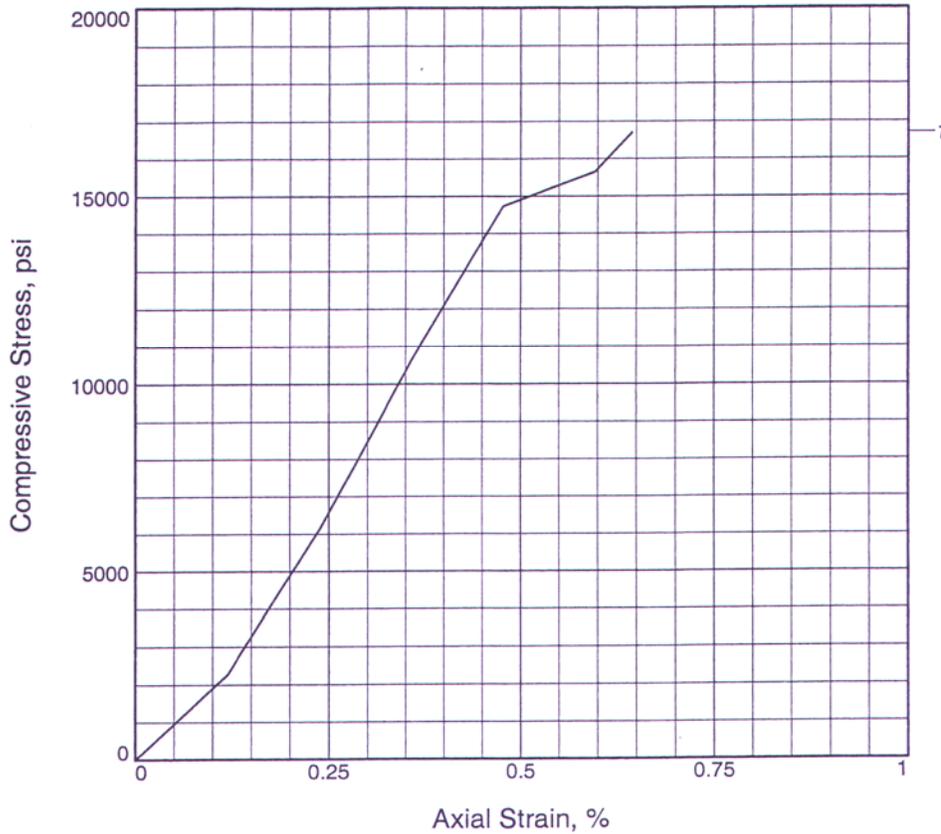
BBC&M Engineering, Inc.

1

Tested By: PJM

Checked By: JJ

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psi	16701.06			
Undrained shear strength, psi	8350.53			
Failure strain, %	0.6			
Strain rate, in./min.	0.04			
Water content, %	0.3			
Wet density, pcf	167.2			
Dry density, pcf	166.7			
Saturation, %	73.2			
Void ratio	0.0113			
Specimen diameter, in.	1.97			
Specimen height, in.	4.19			
Height/diameter ratio	2.12			

Description: Hard gray limestone.

LL =	PL =	PI =	Assumed GS= 2.7	Type: Rock Core
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Project No.: 011.12300.T00

Date Sampled: 6/23/09

Remarks:

Client:

Project: EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO

Location: B-3

Sample Number: S-3 **Depth:** 10.30' to 10.80'

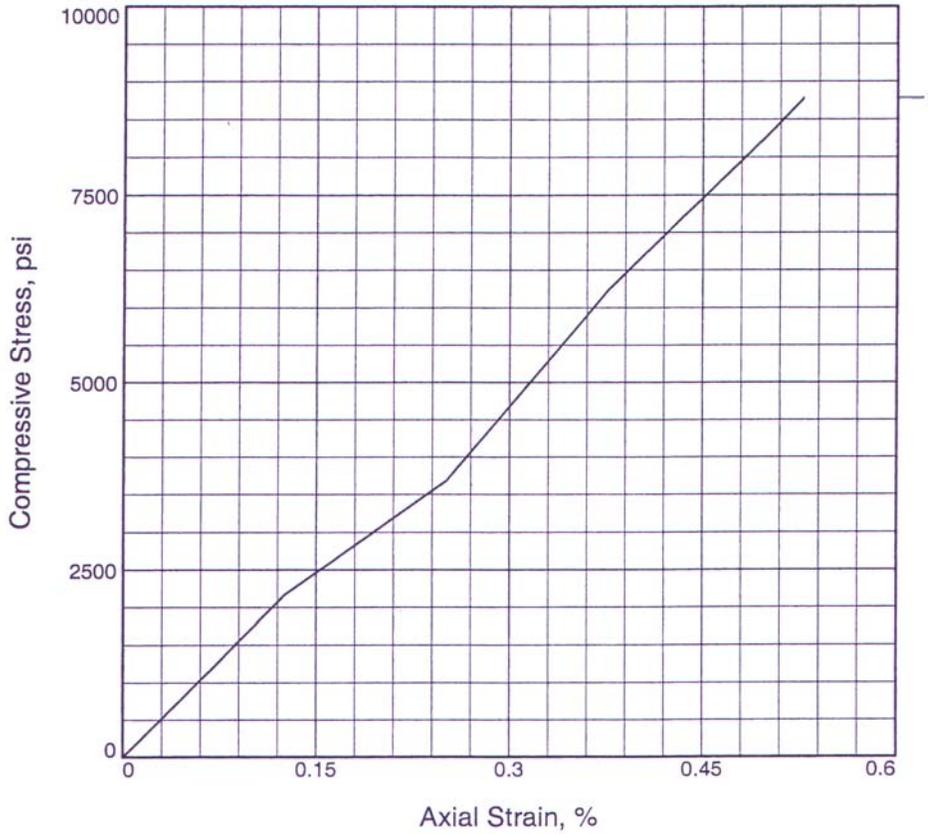
UNCONFINED COMPRESSION TEST

BBC&M Engineering, Inc.

1

Tested By: PJM **Checked By:** JJ

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psi	8784.16			
Undrained shear strength, psi	4392.08			
Failure strain, %	0.5			
Strain rate, in./min.	0.04			
Water content, %	0.2			
Wet density, pcf	164.4			
Dry density, pcf	164.0			
Saturation, %	23.4			
Void ratio	0.0277			
Specimen diameter, in.	1.98			
Specimen height, in.	3.98			
Height/diameter ratio	2.01			

Description: Hard gray limestone.

LL = **PL =** **PI =** **Assumed GS= 2.7** **Type: Rock Core**

Project No.: 011.12300.T00

Date Sampled: 6/23/09

Remarks:

Client:

Project: EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO

Location: B-4

Sample Number: S-3 **Depth:** 12.0' to 12.5'

UNCONFINED COMPRESSION TEST

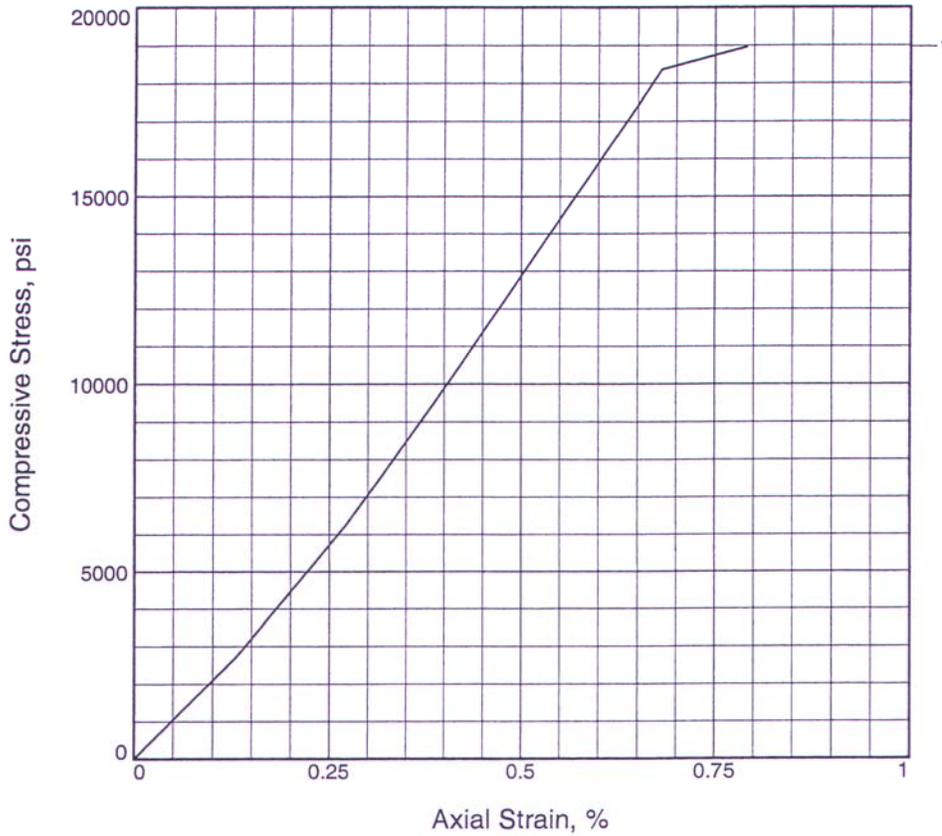
BBC&M Engineering, Inc.

1

Tested By: EG

Checked By: JJ/PJM

UNCONFINED COMPRESSION TEST



Sample No.	1		
Unconfined strength, psi	18958.90		
Undrained shear strength, psi	9479.45		
Failure strain, %	0.8		
Strain rate, in./min.	0.04		
Water content, %	0.2		
Wet density, pcf	167.5		
Dry density, pcf	167.2		
Saturation, %	68.6		
Void ratio	0.0084		
Specimen diameter, in.	1.98		
Specimen height, in.	3.67		
Height/diameter ratio	1.85		

Description: Hard gray limestone.

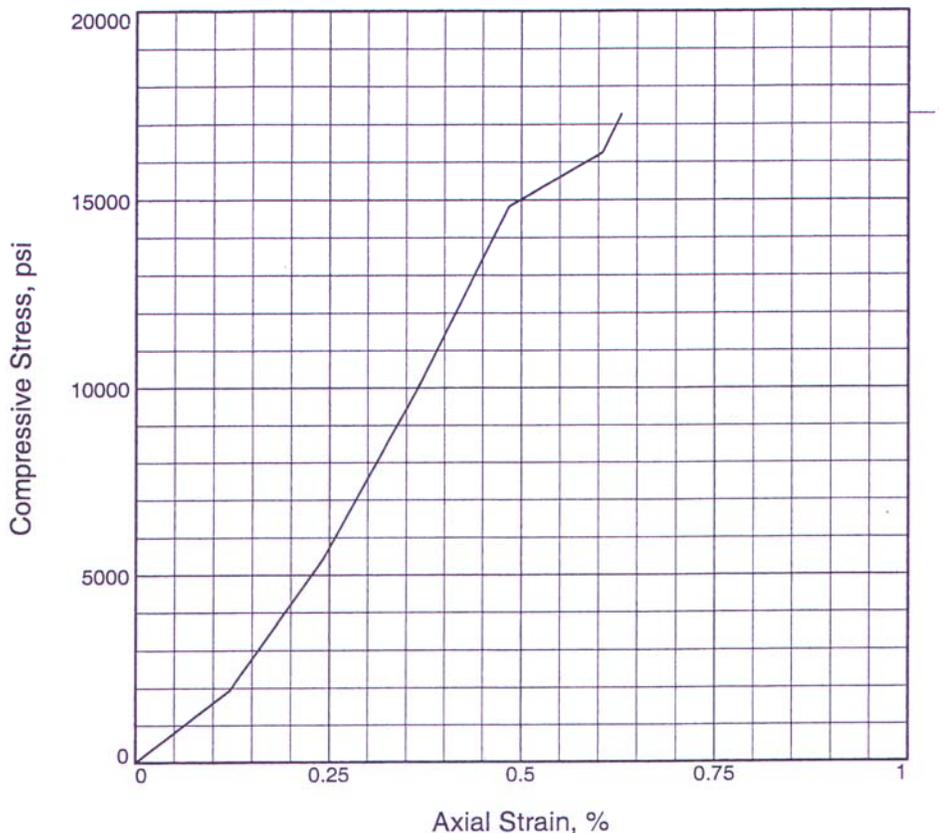
LL = **PL =** **PI =** **Assumed GS= 2.7** **Type: Rock Core**

<p>Project No.: 011.12300.T00</p> <p>Date Sampled: 6/23/09</p> <p>Remarks:</p>	<p>Client:</p> <p>Project: EMERALD PARKWAY EXTENSION, PHASE 8 DUBLIN, OHIO</p> <p>Location: B-4</p> <p>Sample Number: S-4 Depth: 13.5' to 14.0'</p> <p style="text-align: center;">UNCONFINED COMPRESSION TEST</p> <p style="text-align: center; font-size: 1.2em;">BBC&M Engineering, Inc.</p>
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1

Tested By: PJM **Checked By:** JJ

UNCONFINED COMPRESSION TEST



Sample No.	1		
Unconfined strength, psi	17271.39		
Undrained shear strength, psi	8635.69		
Failure strain, %	0.6		
Strain rate, in./min.	0.04		
Water content, %	0.1		
Wet density, pcf	169.5		
Dry density, pcf	169.3		
Saturation, %	-95.6		
Void ratio	-0.0042		
Specimen diameter, in.	1.98		
Specimen height, in.	4.13		
Height/diameter ratio	2.09		

Description: Hard gray limestone.

LL = **PL =** **PI =** **Assumed GS= 2.7** **Type: Rock Core**

Project No.: 011.12300.T00

Date Sampled: 6/23/09

Remarks:

Client:

Project: EMERALD PARKWAY EXTENSION, PHASE 8
DUBLIN, OHIO

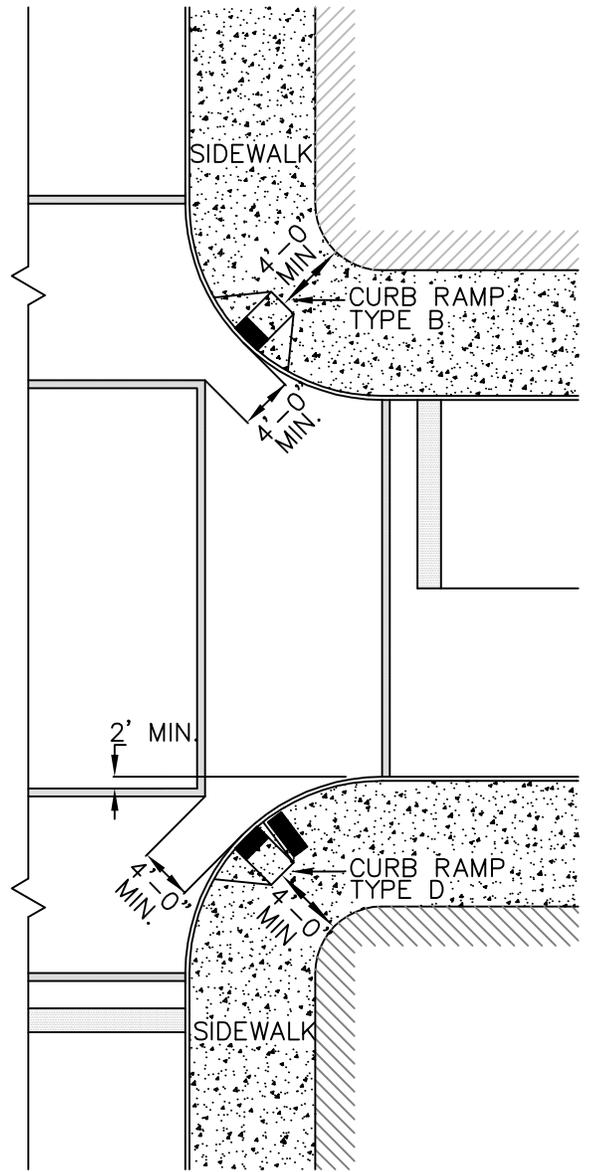
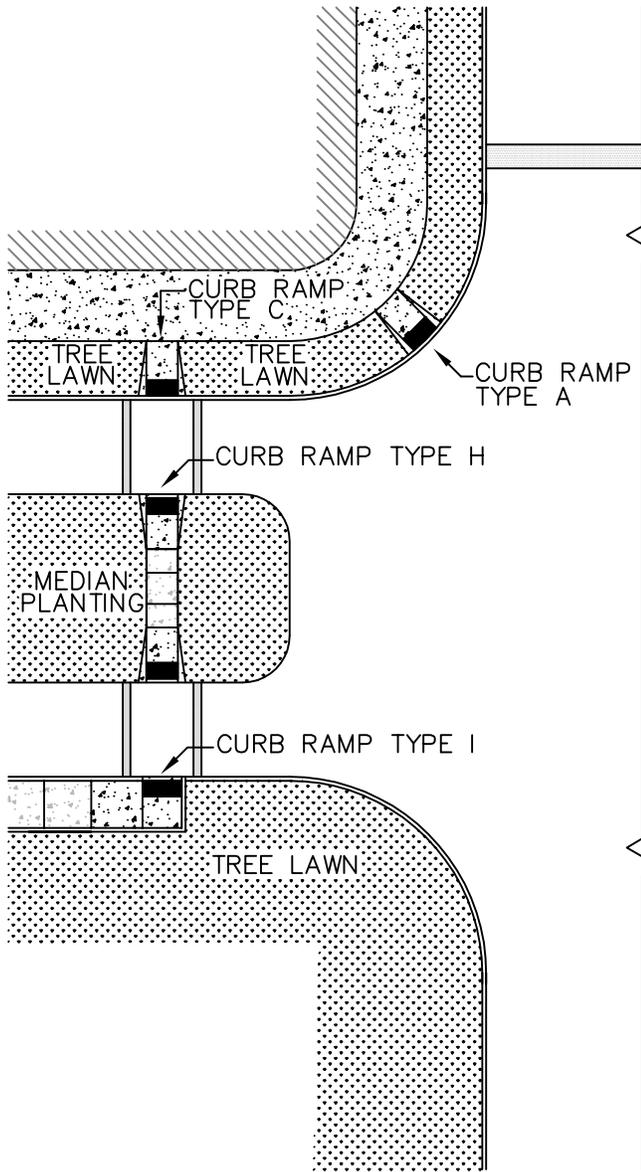
Location: B-5

Sample Number: S-3 **Depth:** 8.8' to 9.3'

UNCONFINED COMPRESSION TEST

BBC&M Engineering, Inc.

F. STANDARD DRAWINGS



Ramp Types E, F, G, H not shown.

Date: 09/18/2006



CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

**TYPICAL LOCATION PLAN
FOR SIDEWALK CURB RAMPS**

SHEET 1 OF 1

DWG. NO. **PD-01**

GENERAL NOTES, SIDEWALK CURB RAMPS

1. CURB RAMP COMPONENTS ASSEMBLY – THE CURB RAMP INCLUDES THE RAMPS, FLARED SIDES, LANDINGS AND ROLLED EDGES.
2. CURB RAMP TYPE – CURB RAMPS SHALL BE SPECIFIED BY THE APPROPRIATE TYPE AND SHALL BE PERPENDICULAR TO THE CURB EXCEPT TYPES E & F
TYPE A – DIAGONAL RAMP WITH FLARES IN TREE LAWN
TYPE B – DIAGONAL RAMP WITH FLARES
TYPE C – PERPENDICULAR RAMP IN TREE LAWN
TYPE D – PERPENDICULAR RAMP OBSTRUCTED ON ONE SIDE
(WITH PRIOR WRITTEN CITY APPROVAL ONLY)
TYPE E – RAMP WITH RECESSED LOWER LANDING FOR ALLEYS AND DRIVEWAYS
(WITH TREE LAWN)
TYPE F – RAMP WITH RECESSED LOWER LANDING FOR ALLEYS AND DRIVEWAYS
(NO TREE LAWN)
TYPE G – PARALLEL (OFF-STREET LANDING) WITH 2 TRANSITION RAMPS (WITH PRIOR WRITTEN CITY APPROVAL ONLY)
TYPE H – MEDIAN RAMP WITH CENTER LANDING
TYPE I – COMBINED PERPENDICULAR AND PARALLEL RAMP ONE DIRECTION
3. RAMP RUNNING SLOPE – THE RAMP RUNNING SLOPE SHALL BE 1:20 (5%) TO 1:13 (7.7%).
4. RAMP CROSS SLOPE – THE MAXIMUM CROSS SLOPE SHALL BE 1:64 (1.56%, 3/16 INCH PER FOOT).
5. PERPENDICULAR RAMP WIDTH – THE MINIMUM WIDTH OF A SIDEWALK RAMP SHALL BE 4-FEET AND OF A BIKE PATH RAMP SHALL BE 8-FEET. THE WIDTH MAY BE REDUCED TO A MINIMUM OF 3-FEET WITH PRIOR WRITTEN CITY APPROVAL IF CLEARANCE RESTRICTIONS EXIST.
6. PARALLEL RAMP WIDTH – TYPE H RAMP SHALL BE A MINIMUM OF 4-FEET BY 5-FEET & 5-FEET BY 5-FEET RESPECTIVELY, PER STANDARD DRAWINGS.
7. ALL JOINTS BETWEEN NEW AND EXISTING MATERIALS SHALL BE FLUSH.
8. FLARES – THE LENGTH OF THE FLARE AT THE FACE OF CURB SHALL BE A MAXIMUM OF 10% OR 10 TIMES THE CURB HEIGHT, WHICHEVER IS LESS.
9. LANDINGS – LANDINGS SHALL BE A MINIMUM OF 4-FEET BY 4-FEET WITH A 1:64 (1.56%) CROSS SLOPE FOR ALL CURB RAMP TYPES EXCEPT PARALLEL CURB RAMPS. OFF STREET LANDINGS FOR PARALLEL CURB RAMPS SHALL BE A MINIMUM OF 4-FEET BY 5-FEET AS INDICATED IN THE STANDARD DRAWINGS. LANDINGS ARE REQUIRED AS FOLLOWS:
 - A. TOP LANDING – CURB RAMP TYPES A, B, C AND G SHALL HAVE LANDINGS AT THE TOP OF THE RAMP.
 - B. LOWER RECESSED LANDING – CURB RAMP TYPE E AND F SHALL HAVE A RECESSED LANDING AT THE BOTTOM OF THE RAMP WHERE IT INTERSECTS THE CURB LINE.

Date: 03/15/2011



CITY OF DUBLIN™.
ENGINEERING

STANDARD DRAWING

CURB RAMP
GENERAL NOTES

SHEET 1 OF 2

DWG. NO. **PD-02**

C. LANDING AT INTERSECTING SIDEWALKS – WHEREVER SIDEWALKS INTERSECT THERE SHALL BE A LANDING MEETING THE ABOVE REQUIREMENTS. (GENERAL NOTES CONTINUED ON SHEET 2)

10. STREET COUNTER SLOPE – THE COUNTER SLOPE AT THE BASE OF THE RAMP SHALL BE A MAXIMUM OF 1:20 OR 5% FOR A MINIMUM OF 2–FEET.
11. MAXIMUM DIFFERENTIAL BETWEEN RAMP RUNNING SLOPE AND GUTTER PAN SHALL BE 13%, THE PREFERRED DIFFERENTIAL IS 11%.
12. SURFACES – RAMP AND FLARE SURFACES MUST BE STABLE AND SLIP RESISTANT. RAMPS SHALL BE MEDIUM BROOMED TRANSVERSE TO THE DIRECTION OF TRAVEL. GRATINGS, VALVE BOXES, AND UTILITY BOXES SHALL NOT BE LOCATED IN THE RAMP, LANDING, OR TRANSITION AREAS.
13. DETECTABLE WARNINGS SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF DUBLIN STANDARD DRAWING PD–03. DETCTABLE WARNINGS SHALL BE PROVIDED WHEREVER A CURB RAMP CROSSES A PUBLIC VEHICULAR WAY.
14. THE PEDESTRIAN WALKWAY WITHIN THE STREET PAVEMENT, AT LEAST 7–FEET WIDE, BETWEEN OPPOSING RAMPS SHALL HAVE A CROSS–SLOPE (THE LONGITUDINAL STREET SLOPE) OF NO GREATER THAN 2%. VERTICAL STREET CURVES SHALL BE INSTALLED AS NEEDED.
15. GRAVEL BEDDING SHALL HAVE A MINIMUM DEPTH OF 4 INCHES AND SHOULD NOT EXCEED A DEPTH OF 6 INCHES.

Date: 03/15/2011



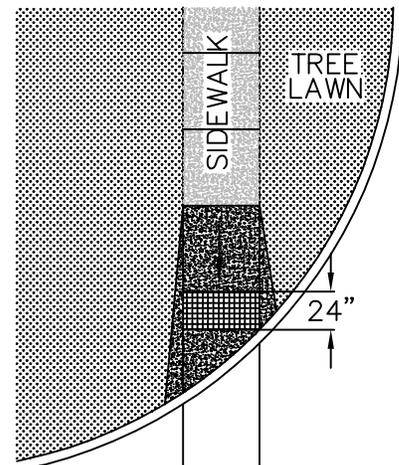
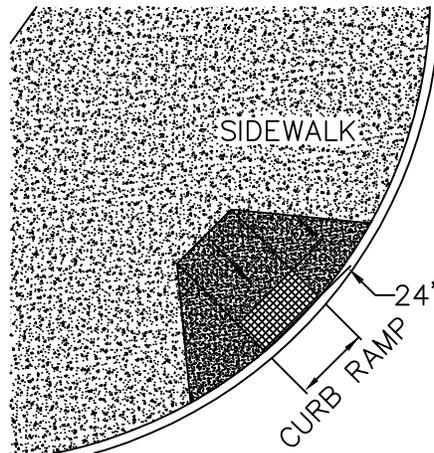
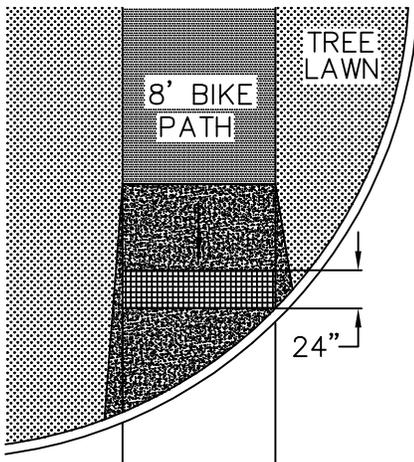
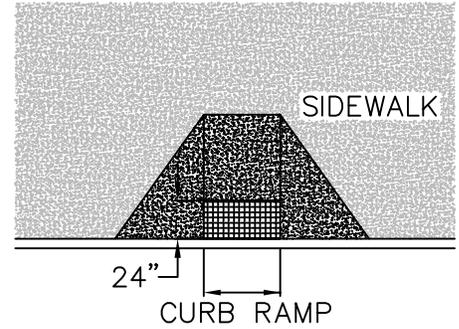
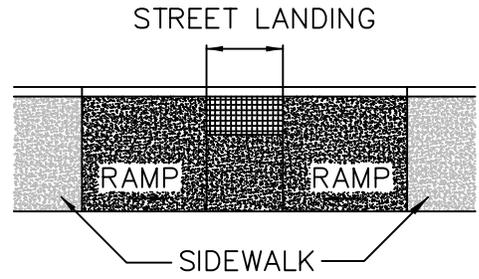
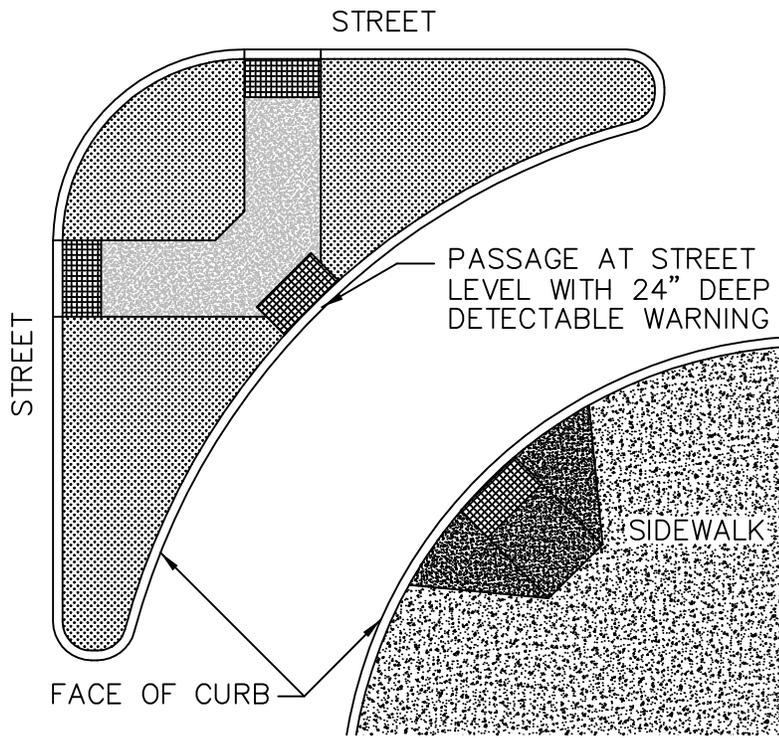
CITY OF DUBLIN™.
ENGINEERING

STANDARD DRAWING

***CURB RAMP
GENERAL NOTES***

SHEET 1 OF 2

DWG. NO. ***PD-02***



NOTES:

1. DETECTABLE WARNINGS SHALL BE PROVIDED WHEREVER A CURB RAMP CROSSES A VEHICULAR WAY, EXCLUDING UNSIGNALIZED DRIVEWAY CROSSINGS.
2. DETECTABLE WARNINGS SHALL BE PROVIDED 24 INCHES IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE. THE DETECTABLE WARNING SHALL BE LOCATED ADJACENT TO THE CURB LINE.
3. DETECTABLE WARNINGS SHALL BE PLACED 2" TO 4" BEHIND FACE OF CURB.

Date: 09/18/2006



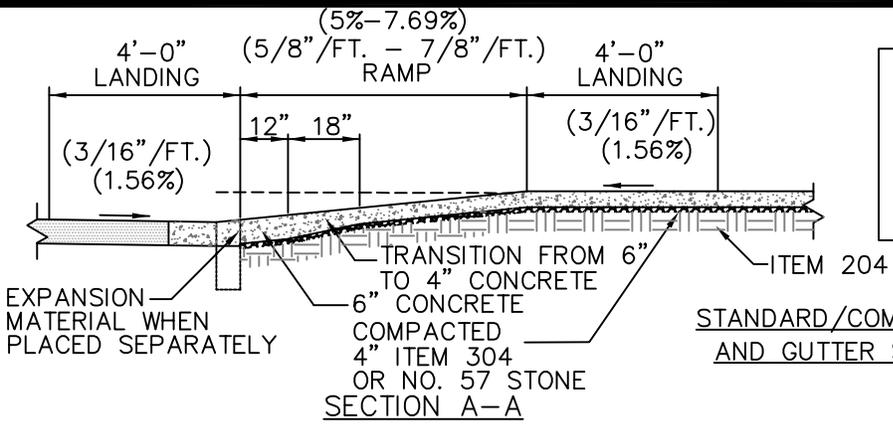
CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

DETECTABLE WARNINGS

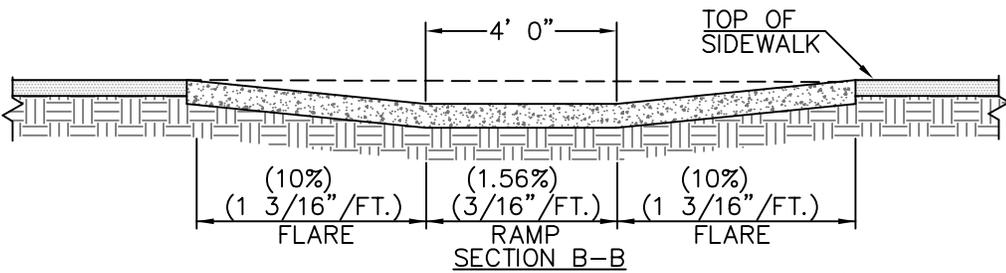
SHEET 1 OF 1

DWG. NO. **PD-03**

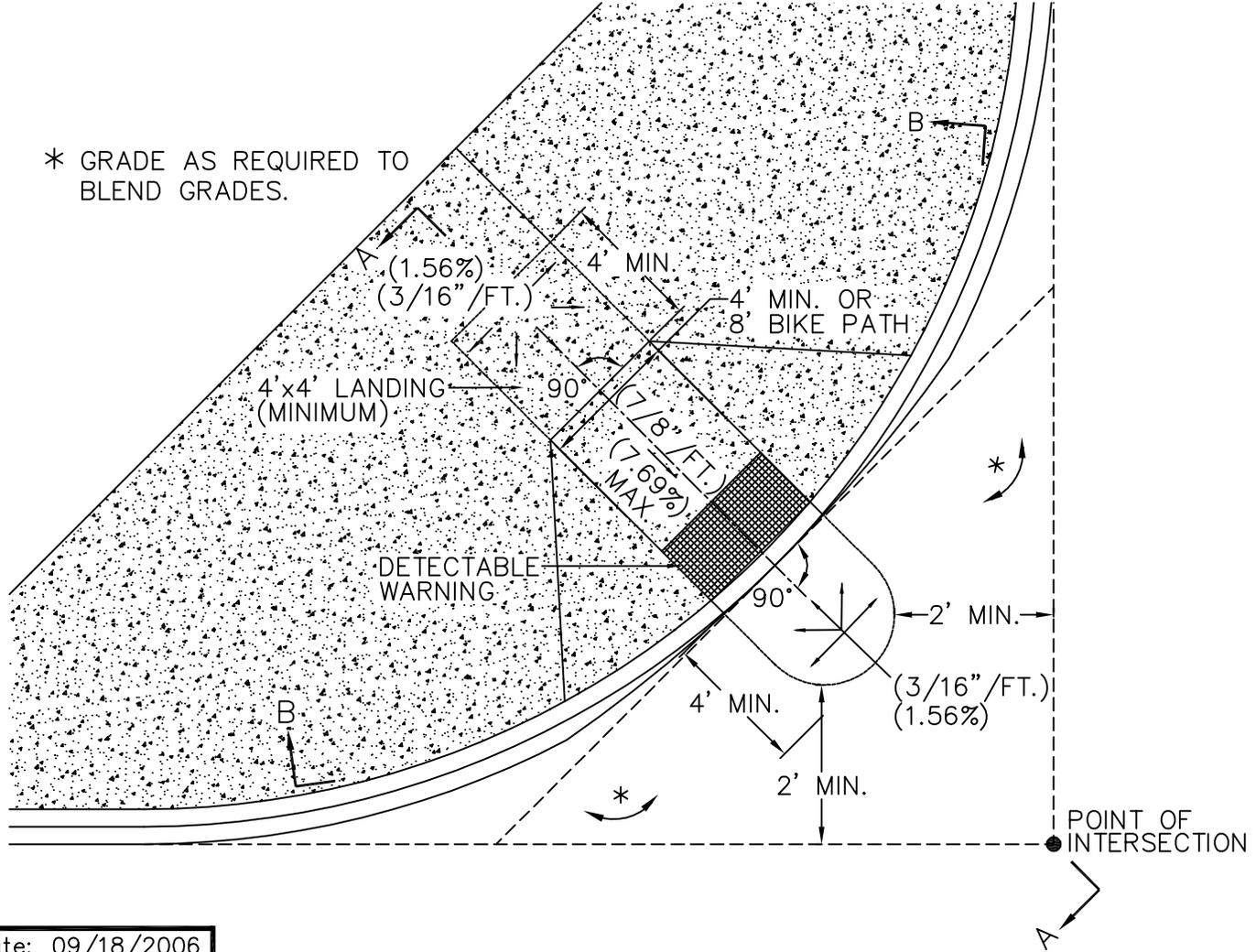


NOTE:
SEE STANDARD DRAWING
PD-03 FOR DETECTABLE
WARNINGS DETAILS.

STANDARD/COMBINED CURB
AND GUTTER SECTION



* GRADE AS REQUIRED TO
BLEND GRADES.



Date: 09/18/2006



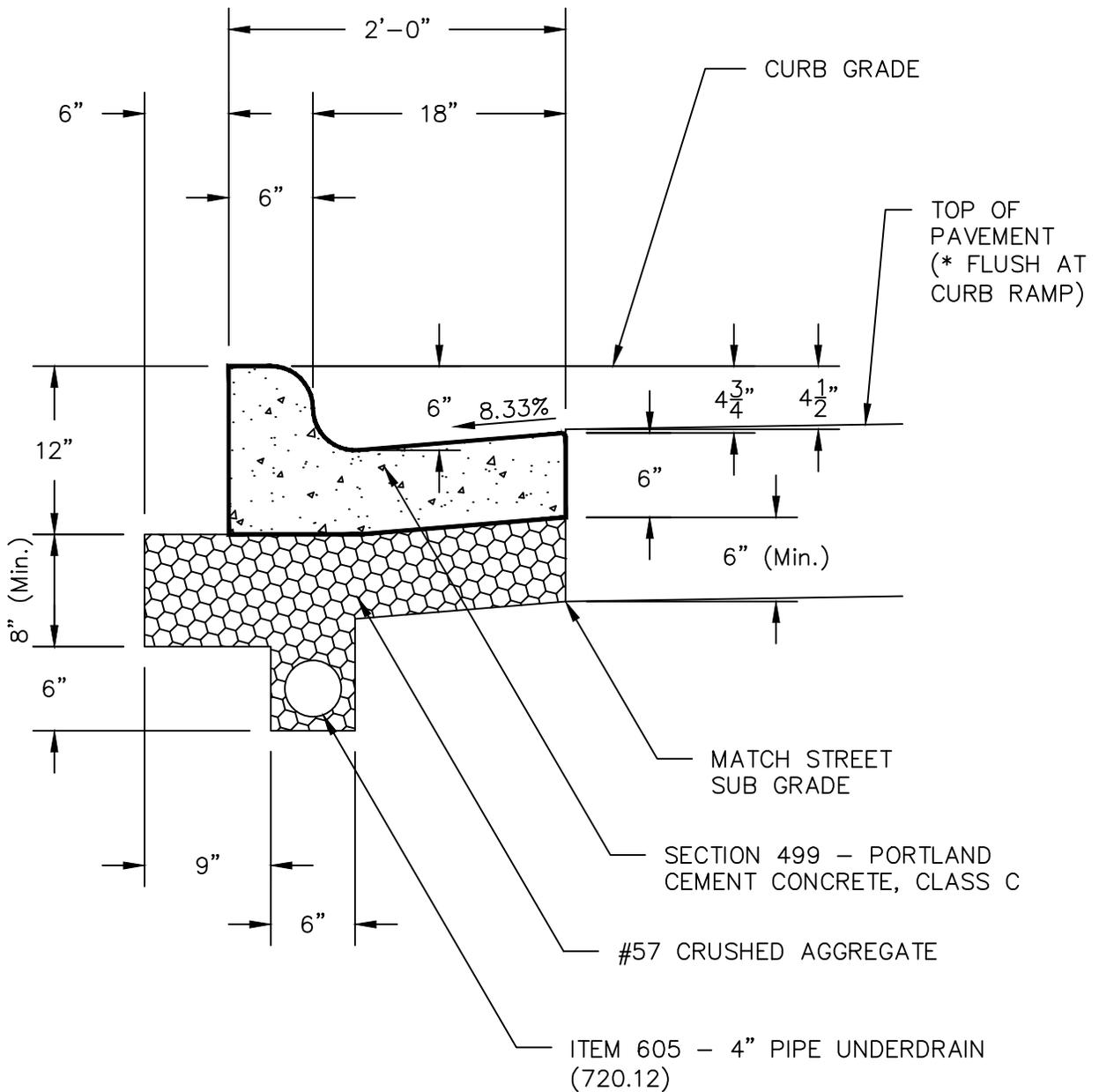
CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

**CURB RAMP TYPE B
DIAGONAL WITH FLARES**

SHEET 1 OF 1

DWG. NO. **PD-05**



* SEE DRAWING RD-03 FOR GUTTER TRANSITION AT CURB RAMP.

Date: 07/13/2011



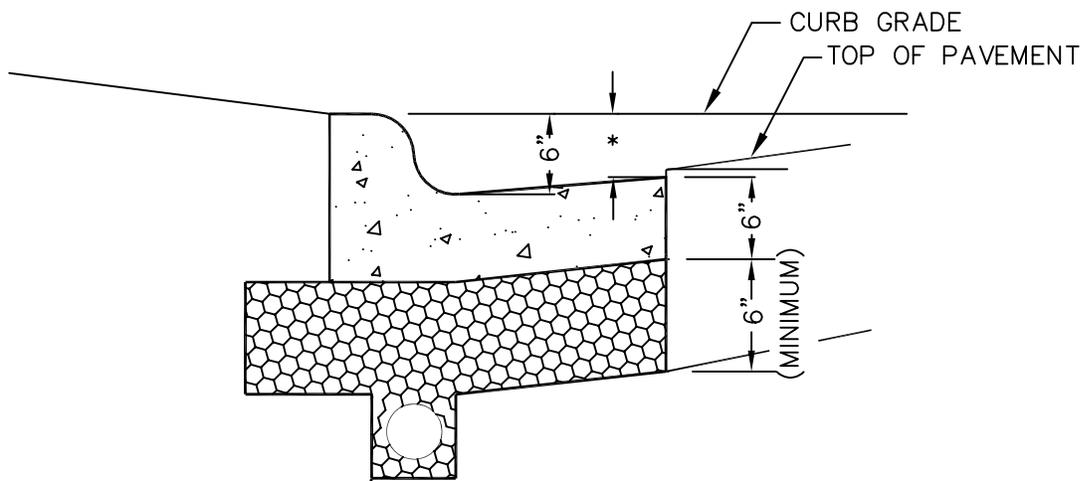
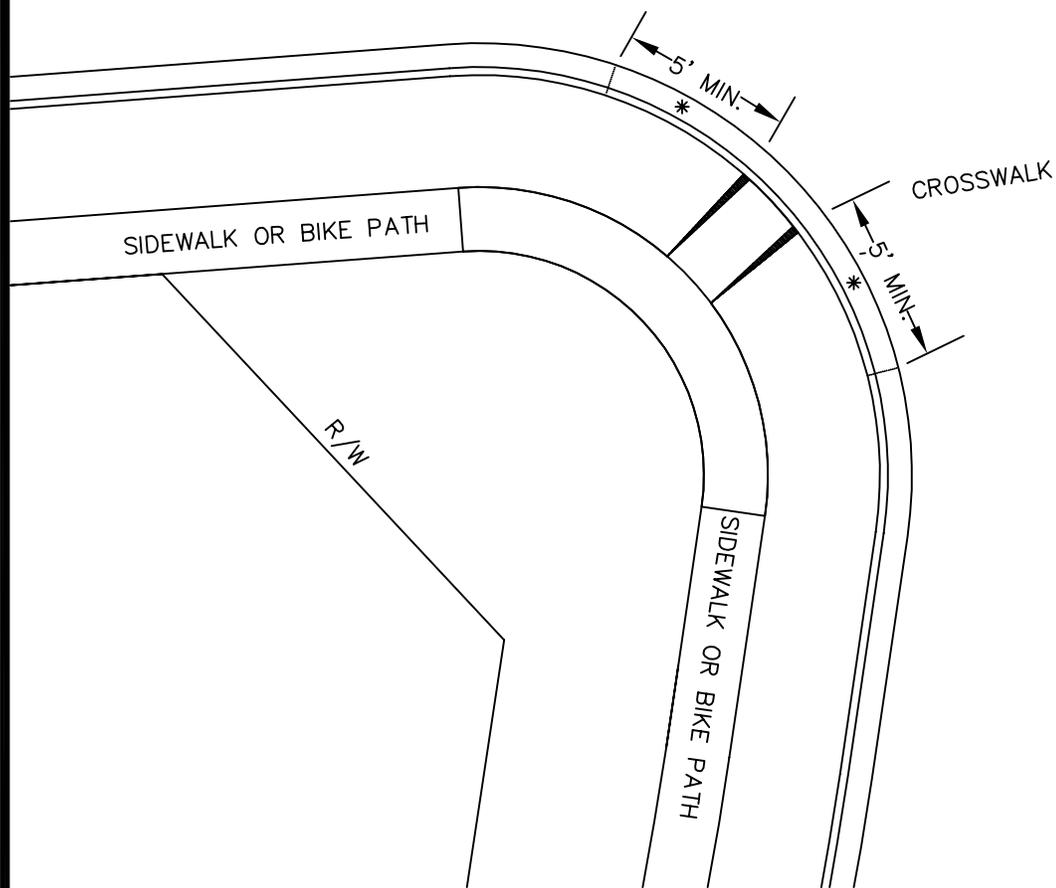
CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

**COMBINATION CONCRETE
CURB & GUTTER**

SHEET 1 OF 1

DWG. NO. **RD-02**



* TRANSITION GUTTER FROM 4 1/2"-INCH TYPICAL DEPTH TO 5 5/8-INCH DEPTH WITHIN AT LEAST 5- FEET OF THE CURB RAMP. THE 5 5/8-INCH DEPTH IS TO BE MAINTAINED THROUGH THE CURB RAMP. THE TRANSITION LENGTH MAY BE ADJUSTED PER THE DIRECTION OF THE FIELD INSPECTOR.

Date: 09/18/2006



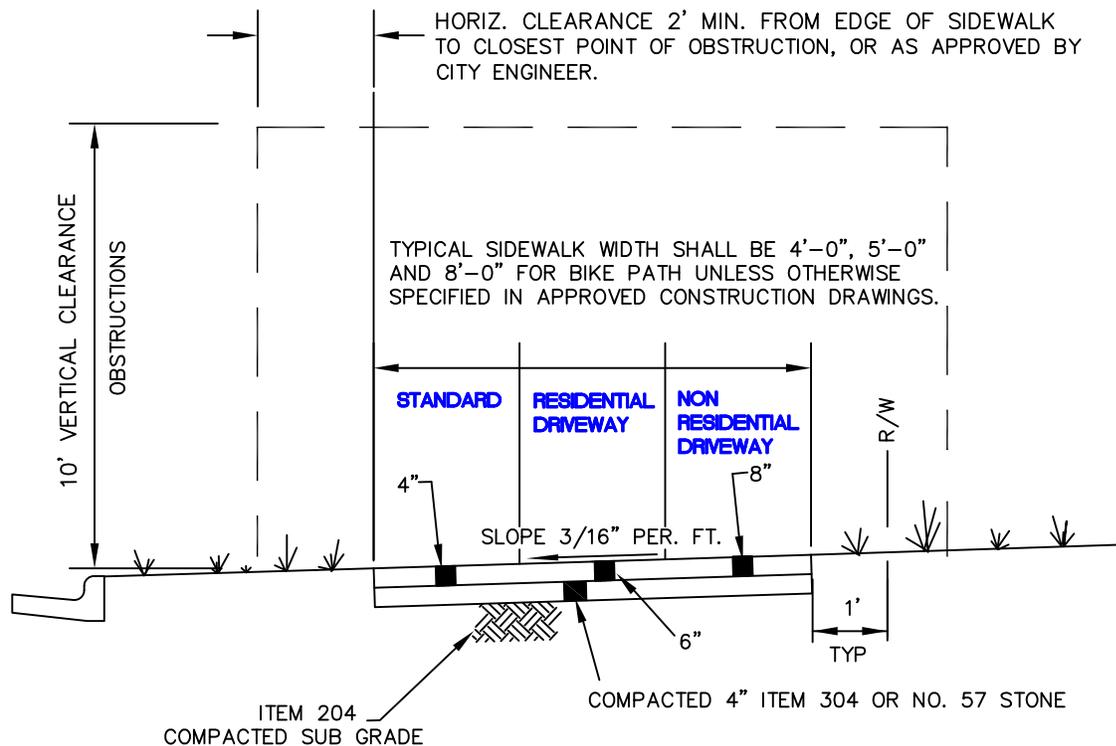
CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

**TYPICAL GUTTER
SECTION**

SHEET 1 OF 1

DWG. NO. **RD-03**



1. ALL WALKWAYS SHALL BE CONSTRUCTED PER CCMS ITEM 608 OR AS DIRECTED BY CITY ENGINEER.
2. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED. SEED MIXTURE SHALL BE APPROVED BY THE CITY ENGINEER.
3. CITY OF COLUMBUS CONSTRUCTION AND MATERIAL SPECIFICATIONS, CURRENT EDITIONS, AND ANY OTHER SUPPLEMENTS THERETO, SHALL GOVERN ALL CONSTRUCTION ITEMS UNLESS OTHERWISE NOTED.
4. SIDEWALKS/BIKE PATHS CROSSING RESIDENTIAL DRIVEWAYS SHALL BE 6" CLASS C CONCRETE ITEM 499. SIDEWALKS/BIKE PATHS CROSSING NON-RESIDENTIAL DRIVEWAY APPROACHES SHALL BE MINIMUM 8" CLASS C CONCRETE, ITEM 499 UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
5. ALL COMMERCIAL DRIVES SHALL HAVE 6" OF ITEM 304.
6. INSPECTION SCHEDULING SHALL BE MADE WITH THE BUILDING DIVISION WHEN CONCRETE FORMS ARE READY FOR INSPECTION, AT LEAST 48 HOURS BEFORE CONCRETE IS TO BE PLACED AT (614) 410-4600.
7. ALL BIKE PATH JOINTS ARE TO BE SAWCUT.
8. SIDEWALKS/FLATWORK SHALL BE TOOL CUT & RETRACED.
9. FULL DEPTH EXPANSION MATERIAL (1/2" THICK) SHALL BE PLACED ADJOINING ALL EXISTING CONCRETE CONFORMING TO ASTM D-1752 TYPE 1.

Date: 03/15/2011



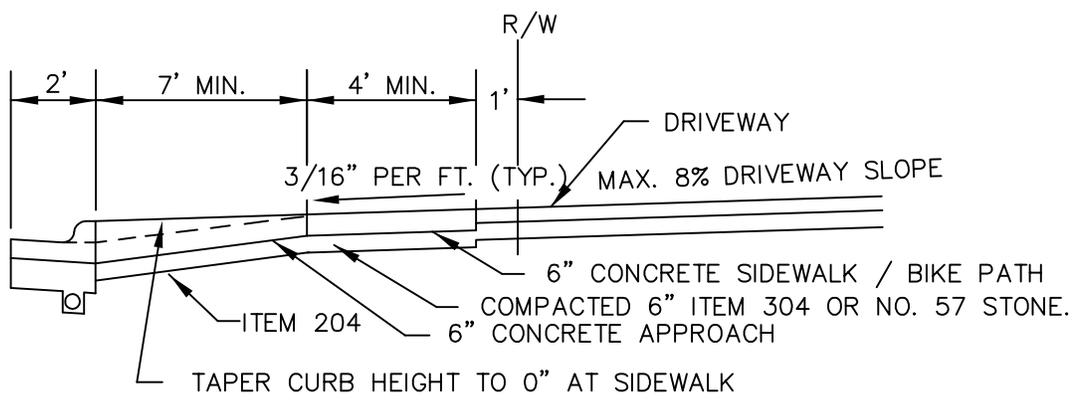
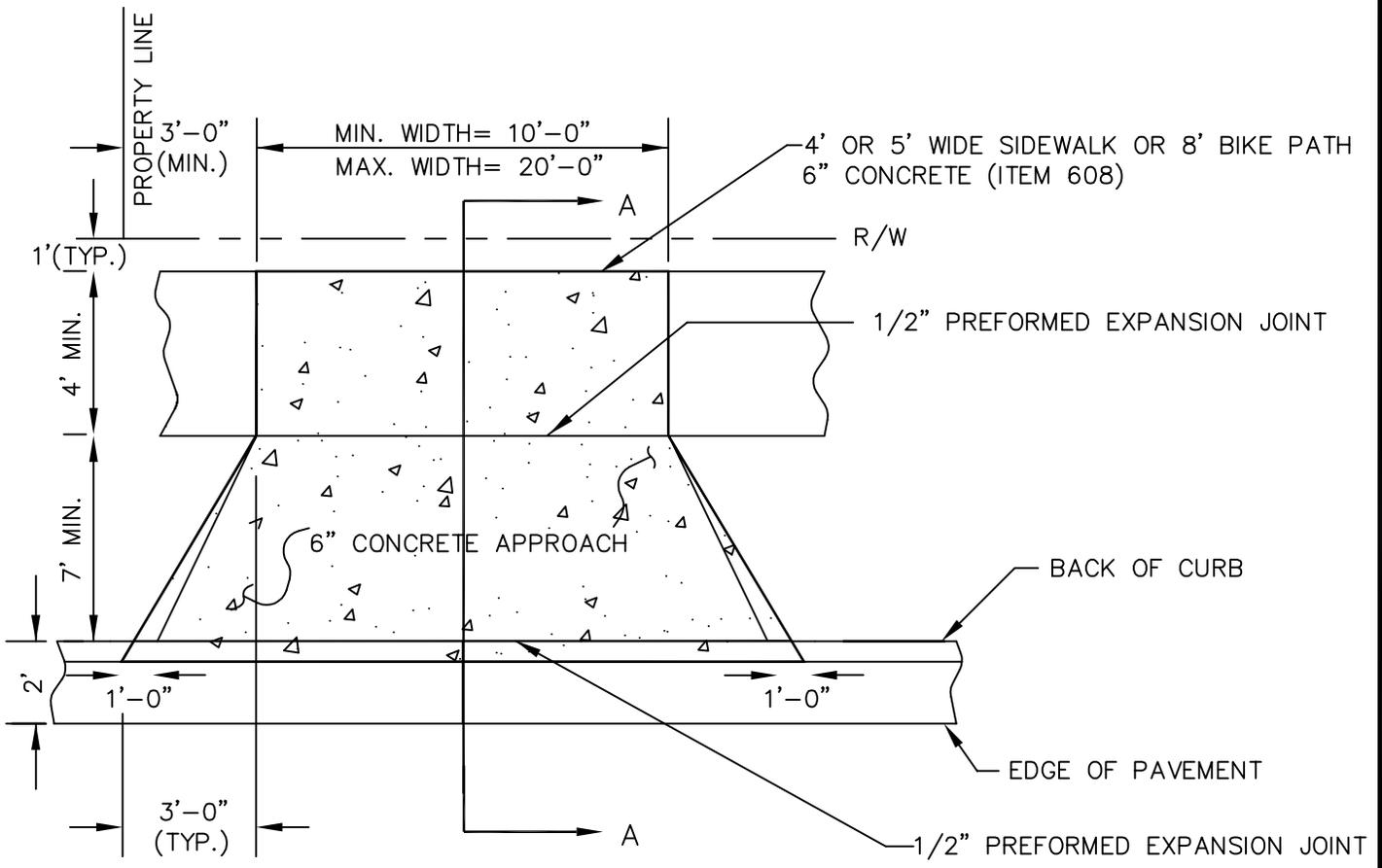
CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

CONCRETE
SIDEWALK & BIKE PATH

SHEET 1 OF 1

DWG. NO. **RD-05**



SECTION A-A

Date: 09/18/2006



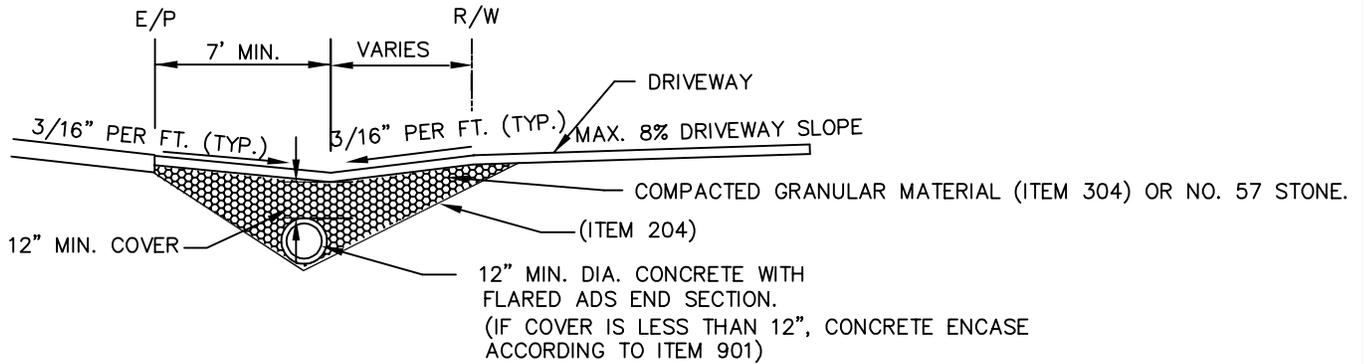
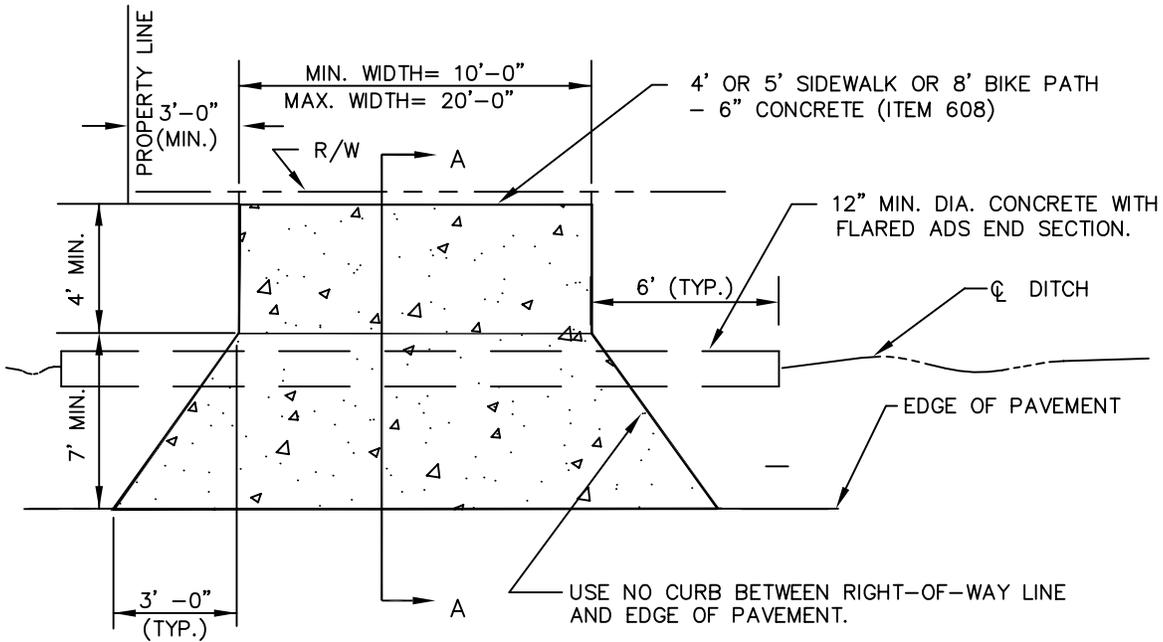
CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

**RESIDENTIAL DRIVEWAY APPROACH
FOR STREETS WITH CURB AND GUTTER**

SHEET 1 OF 9

DWG. NO. **RD-07**



SECTION A-A

NOTE:

1. THE CITY ENGINEER MAY REQUIRE LARGER PIPE TO BE INSTALLED. MINIMUM SLOPE OF PIPE SHALL BE 1 % UNLESS OTHERWISE APPROVED.
2. DRIVE APPROACH SHALL BE 6" CONCRETE OR ALTERNATE ASPHALT AS REQUIRED.
 6" AGGREGATE BASE ITEM 304
 1 1/2" ASPHALT ITEM 402
 1 1/2" ASPHALT ITEM 404

Date: 09/18/2006



CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

**RESIDENTIAL DRIVEWAY APPROACH FOR
STREETS WITHOUT CURB & GUTTER**

SHEET 2 OF 9

DWG. NO. **RD-07**

1. THE FOLLOWING ARE SPECIFICATIONS WHICH APPLY TO THE SUBSTITUTION OF APPROVED BRICK PAVERS FOR CONCRETE DRIVEWAYS AND DRIVEWAY APPROACHES.
2. PAGES 3 AND 4 OF 9 OF CITY OF DUBLIN STANDARD DRAWING RD-07 DETAIL THE APPROVED PLACEMENT OF BRICK PAVERS.
3. THE WORK SHALL BE INSPECTED PRIOR TO PLACEMENT BY CITY OF DUBLIN CITY ENGINEER OR DESIGNEE(S).
4. THE BRICK PAVERS ON THE GRANULAR BASE SHALL HAVE A PVC FROST LIP/EDGE OR APPROVED EQUIVALENT TO SERVE AS A FORM FOR THE PAVERS.
5. THE CLASS C CONCRETE BASE SHALL BE PROVIDED ACCORDING TO CITY OF COLUMBUS CONSTRUCTION AND MATERIAL SPECIFICATIONS (CCMS).
6. THE GRANULAR BASE SHALL BE PLACED ACCORDING TO CCMS. PAVING SHALL BE PROVIDED ONLY WITH ACCEPTABLE BASE CONDITIONS, AS DETERMINED BY THE CITY OF DUBLIN CITY ENGINEER OR DESIGNEE(S). THIS INCLUDES, BUT IS NOT LIMITED TO, SOFT, WATER SATURATED, FROZEN OR FROST-AFFECTED MATERIAL. UNACCEPTABLE MATERIAL SHALL BE STABILIZED OR REMOVED PRIOR TO PAVING.
7. THE FOLLOWING PAVING MATERIALS HAVE BEEN ACCEPTED FOR USE AS SUBSTITUTES FOR CONCRETE DRIVEWAYS AND DRIVEWAY APPROACHES. ACCEPTANCE IS SUBJECT TO A REVIEW OF MANUFACTURER'S SPECIFICATIONS AND FIELD PERFORMANCE BY THE CITY ENGINEER. ACCEPTANCE OF ALTERNATE MATERIALS IS SUBJECT TO CONTINUAL REVIEW AND MAY BE WITHIN DRAWN AT THE DISCRETION OF THE CITY ENGINEER.

ACCEPTED MATERIALS:

UNI-STONE PAVING STONES
 INTER PAVE CORPORATION
 8479 BROADWELL ROAD
 CINCINNATI, OHIO 43224
 (513) 474-3783

Date: 09/18/2006



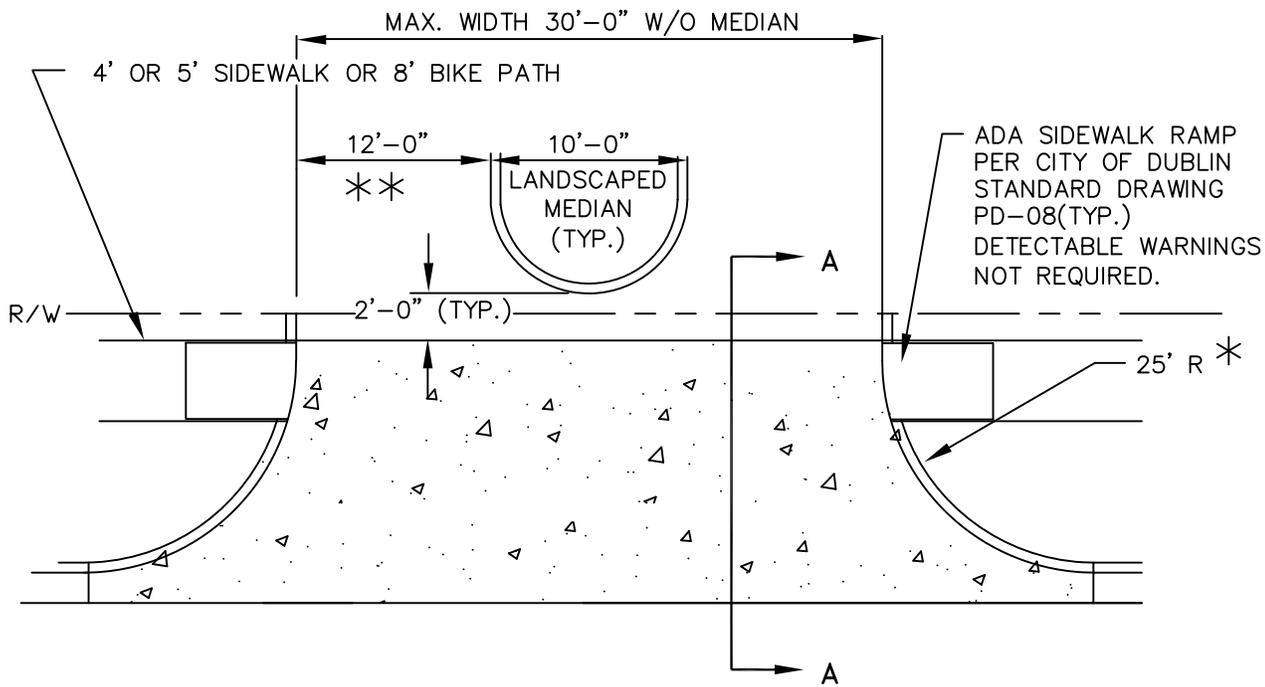
CITY OF DUBLIN™
 ENGINEERING

STANDARD DRAWING

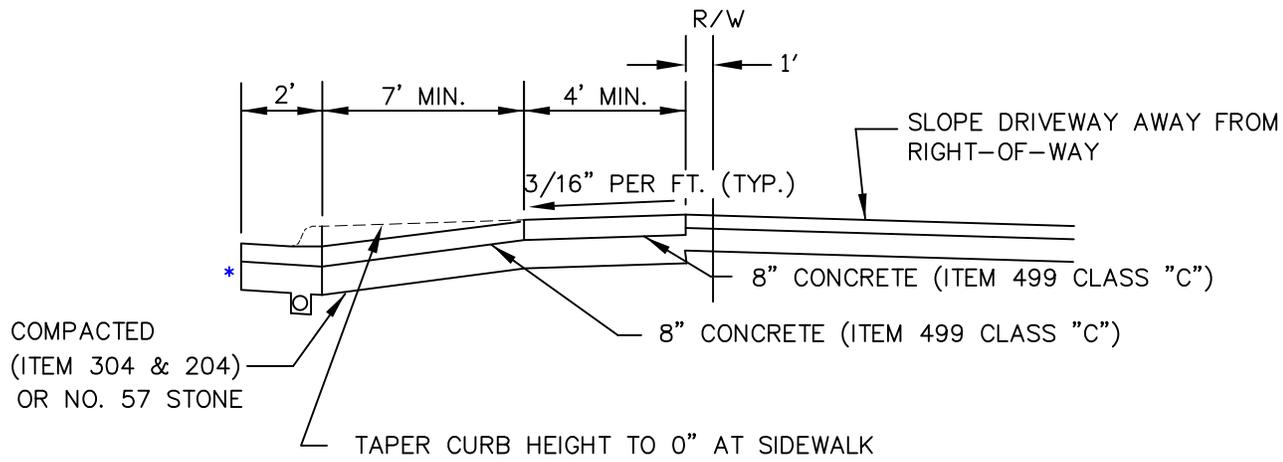
**RESIDENTIAL BRICK PAVER SIDEWALK,
 DRIVEWAY, AND DRIVEWAY APPROACH**

SHEET 5 OF 9

DWG. NO. **RD-07**



- * MINIMUM RADIUS IS 25 FEET UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
- ** MINIMUM LANE WIDTH SHALL BE 12'-0". NUMBER OF LANES REQUIRES APPROVAL BY THE CITY ENGINEER.



SECTION A-A

DRIVEWAY APPROACH SHALL BE 8" PORTLAND CEMENT CONCRETE OR STRUCTURAL EQUIVALENT AS APPROVED BY THE CITY ENGINEER. EXISTING CURB AND GUTTER TO BE REMOVED WITHIN THE LIMITS OF DRIVEWAY.

APPROACH AND GUTTER TO BE POURED INTEGRAL. MAINTAIN GUTTER SLOPE AND UNDER DRAIN THROUGH THE DRIVEWAY.

* SEE DRAWING RD-02 FOR COMBINATION CONCRETE CURB & GUTTER.

Date: 03/15/2011



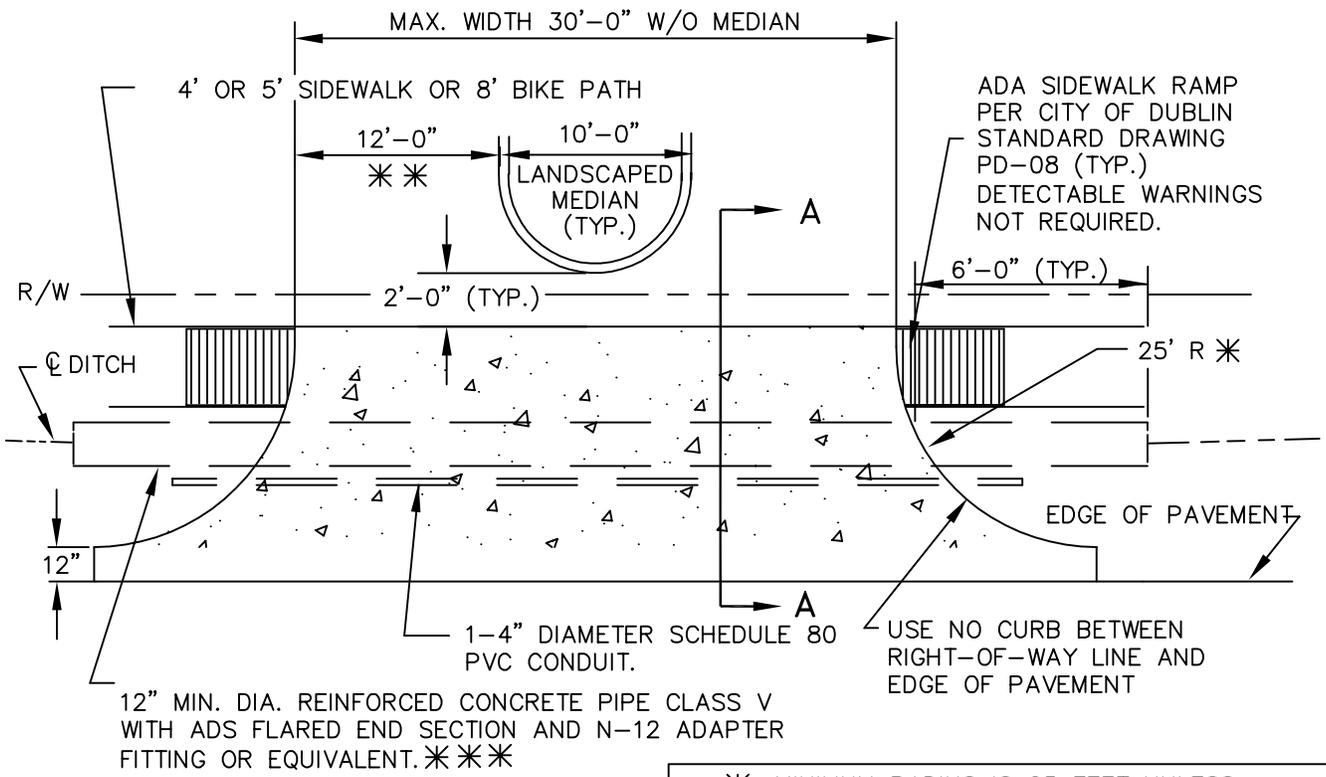
CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

**DIVIDED COMMERCIAL DRIVEWAY APPROACH
FOR STREETS WITH CURB & GUTTER**

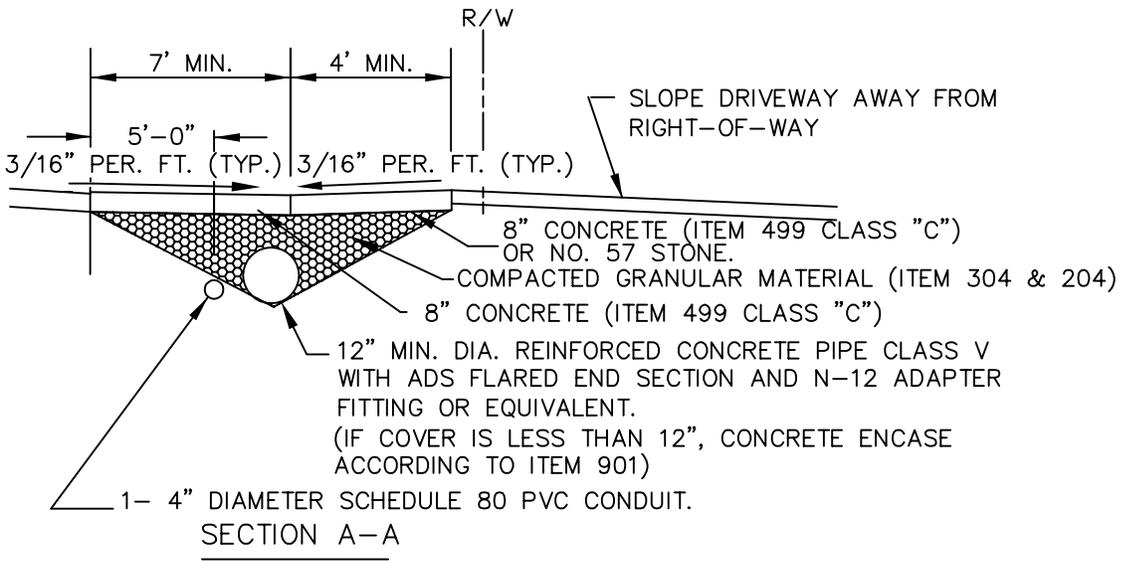
SHEET 6 OF 9

DWG. NO. **RD-07**



* * * NOTE: THE CITY ENGINEER MAY REQUIRE LARGER PIPE TO BE INSTALLED. MINIMUM SLOPE SHALL BE 1 % UNLESS OTHERWISE APPROVED.

* MINIMUM RADIUS IS 25 FEET UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
 * * MINIMUM LANE WIDTH SHALL BE 12'-0". NUMBER OF LANES REQUIRES APPROVAL BY THE CITY ENGINEER.



DRIVEWAY APPROACH SHALL BE 8" PORTLAND CEMENT CONCRETE OR STRUCTURAL EQUIVALENT AS APPROVED BY THE CITY ENGINEER.

Date: 09/18/2006



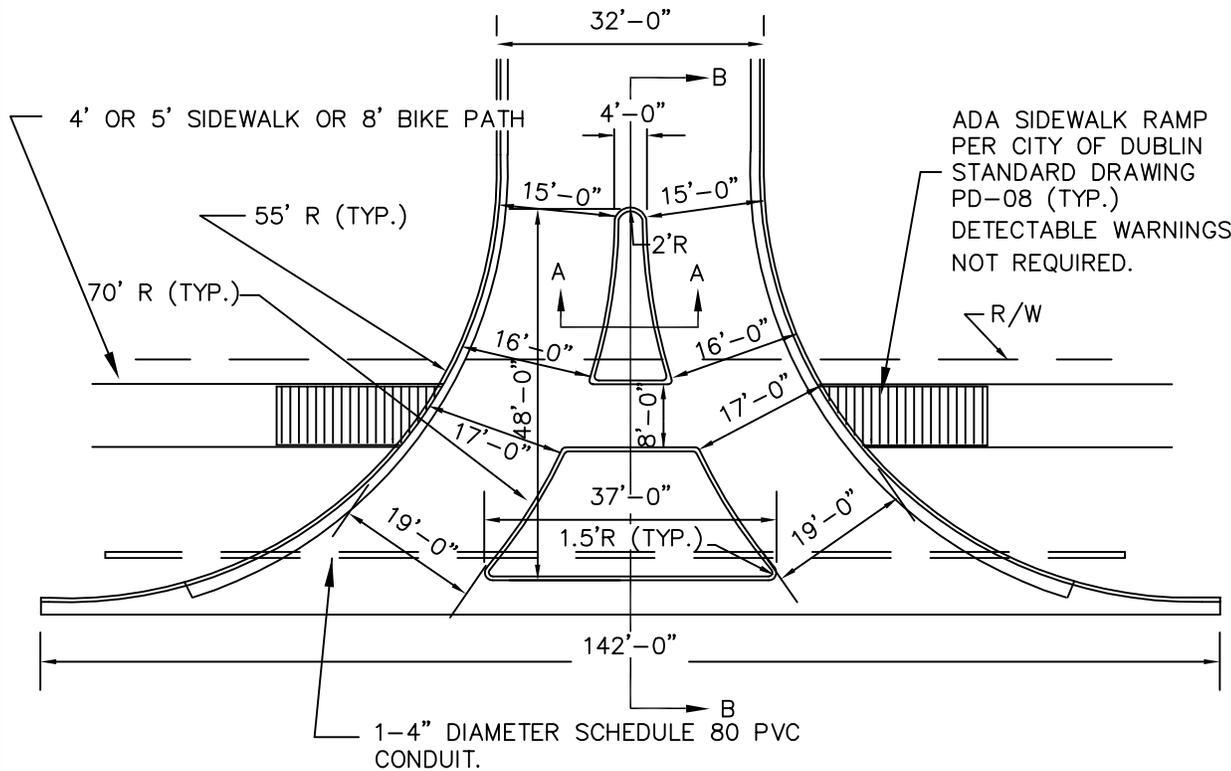
CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

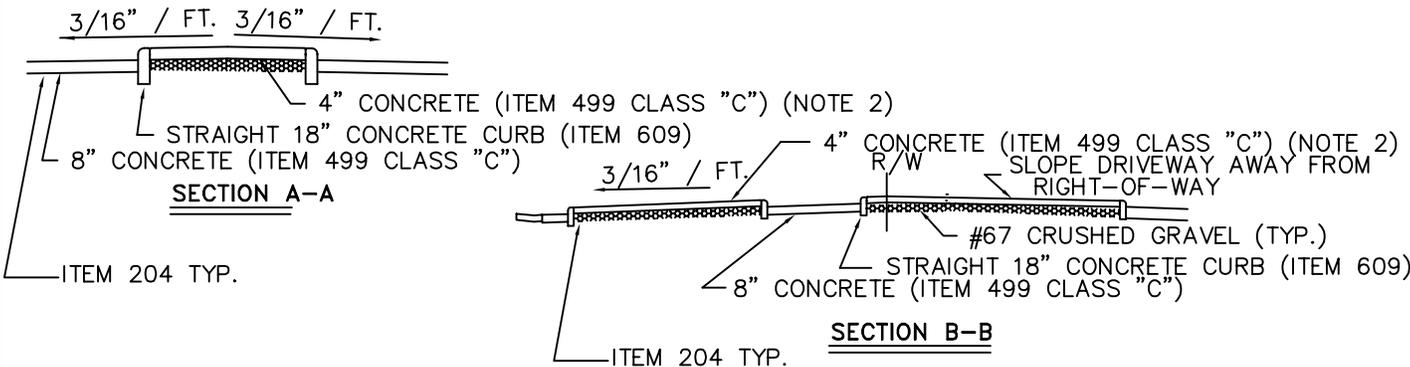
DIVIDED COMMERCIAL DRIVEWAY APPROACH FOR STREETS W/O CURB & GUTTER

SHEET 7 OF 9

DWG. NO. **RD-07**



THIS DESIGN ACCOMMODATES WB-40 VEHICLES, AS PRESCRIBED BY AASHTO. IF A LARGER VEHICLE NEEDS ACCOMMODATED A SPECIFIC DESIGN WILL BE REQUIRED.



1. DRIVEWAY APPROACH SHALL BE 8" PC CONCRETE OR STRUCTURAL EQUIVALENT AS APPROVED BY THE CITY ENGINEER.
2. ISLAND SURFACE IN DRIVEWAY APPROACH MAY BE EITHER 4" PC CONCRETE OR LANDSCAPING VEGETATION WITH A HEIGHT NO GREATER THAN 3 FEET ABOVE THE TOP OF CURB. LANDSCAPING MATERIALS SHALL BE SUBJECT TO THE REVIEW AND APPROVAL OF THE CITY OF DUBLIN DIVISION OF PLANNING. MAINTENANCE OF LANDSCAPING SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER.
3. EXISTING CURB AND GUTTER TO BE REMOVED WITHIN THE LIMITS OF DRIVEWAY. APPROACH AND GUTTER TO BE POURED INTEGRAL. MAINTAIN GUTTER SLOPE AND UNDER DRAIN THROUGH DRIVEWAY.

Date: 09/18/2006



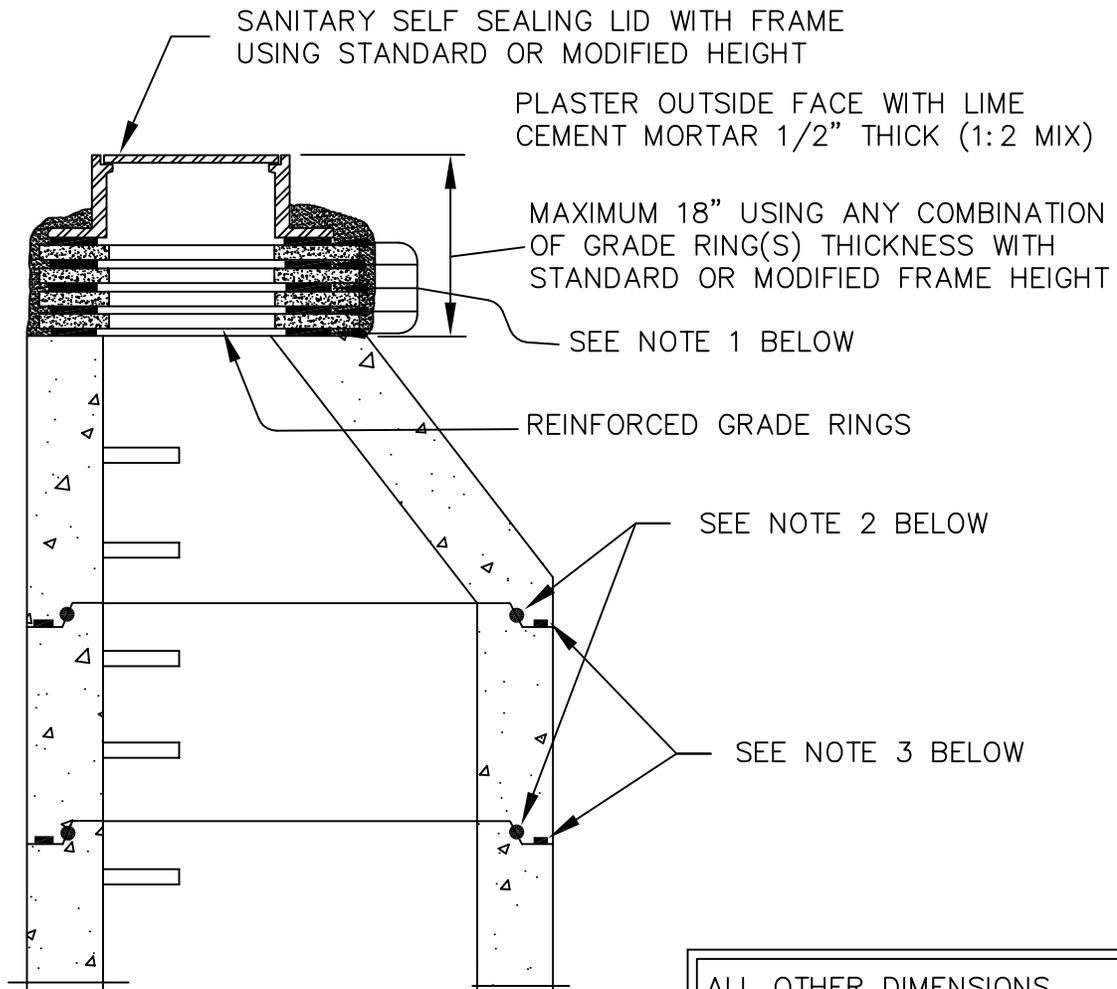
CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

**RIGHT IN, RIGHT OUT
COMMERCIAL APPROACH**

SHEET 8 OF 9

DWG. NO. **RD-07**



ALL OTHER DIMENSIONS AND SPECIFICATIONS ARE THE SAME AS CITY OF COLUMBUS SPECS FOR SANITARY MANHOLES

NOTES:

1. 1/2" X 1-1/2" EXTRUDED FLEXIBLE PLASTIC (BUTYL RUBBER) SEALANT O.D.O.T. ITEM 706.14 CONFORMING TO AASHTO M-198, TYPE B AS MANUFACTURED BY CONCRETE SEALANTS INC., "CONSEAL" OR APPROVED EQUAL.

CLEAN EACH SURFACE BY WIRE BRUSHING ALL LOOSE CONCRETE DUST AND DIRT.

PLACE SEALANT IN A CIRCULAR CONFIGURATION ON EACH CONCRETE SURFACE AND OVERLAP A MINIMUM OF 1/4" AND KNEAD ENDS.
2. CLEAN BELL AND SPIGOT JOINT, APPLY APPROVED LUBRICATION TO JOINT SURFACE AND TO "O" RING; THEN EQUALIZE GASKET TO GROOVE.
3. PLACE 1/2" DIAMETER SEALANT AS MANUFACTURED BY CONCRETE SEALANTS INC., "CONSEAL" OR APPROVED EQUAL ON RISER TOP LEDGE.

Date: 09/18/2006



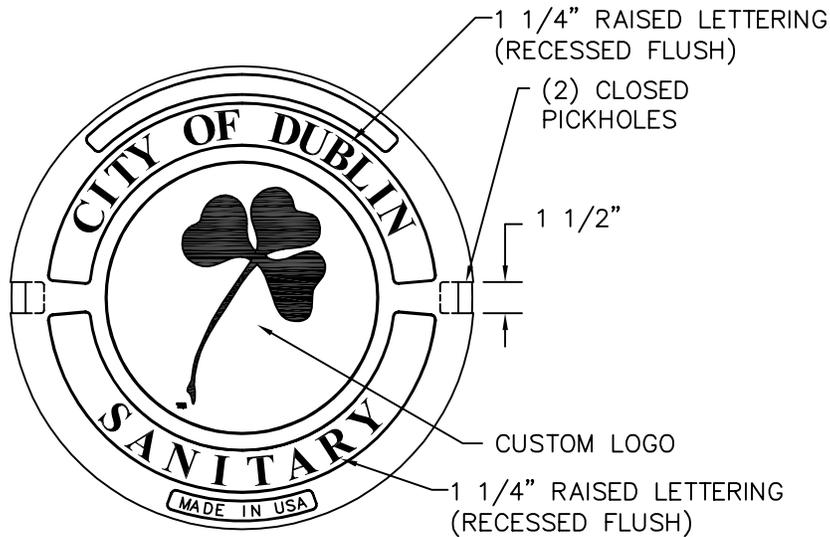
CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

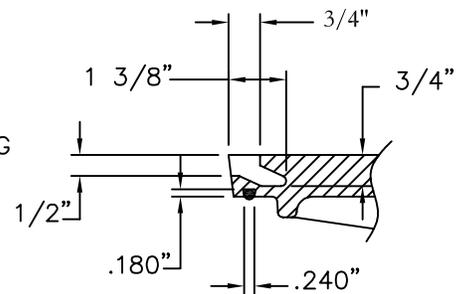
**JOINT SEAL FOR
SANITARY MANHOLE**

SHEET 1 OF 1

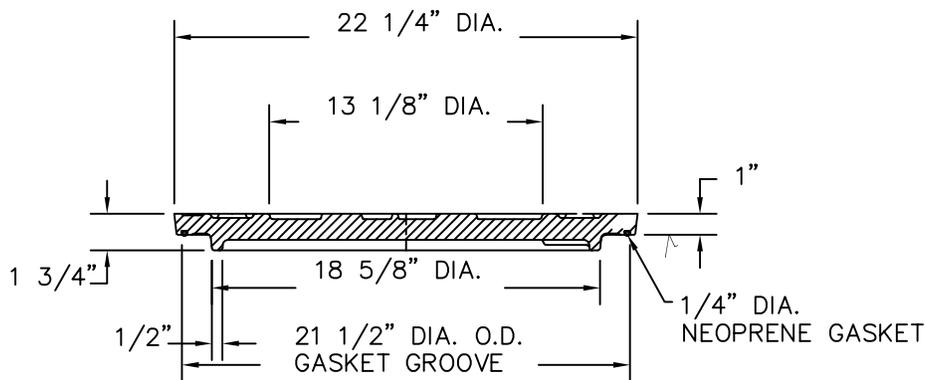
DWG. NO. **SA-01**



COVER FACE



PICK SLOT DETAIL



COVER SECTION

Date: 09/18/2006



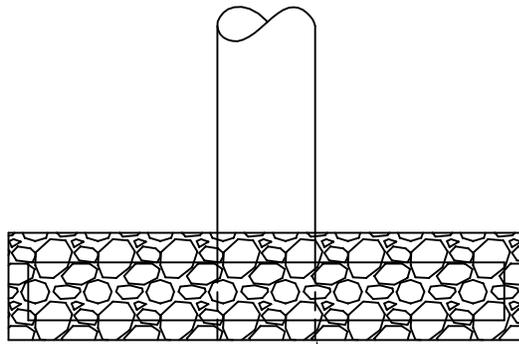
CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

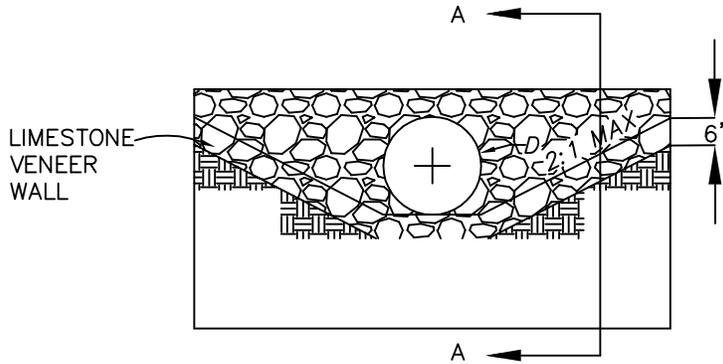
**SANITARY
MANHOLE LID**

SHEET 1 OF 1

DWG. NO. **SA-02**

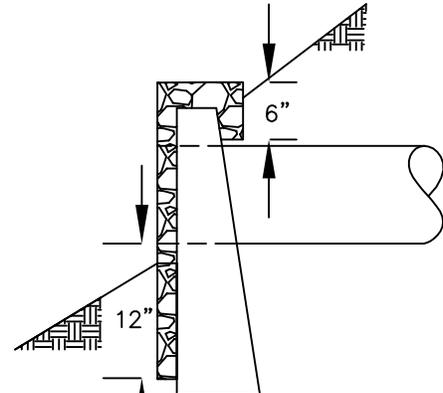


PLAN
 EXTEND PIPE 6"
 BEYOND FACE OF
 CONCRETE WALL.



LIMESTONE
 VENEER
 WALL

ELEVATION



SECTION A-A

STONE VENEER

NO SCALE

NOTES:

1. STONE VENEER:
 MANUFACTURED SYNTHETIC STONE VENEER SHALL BE GREAT LAKE LIMESTONE AS MANUFACTURED BY DUTCH QUALITY STONE, INC. (1-330-359-7866) OR AN APPROVED ALTERNATIVE. MORTAR COLOR SHALL APPROXIMATE THE STONE COLOR. MORTAR AND GROUTING TYPE S PER MANUFACTURES INSTRUCTIONS. STONE SHALL BE PLACED IN A RANDOM PATTERN SIMILAR TO AVERY/MUIRFIELD BRIDGE OVER US 33/SR 161.
2. ALL EXPOSED CONCRETE STRUCTURES SHALL COMPLY WITH THE STONE VENEER AS SHOWN ON THIS DETAIL.

Date: 09/18/2006



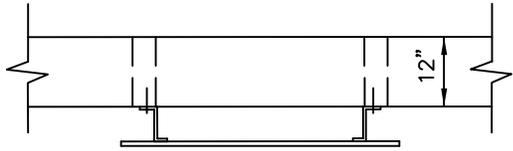
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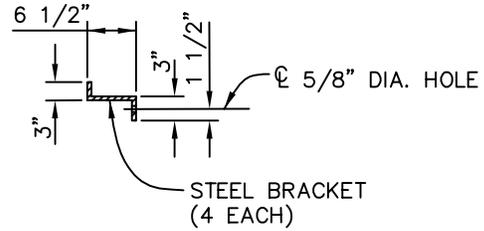
STONE VENEER FOR CONCRETE STRUCTURES

SHEET 1 OF 1

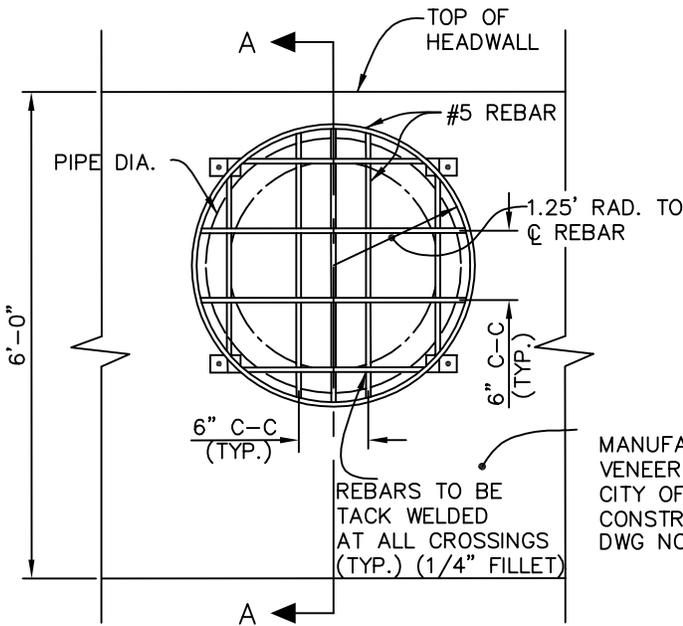
DWG. NO. **ST-01**



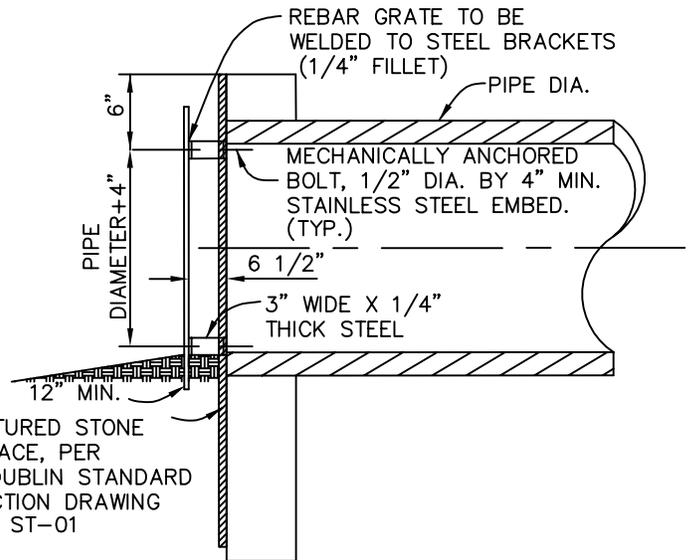
TOP VIEW



STEEL BRACKET
(4 EACH)



END SECTION



SECTION A-A

MANUFACTURED STONE
VENEER FACE, PER
CITY OF DUBLIN STANDARD
CONSTRUCTION DRAWING
DWG NO. ST-01

NOTE:

GRATES AND BRACKETS SHALL BE GALVANIZED IN ACCORDANCE WITH CITY OF COLUMBUS CONSTRUCTION AND MATERIAL SPECIFICATIONS 711.02.

Date: 09/18/2006



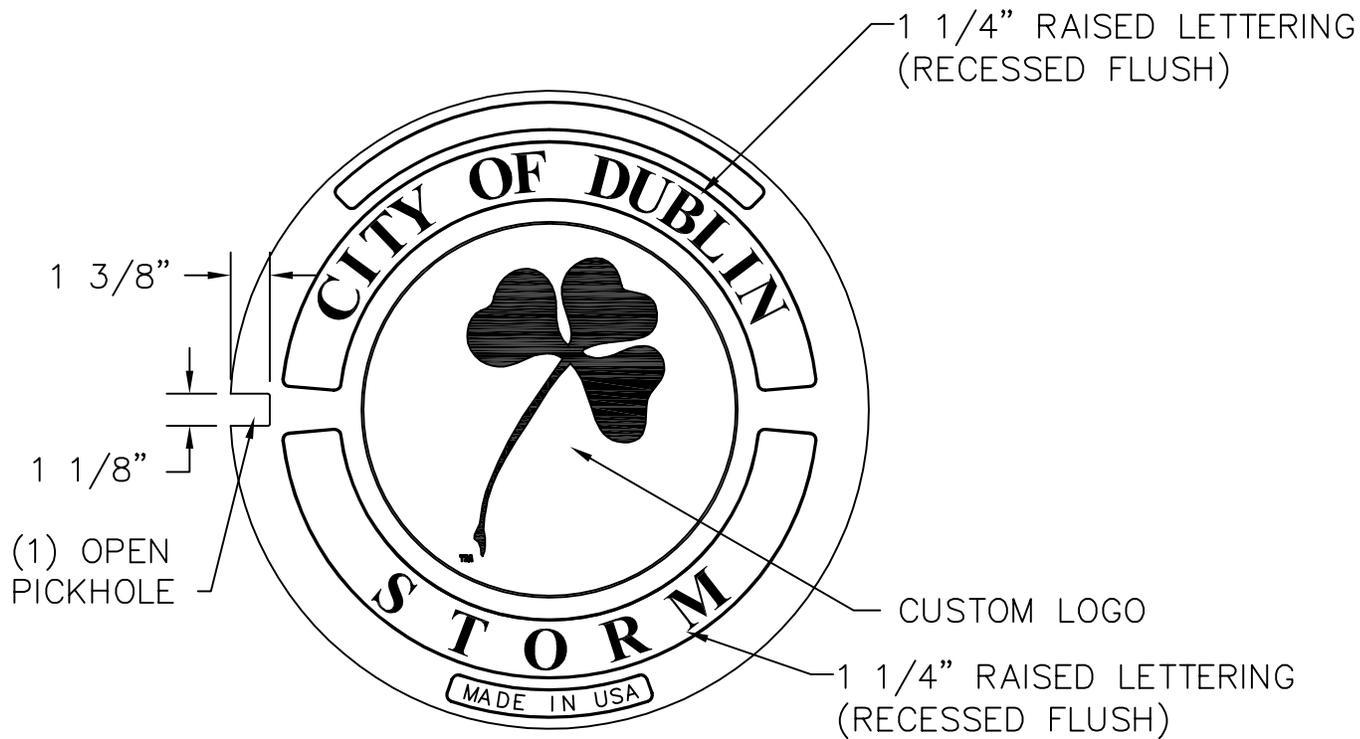
CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

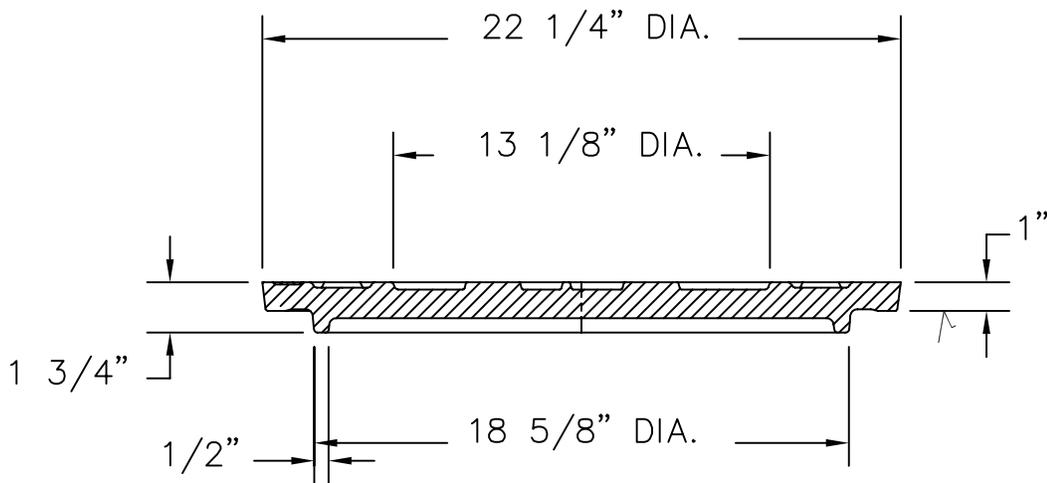
SAFETY GRATE

SHEET 1 OF 1

DWG. NO. **ST-02**



COVER FACE



COVER SECTION

Date: 09/18/2006



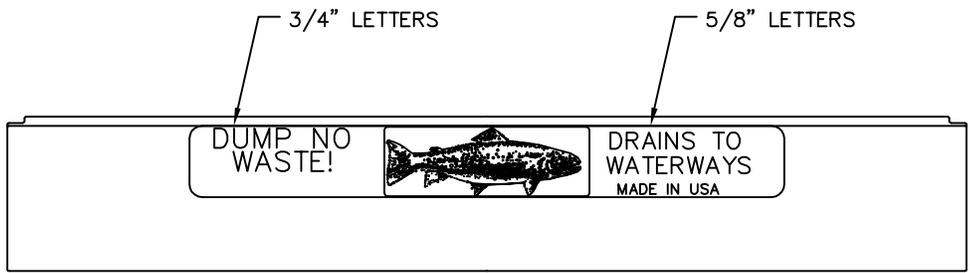
CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

**STORM SEWER
MANHOLE**

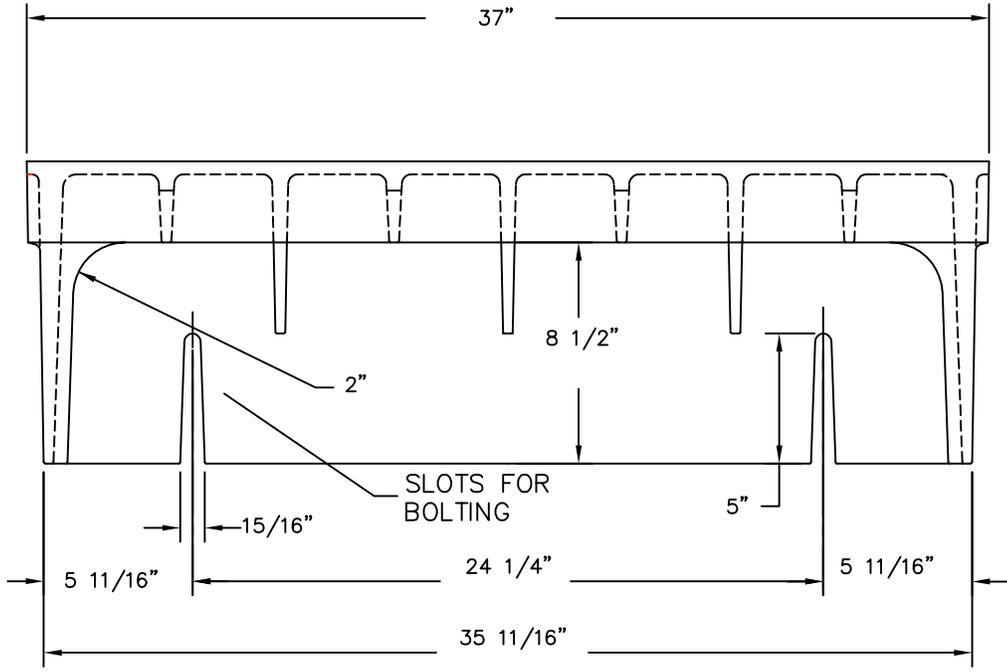
SHEET 1 OF 1

DWG. NO. **ST-03**

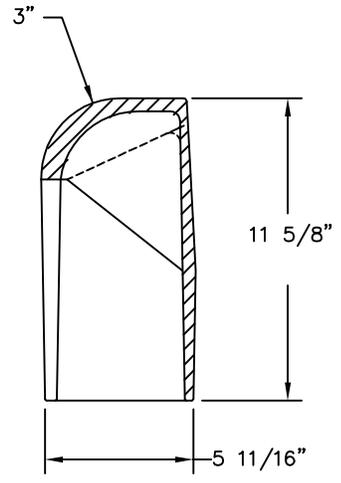


TOP VIEW

CURB ADJUSTMENT
6" TO 10"



FRONT VIEW



SECTION

Date: 09/18/2006



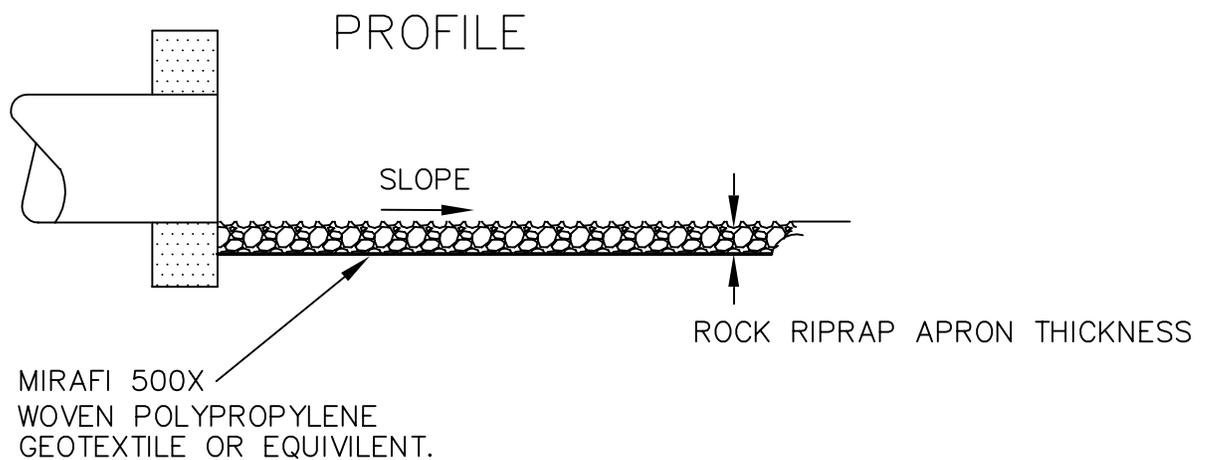
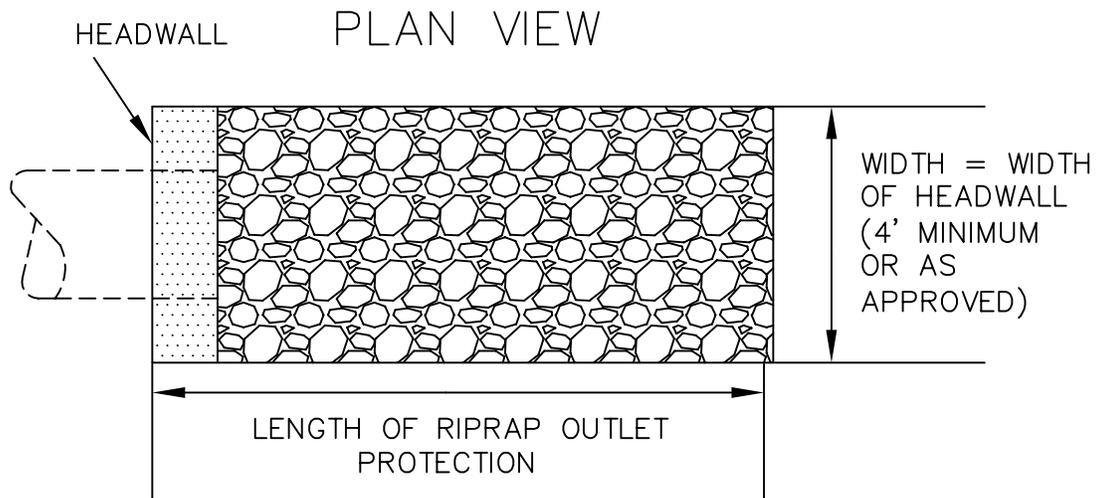
CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

**DRAINS TO RIVER
CURB INLET**

SHEET 1 OF 1

DWG. NO. **ST-04**



NOTES:

1. MINIMUM LENGTH TO BE 8 FEET, 5 FEET IF PIPE IS SUBMERGED.
2. MINIMUM THICKNESS OF 18 INCHES.
3. TYPE C PREFERRED.

Date: 09/18/2006



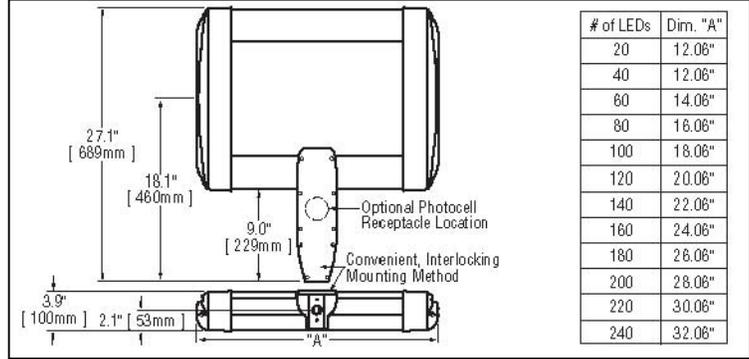
CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

**ROCK CHANNEL
PROTECTION DETAIL**

SHEET 1 OF 1

DWG. NO. **ST-05**



LIGHTING DESIGN CRITERIA

MIN = 0.5 fc
 AVG/MIN RATIO = 3:1
 MAX/MIN RATIO = 6:1
 CROSSWALK AREA = 1.2-1.4 fc

GENERAL DESCRIPTION – LIGHT EMITTING DIODE (LED), TYPE II, III OR IV CUTOFF (AS SPECIFIED ON THE CONSTRUCTION DRAWINGS), ONE-PIECE EXTRUDED ARM. OPERATING VOLTAGE SHALL BE ** VOLTS, SINGLE PHASE.

** VOLTAGE REQUIREMENTS ARE TO BE SPECIFIED ON PLANS.

DISTRIBUTION – IES NEMA TYPE II, III OR IV CUTOFF.

- APPROVED MANUFACTURER**
- BetaLED: ARE-EDG-2M-DA-##-C-**-BZ-43K
 - BetaLED: ARE-EDG-3M-DA-##-C-**-BZ-43K
 - BetaLED: ARE-EDG-4M-DA-##-C-**-BZ-43K

NUMBER OF LED's TO BE SPECIFIED ON PLANS.
 ** VOLTAGE REQUIREMENTS ARE TO BE SPECIFIED ON PLANS.

CABLE - PROVIDE #10 XHHW, STRANDED COPPER 600V, 90 DEGREES CELSIUS CONDUCTORS. WIRE TO LUMINAIRE. SECURE TO LUMINAIRE ARM WITH CABLE GRIP PROVIDED WITH LUMINAIRE. PROVIDE ADEQUATE LENGTH TO EXTEND MIN. 2 FEET OUT OF HAND HOLE.

EXECUTION – ALL LUMINAIRES SHALL BE PLUMB AND LEVEL. ALL LAMPS SHALL BE OPERATIONAL PRIOR TO INSPECTION. ALL SURFACES SHALL BE CLEANED OF DIRT, DEBRIS, ETC. FREE OF SCRATCHES, DENTS, ETC.

METHOD OF MEASUREMENT – SEE ODOT SPECIFICATIONS SECTION 625.

BASIS OF PAYMENT –SEE ODOT SPECIFICATIONS SECTION 625.

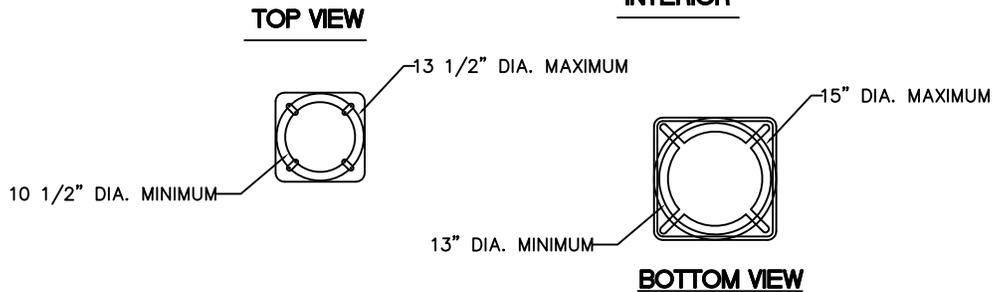
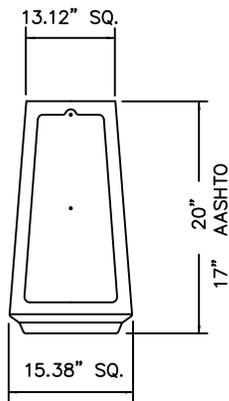
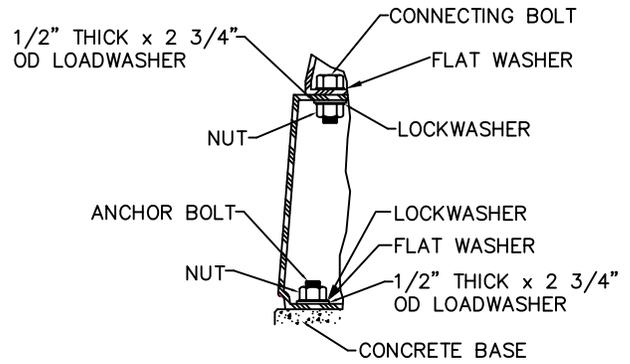
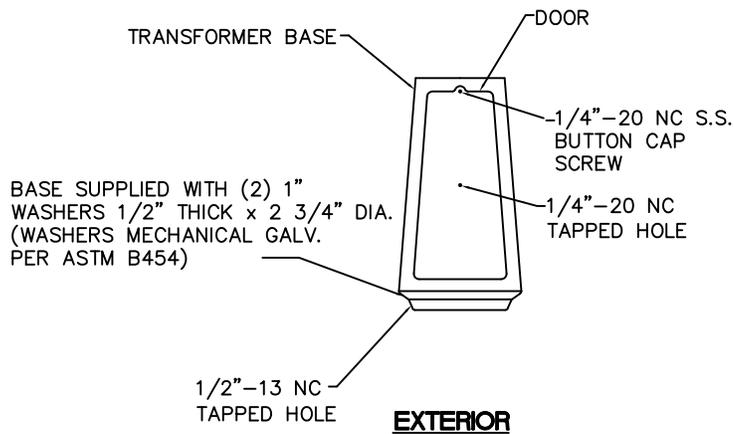
Date: 03/15/2011

CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

LUMINAIRE

SHEET 1 OF 1 DWG. NO. **SL-01**



TRANSFORMER BASE — PROVIDE A ONE-PIECE CAST ALUMINUM ALLOY 356 BREAKAWAY TRANSFORMER BASE. MINIMUM 20" HIGH WITH A REMOVABLE MATCHING ACCESS DOOR HELD IN PLACE WITH STAINLESS STEEL SCREWS. THE DOOR SHALL BE A MINIMUM OF 13" HIGH, 8" WIDE AT TOP AND 9" AT BOTTOM. DOOR SHALL BE FIELD POSITIONED ON SIDE AWAY FROM ROADWAY. THE BASE SHALL BE DESIGNED TO BE ATTACHED WITH ANCHOR BOLTS PROVIDED WITH A TEMPLATE FOR MOUNTING IN A CONCRETE BASE. PROVIDE A GALVANIZED STEEL HEX-HEAD MACHINE BOLT WITH NUTS AND LOCKWASHERS TO ATTACH POLE BASE FLANGE TO TRANSFORMER BASE. PROVIDE LOAD DISTRIBUTION NON-CORROSIVE WASHERS TO EQUALIZE BOLT FORCES AT FLANGE MATING SURFACES.

GROUNDING — EACH TRANSFORMER BASE SHALL CONTAIN AN INTERNAL LUG WITH DRILLED HOLE FOR ATTACHING A GROUND CONDUCTOR.

Date: 03/15/2011



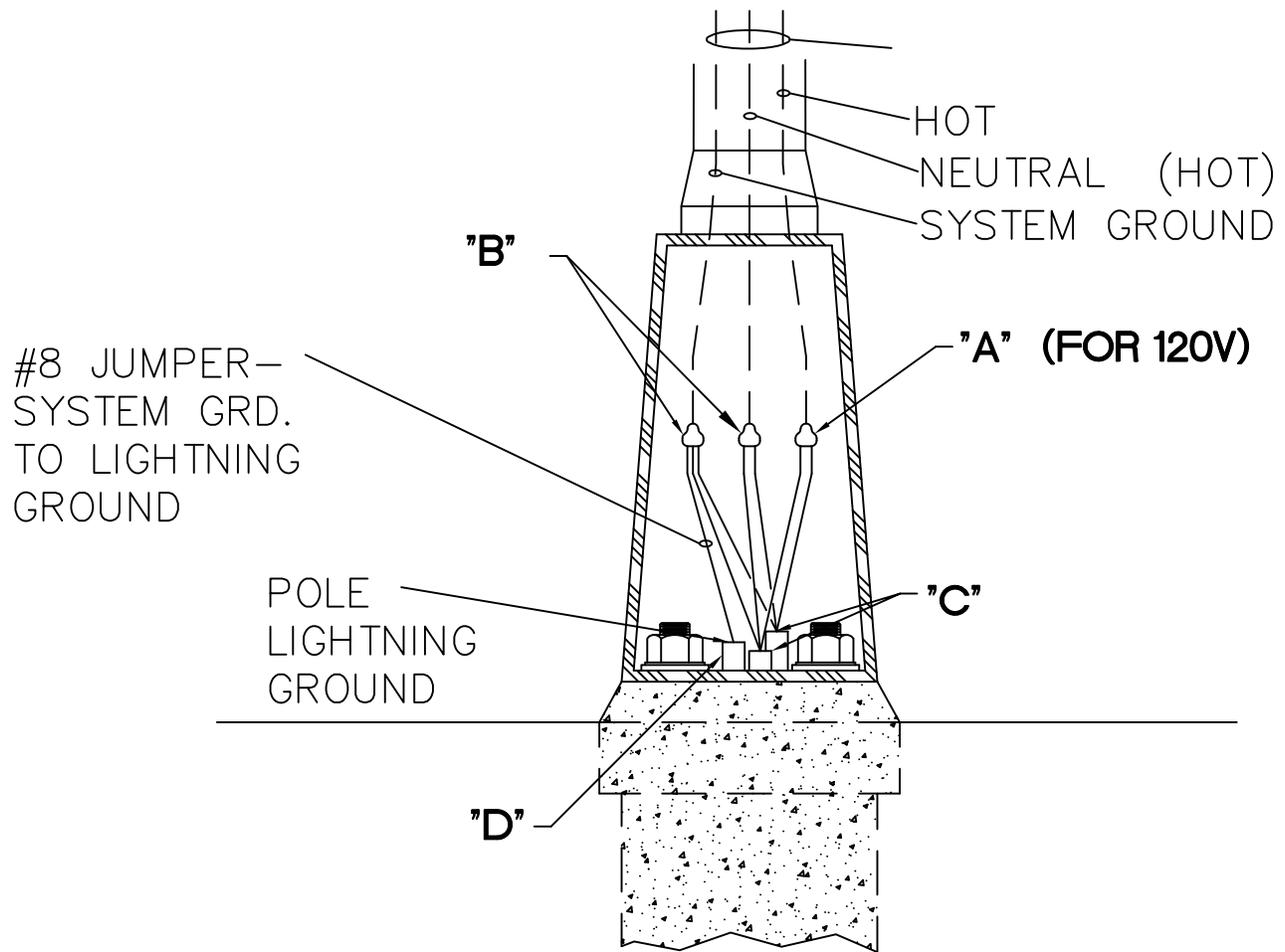
CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

**TRANSFORMER
BASE**

SHEET 1 OF 2

DWG. NO. **SL-02**



CONNECTIONS

- 'A' FUSED – INLINE Y CONNECTOR KIT TYPE II WITH WATERPROOF BOOTS AND BREAKAWAY RECEPTACLE. FUSE AT 5 AMPS, ELASTIMOLD STYLE 82 SERIES OR HOMAC FY SERIES, BUSS KTK-R FUSE.
- 'B' UNFUSED–INLINE 7 CONNECTOR KIT TYPE III WITH WATERPROOF BOOTS AND BREAKAWAY RECEPTACLE, ELASTIMOLD 83 SERIES OR HOMAC DY SERIES.
- 'C' PROVIDE MOLDED PLASTIC OR RUBBER CAPPING DEVICE THAT ONLY PERMITS WIRE PASS THROUGH WHILE PREVENTING DIRT, WATER, ETC. ENTRY.
- 'D' POLE LIGHTNING GROUND LUG UNINSULATED COPPER COMPRESSION TERMINAL UL LISTED FOR 600V. SIZE FOR WIRE SPECIFIED. DRILL, TAP, AND BOLT TO TRANSFORMER BASE BURNDY YA SERIES. BOND SYSTEM GROUND TO LIGHTNING ROD GROUND.

PROVIDE 2' SLACK IN ALL WIRING TO BRING CONNECTORS AND FUSE HOLDERS OUT THRU HANDHOLE.

Date: 03/15/2011



CITY OF DUBLIN™.
ENGINEERING

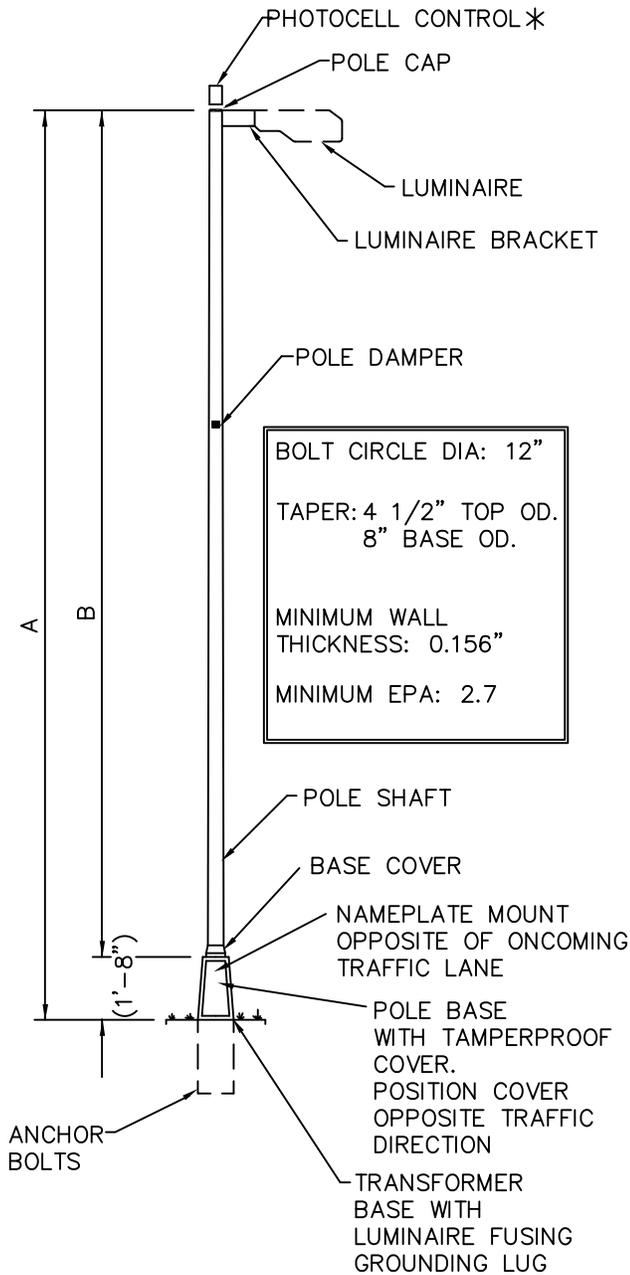
STANDARD DRAWING

**TRANSFORMER
BASE**

SHEET 2 OF 2

DWG. NO. **SL-02**

POLE DIMENSION	A	B
TYPE 1	36'-8"	35'-0"
TYPE 2	31'-8"	30'-0"
TYPE 3	26'-8"	25'-0"



GENERAL DESCRIPTION – ALUMINUM ROUND TAPERED ANCHOR BASE WITH FINISH: A DARK BRONZE APPROVED BY THE CITY ENGINEER. THE PAINT SHALL BE A POWDER PAINT FINISHED TO A GLOSS OF 35% (AT 60 DEGREES) SPUN ALUMINUM FINISH WITH POLE CAP, TRANSFORMER BASE, BASE COVER AND BOLT COVERS.

POLE CAP – PROVIDE AN ORNAMENTAL ALUMINUM ALLOY CAP FASTENED VIA STAINLESS STEEL SCREWS.

POLE DAMPER – PROVIDE A SECOND MODE VIBRATION DAMPER ATTACHED TO MIDPOINT VIA WELDING. LOCATE INSIDE POLE. FACTORY INSTALLED.

BASE FLANGE – PROVIDE A ONE PIECE CAST SOCKET OF ALUMINUM ALLOY 356 THE FLANGE SHALL BE JOINED TO THE SHAFT BY MEANS OF CONTINUOUS WELD EXTERNALLY AND INTERNALLY.

BASE COVER – PROVIDE BOLT COVERS OF ALUMINUM ALLOY 43 AND STAINLESS STEEL SCREWS FOR ATTACHMENT.

MISCELLANEOUS HARDWARE – ALL NUTS, BOLTS, AND WASHERS USED IN THE FABRICATION OF THE POLE SHALL BE GRADE 18-8 STAINLESS STEEL EXCEPT FOR ANCHORAGE HARDWARE.

WRAPPING – EACH POLE SHAFT SHALL BE WRAPPED WITH PROTECTIVE PAPER SECURED IN PLACE. ALL PARTS SHALL BE BOXED AND/OR BANDED.

POLE SHAFT – THE SHAFT SHALL BE ONE-PIECE SEAMLESS WITH A MINIMUM WALL THICKNESS OF 0.156 INCHES, ROUND TAPERED TUBE OF ALLOY 6063 AND SHALL BE FULL-LENGTH TEMPERED AFTER WELDING ON TOP BASE FLANGE TO PRODUCE THE T6 TEMPER. THE ENTIRE POLE ASSEMBLY SHALL BE RATED @ 90 MPH WITH A 30% GUST FACTOR FOR AN EPA. MINIMUM OF 2.7 TEMPLATE CUT FOR LUMINAIRE.

*NONE PHOTOCELL REQUIRED PER CIRCUIT

APPROVED MANUFACTURER – HAPCO SERIES 52, LEXINGTON/VALMONT OR APPROVED EQUAL.

Date: 03/15/2011



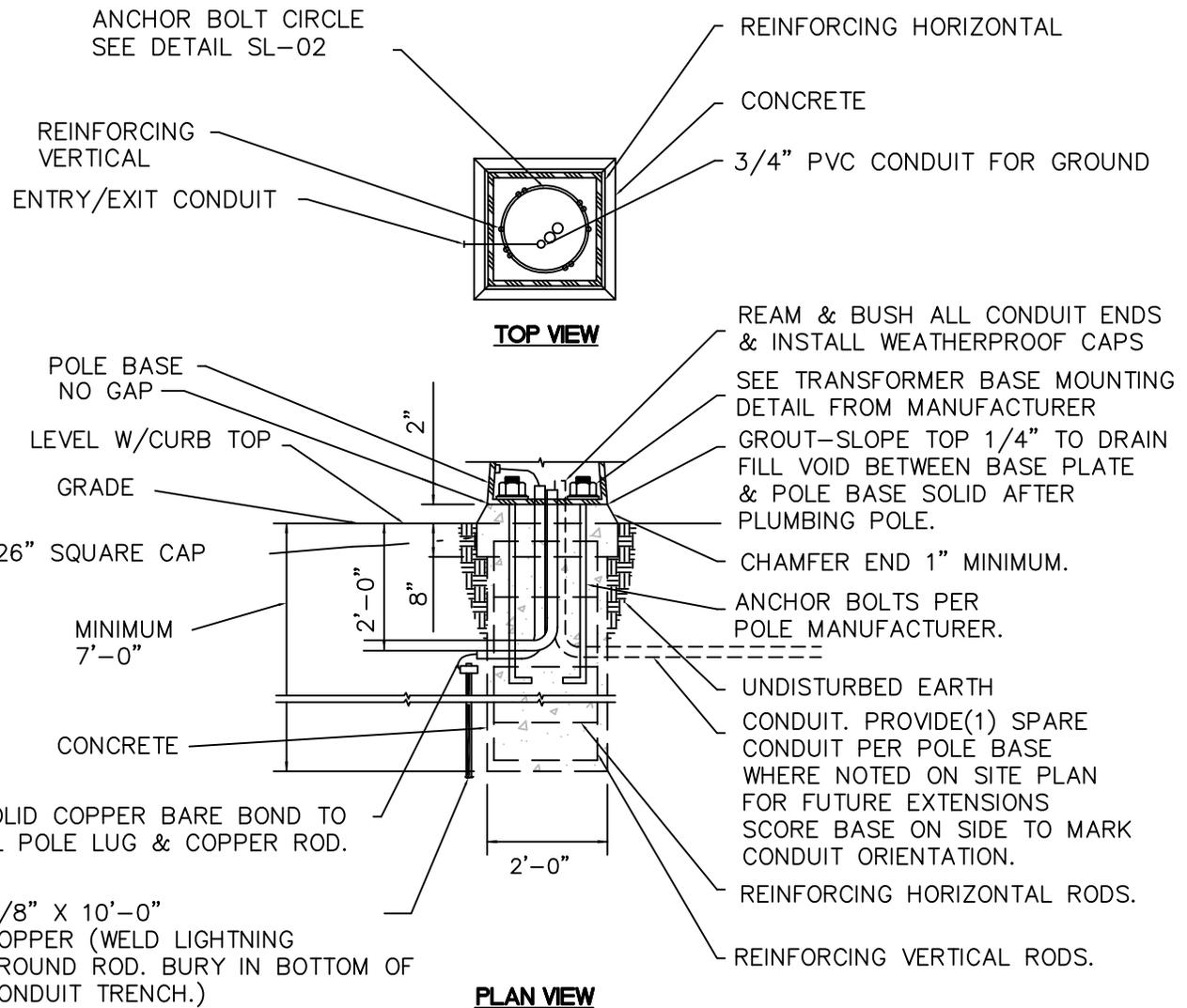
CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

LIGHT POLE

SHEET 1 OF 1

DWG. NO. **SL-03**



CONCRETE – CLASS C, 4000 PSI, 5–7% AIR ENTRAINED. FILL ALL EXPOSED SURFACE VOIDS. CHAMFER ALL EDGES, SLOPE TOP 1/4" WITH GROUT TO DRAIN WATER (FILL VOID BETWEEN BASE PLATE & POLE BASE SOLID, AFTER PLUMBING POLE), ADJUST SO TRANSFORMER BASE HAS NO GAP TO GROUTED SURFACE. HOT OR COLD WEATHER – FOLLOW ODOT CONSTRUCTION & MATERIAL SPECIFICATIONS SECTION 625.

CONCRETE FINISH – REMOVE ALL FORM MARKS, HAND RUB EXPOSED TOP AND SIDES WITH CARBIDE STONE.

REINFORCING – ASTM A-615 GRADE 60, TYPE S DEFORMED BILLET: #6 VERTICALS, (6 TOTAL), #4 HORIZONTALS 12" O.C., CIRCULAR FORMED. WIRE TIE ALL CONNECTIONS, MAINTAIN 3" MINIMUM CONCRETE COVER.

GROUNDING – PROVIDE 5/8" X 10'-0" COPPER WELD ONE-PIECE GROUND ROD. DRIVE A MINIMUM OF 2'-0" BELOW GRADE. RUN #4 AWG SOLID COPPER GROUNDING ELECTRODE CONDUCTOR IN 3/4" PVC CONDUIT FROM ROD TO ENCLOSURE GROUND BAR. "CAD" WELD WIRE CONNECTION AT ROD.

Date: 03/15/2011



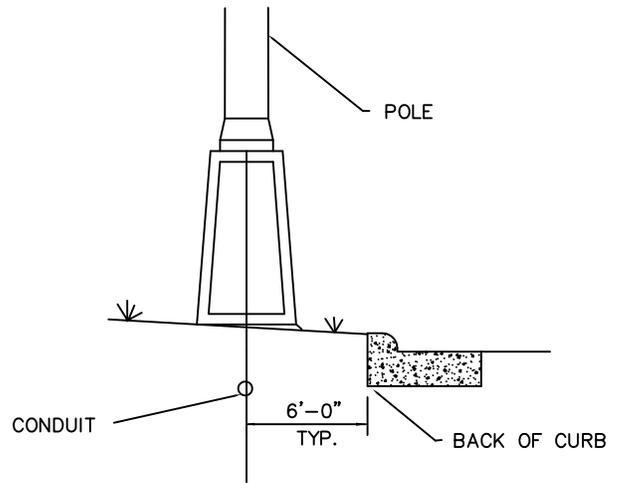
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ENGINEERING

STANDARD DRAWING

**POLE
FOUNDATION**

SHEET 1 OF 2

DWG. NO. **SL-04**



TYPICAL FOUNDATION LOCATION

LUMINAIRE FUSING – REFER TO TRANSFORMER BASE DETAIL SL-02

GROUNDING LEG – REFER TO TRANSFORMER BASE DETAIL SL-02

ANCHORAGE – PROVIDE A SET OF FOUR-50,000 PSI-MIN YIELD STEEL STRENGTH ANCHOR BOLTS, THREADED, HOT-DIPPED GALVANIZED AT THE THREADED END FOR AT LEAST 10". THE BOLTS SHALL INCLUDE A 4" MINIMUM RIGHT ANGLE HOOK AT THE UNTHREADED END. PROVIDE GALVANIZED NUT, LOCKWASHERS AND FLATWASHERS FOR EACH BOLT.

GROUT – 10,000 PSI, HIGH STRENGTH, NON-SHRINK, NON-METALLIC, COMPLY WITH CRD-C-621, PROVIDE SAND COAT FINISH (PROVIDE SONNOGROUT OR APPROVED EQUAL).

WEATHERPROOFING – PROVIDE PENETRATING SURFACE APPLIED, 1 COAT CONCRETE WATERPROOFING AGENT. MATERIAL SHALL BE CLEAR PENETRATING, WATER BASED, ALKYALKOXYSILANE AND CONTAIN A MINIMUM OF 40% BY WEIGHT SOLIDS AND BE APPLIED PER MANUFACTURER'S DIRECTIONS. COVERAGE SHALL BE 150 SQ. FEET PER GALLON (PROVIDE HYDROZO ENVIROSEAL 40 OR APPROVED EQUAL). APPLY 1 COAT TO ALL CONCRETE EXPOSED SURFACES ABOVE GRADE.

FIELD CONDITIONS – CONSULT ENGINEER FOR ABNORMAL SOIL CONDITIONS SILTS AND CLAY WITH WATER LIMITS GREATER THAN 50%, HIGH ORGANIC SOILS, SHALLOW BEDROCK, ETC.

CONDUIT – SHALL BE HEAVY WALL 2" OR 3/4" PER GRAPHIC. RIGID NON-METALLIC SCHEDULE 40 PVC FOR USE ABOVE & BELOW GROUND OR CONCRETE ENCASED. RATED FOR 90 DEGREES CELSIUS CONDUCTORS AND USE IN DIRECT SUNLIGHT. MATERIAL SHALL BE UL LISTED AND COMPLY WITH NEMA TC2-1978 AND F.S. #WC-1094A. PROVIDE IN 10 FOOT SECTIONS. SEAL ALL JOINTS WATERTIGHT. GLUE JOINTS WITH PVC CEMENT. BUSH ALL ENDS. ALL BENDS SHALL USE LONG RADIUS PREFORMED ELBOWS. EXTEND CONDUIT TO MINIMUM 2'-0" BELOW GRADE. LOCATION TO BE COORDINATED WITH LANDSCAPING AND UTILITIES.

IF UNIT TYPE DUCT CABLE IS UTILIZED IN TRENCHES IN LIEU OF PVC CONDUIT, AT POLE FOUNDATIONS RETAIN THE PVC CONDUIT SPECIFIED ABOVE IT SHALL FUNCTION AS A SLEEVE FOR THE DUCT CABLE. OVERSIZE PVC CONDUIT EITHER 2 1/2" OR 3" AS REQUIRED BASED ON DUCT CABLE OUTSIDE DIAMETER.

CONDUIT CAPS – TERMINAL POINTS OF ALL CONDUIT AND DUCT CABLE SHALL BE SEALED PROMPTLY AFTER INSTALLATION BY MEANS OF A MOLDED PLASTIC OR RUBBER CAPPING DEVICE THAT ONLY PERMITS WIRE PASS THROUGH.

Date: 03/15/2011



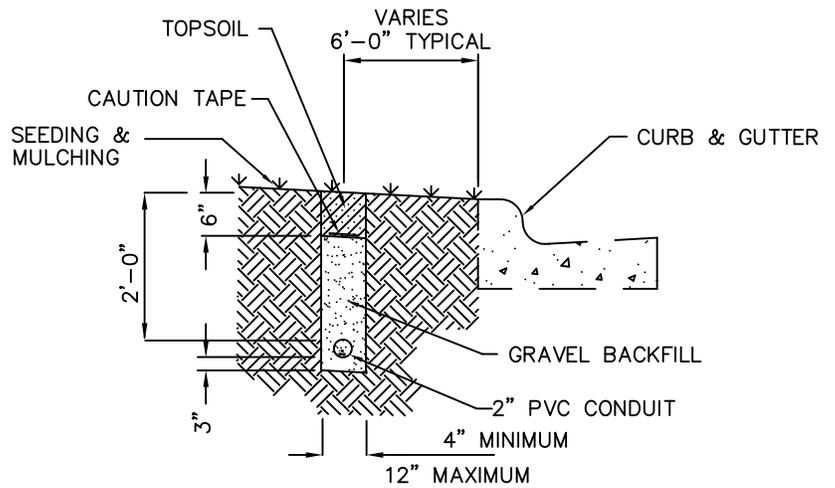
CITY OF DUBLIN™
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STANDARD DRAWING

**POLE
FOUNDATION**

SHEET 2 OF 2

DWG. NO. **SL-04**



* NO SPLICING OF DISTRIBUTION CABLE LESS THAN 500 FEET IN LENGTH.

TRENCHING – CONDUIT TRENCHES SHALL HAVE VERTICAL WALLS AND BE EXCAVATED TO A DEPTH THAT PERMITS CONDUIT TO BE LAID AT 2'-0" BELOW FINISH GRADE WITH A GRAVEL COVER, ABOVE AND BELOW. BACKFILL GRAVEL TO TOPSOIL LIMIT. TRENCHES SHALL BE LOCATED ADJACENT TO AND PARALLEL WITH CURBS OR PAVEMENTS AND SHALL NOT DEVIATE MORE THAN 6" FROM THE LINES DESIGNATED. TRENCHES SHALL NOT EXCEED 12" IN WIDTH. REMOVE EXCESS SOIL AFTER BACKFILLING.

GRAVEL – SHALL BE UNCRUSHED WASHED GRAVEL AND PASS A 1/2" SIEVE. POUR IN PLACE AND COMPACT TO 95% STANDARD PROCTOR IN LAYERS NOT EXCEEDING 6" EACH.

TOPSOIL – FOR BACKFILLING SHALL BE CLEAN, LOOSE FRIABLE, LOAMY TOPSOIL FREE OF SUBSOIL OR REFUSE. TOPSOIL MAY BE FROM THE SITE OR IMPORTED. TOPSOIL SHALL BE PLACED AND SPREAD OVER THE AREAS DESIGNATED TO A DEPTH SUFFICIENTLY GREATER THAN THAT SHOWN SO THAT AFTER NATURAL SETTLEMENT THE COMPLETED WORK WILL CONFORM TO THE ELEVATIONS SHOWN.

SEEDING AND MULCHING – SHALL COMPLY WITH CITY OF COLUMBUS, OHIO CONSTRUCTION AND MATERIAL SPECIFICATIONS SECTION 659.

CONDUIT – SHALL BE HEAVY WALL RIGID NON-METALLIC SCHEDULE 40 PVC FOR USE ABOVE AND BELOW GROUND OR CONCRETE ENCASED. RATED FOR 90 DEGREES CELSIUS CONDUCTORS AND USE IN DIRECT SUNLIGHT. MATERIAL SHALL BE UL LISTED AND COMPLY WITH NEMA TC2-1978 AND F.S. #WC-1094A. PROVIDE IN 10 FOOT SECTIONS. SEAL ALL JOINTS WATERTIGHT. GLUE JOINTS WITH PVC CEMENT. BUSH ALL ENDS. ALL BENDS SHALL USE LONG RADIUS PREFORMED ELBOWS.

CONDUIT CAPS – PROVIDE MOLDED PLASTIC OR RUBBER CAPPING DEVICE THAT ONLY PERMITS WIRE TO PASS THROUGH WHILE PREVENTING DIRT, WATER, ETC. FROM ENTERING.

PULL WIRE – ALL EMPTY CONDUIT INSTALLED FOR FUTURE LIGHTING SHALL CONTAIN A NO. 10 AWG COPPER-CLAD OR ALUMINUM-CLAD PULL WIRE.

WIRING – DISTRIBUTION CABLE SHALL BE #4 AWG XHHW (WET RATED) STRANDED COPPER 600V, 90 DEGREES CELSIUS CONDUCTORS. USE #6 IN APPROPRIATE CONDITIONS. SYSTEM GROUND CABLE SHALL BE #4 AWG FOR POLE TO POLE APPLICATIONS.

METALIZED CAUTION TAPE – 79mm (3") WIDE RED PLASTIC TAPE WITH BLACK LETTERS READING "CAUTION BURIED ELECTRIC LINE BELOW". BURY ABOVE CONDUIT 158mm (6") MAX. BELOW GRADE. RUN CONTINUOUS IN ALL TRENCHES NOT COVERED BY PAVEMENT.

Date: 03/15/2011



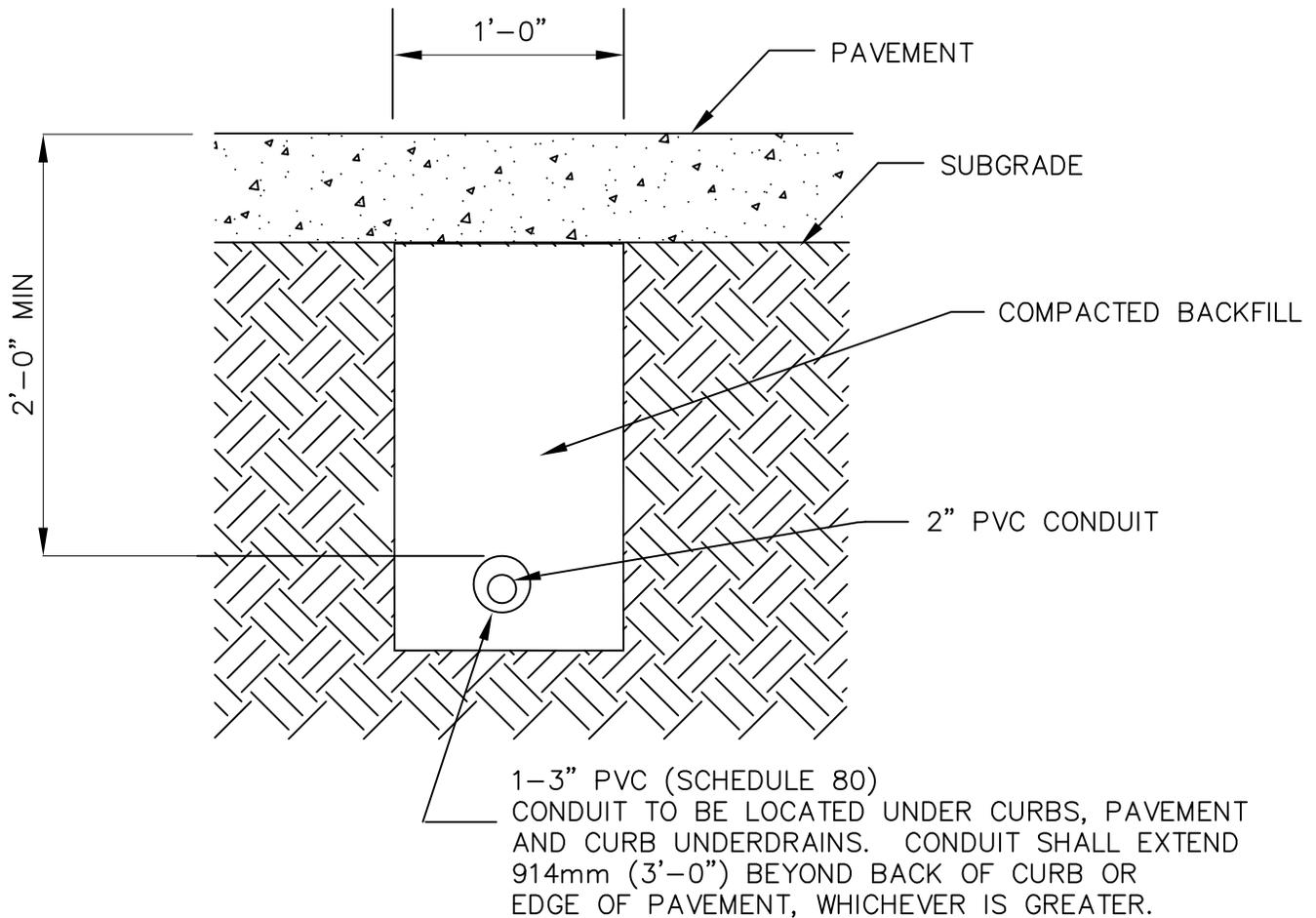
CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

TRENCHES

SHEET 1 OF 3

DWG. NO. **SL-05**



CONDUIT SLEEVE CROSSING PROPOSED PUBLIC ROADWAYS AND COMMERCIAL DRIVEWAYS

GENERAL – CONDUIT SLEEVES SHALL BE PROVIDED WHERE STREET LIGHTING CABLES CROSS ROADWAYS. CONDUIT SLEEVES SHALL ALSO BE PROVIDED UNDER ALL PROPOSED COMMERCIAL DRIVEWAYS.

TRENCHING – TRENCHES SHALL HAVE VERTICAL WALLS AND BE EXCAVATED TO A DEPTH THAT PERMITS CONDUIT SLEEVE TO BE PLACED 610mm (2'-0") BELOW FINISH GRADE. TRENCH SHALL BE LOCATED PERPENDICULAR TO THE CENTERLINE OF ROADWAYS AND COMMERCIAL DRIVEWAYS UNLESS OTHERWISE SPECIFICALLY NOTED. MAINTAIN INLINE WITH CONDUIT SETBACK DIMENSIONS AT INTERSECTIONS AND CURB CUTS.

BACKFILL – SHALL COMPLY WITH CITY OF COLUMBUS, OHIO CONSTRUCTION AND MATERIAL SPECIFICATIONS ITEM 636 TYPE 1, 2 OR 3 OR ITEM 912 COMPACTED GRANULAR BACKFILL.

MATERIALS – SHALL COMPLY WITH ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS SECTION 725.05.

Date: 03/15/2011



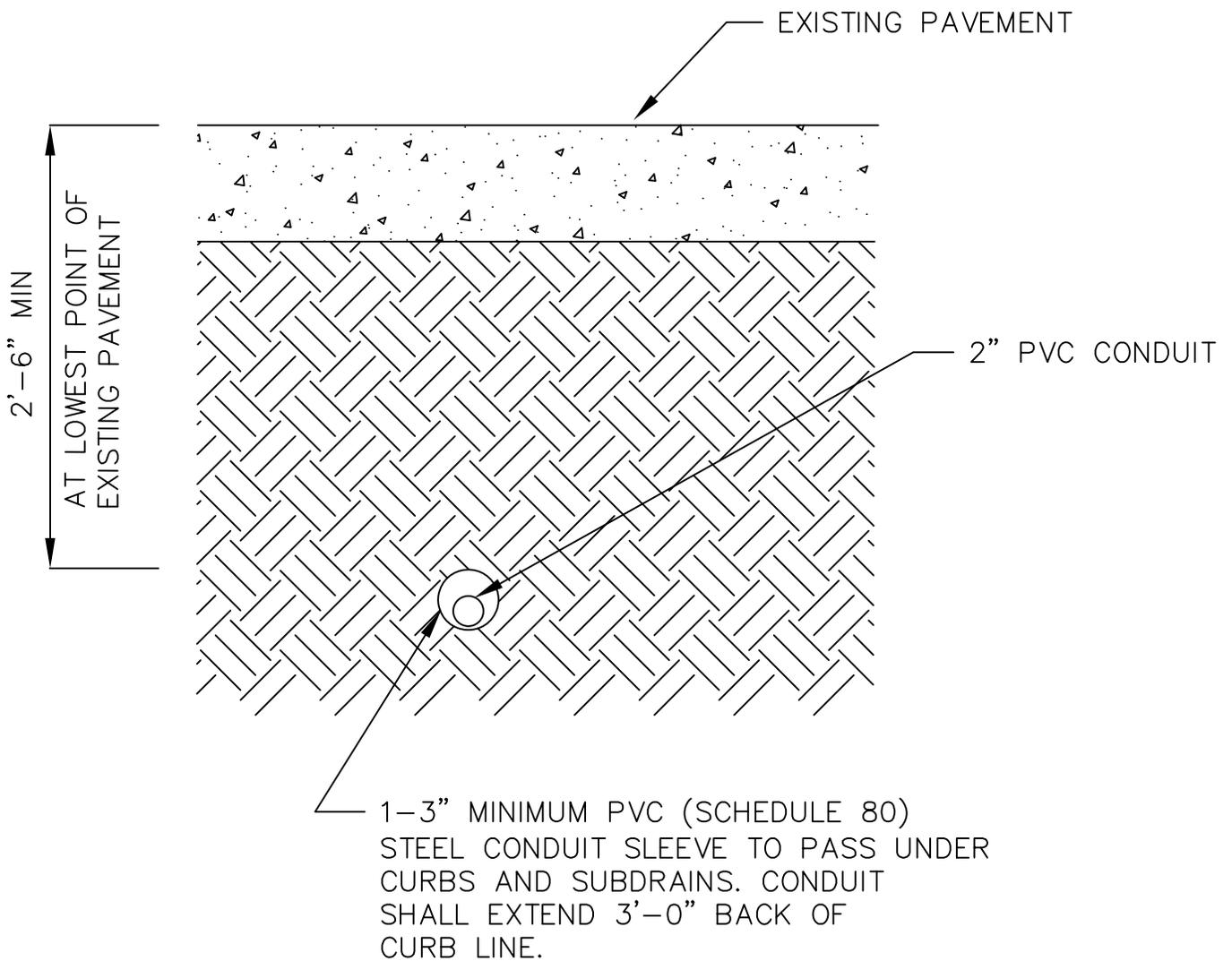
CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

TRENCHES

SHEET 2 OF 3

DWG. NO. **SL-05**



CONDUIT SLEEVES UNDER EXISTING PAVEMENT

CONDUIT SLEEVES PLACED UNDER EXISTING PAVEMENT OR PAVED SHOULDERS SHALL BE INSTALLED BY DRILLING, SUBJECT TO THE APPROVAL OF THE CITY ENGINEER. IF PLACED BY DRILLING, THE BORE SHALL NOT EXCEED THE CONDUIT DIAMETER BY MORE THAN (5) PERCENT. CONDUIT SHALL BE PLACED WITH A MINIMUM AMOUNT OF DISTURBANCE TO THE ROADWAY. CONDUIT SLEEVES SHALL BE GALVANIZED STEEL CONDUIT SIZED AS SHOWN WITH FITTINGS FURNISHED MEETING THE REQUIREMENTS OF ANSI C 80.1, C80.4, AND UL 6 FOR TYPE 1 RIGID STEEL CONDUIT. EACH LENGTH SHALL BEAR THE UL LABEL. CONTRACTOR WILL OBTAIN A "PERMIT TO WORK IN EXISTING STREET PUBLIC WAY" FROM THE DIVISION OF ENGINEERING, CITY OF DUBLIN.

Date: 03/15/2011



CITY OF DUBLIN™
ENGINEERING

STANDARD DRAWING

TRENCHES

SHEET 3 OF 3

DWG. NO. **SL-05**

COORDINATION – COORDINATE LOCATION OF TRANSFORMER AND PAD GRADING WITH AEP AND THE CITY ENGINEER.

SERVICE TRANSFORMER – PROVIDED, INSTALLED AND WIRED BY AEP.

TRANSFORMER PAD GRADING – INSTALL PER AEP REQUIREMENTS FOR SIZE AND LOCATION. REFER TO SERVICE ENCLOSURE PAD FOR MATERIAL SPECIFICATIONS.

SERVICE ENCLOSURE PAD – STRUCTURE SHALL BE SET CLOSE TO THE AEP POWER COMPANY TRANSFORMER PAD. LOCATION OF THE TRANSFORMER PAD IN RELATIONSHIP TO THE ENCLOSURE PAD SHALL BE COORDINATED WITH THE CITY ENGINEER. CONCRETE SHALL BE CLASS C. FILL ALL EXPOSED SURFACE VOIDS. CHAMFER ALL EDGES 3/4-INCH OR 1-INCH. SLOPE TOP 1/4" TO DRAIN WATER. FINISH – REMOVE ALL FORM MARKS, PROVIDE FLOATED AND STEEL TROWELED FINISH.

SERVICE ENCLOSURE – PROVIDE A NEMA WATERTIGHT STAINLESS STEEL ENCLOSURE. SIZE – 36"H X 30"W X 12"D; HAVING A SINGLE CONTINUOUS HINGED LOCKING DOOR, INTERIOR MOUNTING PANEL WITH A 6" MINIMUM STAINLESS STEEL MATCHING FLOOR STAND. CONCRETE AND OR BOLT TYPE ANCHOR AND LEVEL TO PAD VIA STAINLESS STEEL MACHINE BOLT, NUTS & LOCK WASHERS. DRILL BOTTOM OF ENCLOSURE WITH 6MM (1/4") WEEP HOLE AT LOW POINT. CONCRETE PAD SHALL NOT EXTEND ABOVE PROPOSED GRADE MORE THAN 2-INCHES.

SERVICE ENCLOSURE FINISH – A DARK BRONZE APPROVED BY THE CITY ENGINEER. THE PAINT SHALL BE A POWDER PAINT FINISHED TO A GLOSS OF 35% (AT 60 DEGREES).

SERVICE ENCLOSURE LOCK – THREE POINT MECHANISM WITH LOCKABLE HANDLE. PADLOCK PROVIDED BY THE CITY.

PHOTOCELL CONTROLLER – PROVIDE AN ON-OFF PHOTO INITIATED CONTROLLER WITH SEALED CADMIUM SULFIDE PHOTOCELL TO OPERATE IN -30 DEGREES F TO +140 DEGREES F TEMPERATURES, THERMAL INERTIA OF 15 SECONDS MINIMUM, THREADED PIPE NIPPLE, RATED 16 AMPS 2000 WATTS AT 120V, AND SINGLE POLE SINGLE THROW SWITCH. LIGHT SHALL BE 2 FOOT CANDLES FOR TURN ON AND 10 FOOT CANDLES FOR TURN OFF. PROVIDE IN WEATHERPROOF ENCLOSURE. LOAD SHALL REMAIN "ON" IN CASE OF CELL FAILURE. MOUNT ATOP FIRST POLE FROM SERVICE ENCLOSURE.

APPROVED MANUFACTURER – PARAGON #PJ201-00

GROUNDING – PROVIDE 5/8" X 10' COPPER WELD ONE PIECE GROUND ROD. DRIVE A MINIMUM OF 2'-0" BELOW GRADE. PROVIDE #8 AWG SOLID COPPER GROUNDING ELECTRODE CONDUCTOR IN 3/4" PVC CONDUIT FROM ROD TO ENCLOSURE GROUND BAR. CADWELD WIRE CONNECTION TO ROD.

FUSING – SERVICE ENTRANCE – PROVIDE DUAL ELEMENT, TIME DELAY FUSES, UL CLASS RK-1, 600 V, REJECTION TYPE.

APPROVED MANUFACTURER – BUSS #LP-RK

Date: 03/15/2011



CITY OF DUBLIN

STANDARD DRAWING

LIGHTING CONTROLLER

SHEET 1 OF 4

DWG. NO. SL-13

CONTROL CIRCUIT – PROVIDE SINGLE ELEMENT, FAST ACTING TYPE FUSE, UL CLASS CC, 120 V, REJECTION TYPE.

APPROVED MANUFACTURER – BUSS #KTK-R

CONDUIT – SHALL BE HEAVY WALL 2” OR 3/4” PER GRAPHIC. RIGID NON METALLIC SCHEDULE 40 PVC FOR USE ABOVE AND BELOW GROUND OR CONCRETE ENCASE. RATED FOR 90 DEGREES CELSIUS CONDUCTORS AND USE IN DIRECT SUNLIGHT. MATERIAL SHALL BE UL LISTED AND COMPLY WITH NEMA TC2-1978 AND F.S. #WC-1094A. PROVIDE IN 10’ SECTIONS. SEAL ALL JOINTS WATERTIGHT. GLUE JOINTS WITH PVC CEMENT AND BUSH ALL ENDS. ALL BENDS SHALL USE LONG RADIUS PRE FORMED ELBOWS. EXTEND CONDUIT TO MINIMUM 2’-0” BELOW GRADE. LOCATION TO BE COORDINATED WITH LANDSCAPING AND UTILITIES.

IF UNIT TYPE DUCT CABLE IS UTILIZED IN TRENCHES IN LIEU OF PVC CONDUIT, AT POLE FOUNDATIONS RETAIN THE PVC CONDUIT SPECIFIED ABOVE IT SHALL FUNCTION AS A SLEEVE FOR THE DUCT CABLE. OVERSIZE PVC CONDUIT EITHER 2 1/2” OR 3” AS REQUIRED BASED ON DUCT CABLE OUTSIDE DIAMETER.

WIRING – REFER TO GENERAL SPECIFICATIONS.

LIGHTING CONTROLLER – A CLASS R FUSIBLE COMBINATION LIGHTING CONTACTOR TYPE CONTROLLER ASSEMBLY RATED 600V, 60A-2P, 60HZ WITH SOLID NEUTRAL, ELECTRICALLY HELD WITH CONTROL FUSE, 120V CONTROL VOLTAGE 3 POSITION HAND – OFF – AUTO SELECTOR SWITCH AND PHOTOCELL CONTROL. MOUNT ALL DEVICES IN A SERVICE ENCLOSURE LESS PHOTO CONTROL.

APPROVED MANUFACTURER – SQUARE ”D” NIGHT-MASTER SPC-61 (OR APPROVED EQUAL).

480V SYSTEM

CLASS 8903 NIGHTMASTER LIGHTING CONTACTOR 8903SPC61V81CFF4G102TY1
CONTACTOR RATING – 60 AMPS
FUSED COMBINATION STARTER WITH CLASS R FUSE CLIPS (FUSES NOT INCLUDED)
3 POLE DEVICE
TYPE 3R ENCLOSURE SUITABLE ONLY FOR USE AS SERVICE EQUIPMENT.
SPECIFIED FOR 480 VOLTS, 60 HZ POWER SYSTEM
FUSED CONTROL TRANSFORMER SELECTED WITH 120V, 60 HZ COIL

T – STANDARD CAPACITY
480 VOLT PRIMARY
120 VOLT SECONDARY

FUSING

F4 – 2 PRIMARY CONTROL FUSES
F – 1 SECONDARY CONTROL FUSE

CONTROL UNITS SUPPLIED

C – HAND-OFF-AUTO SELECTOR SWITCH
G102 – WIRED FOR REMOTE PHOTOCELL
N – ADDITION OF SOLID NEUTRAL
Y1 – UL PANEL LABEL

Date: 03/15/2011



CITY OF DUBLIN

STANDARD DRAWING

LIGHTING CONTROLLER

SHEET 2 OF 4

DWG. NO. SL-13

277V SYSTEM

CLASS 8903 NIGHTMASTER LIGHTING CONTACTOR 8903SPC61V85CFF4G102TY1
CONTACTOR RATING – 60 AMPS
FUSED COMBINATION STARTER WITH CLASS R FUSE CLIPS (FUSES NOT INCLUDED)
3 POLE DEVICE
TYPE 3R ENCLOSURE SUITABLE ONLY FOR USE AS SERVICE EQUIPMENT.
SPECIFIED FOR 277 VOLTS, 60 HZ POWER SYSTEM
FUSED CONTROL TRANSFORMER SELECTED WITH 120V, 60 HZ COIL
T – STANDARD CAPACITY
277 VOLT PRIMARY
120 VOLT SECONDARY
FUSING
F4 – 2 PRIMARY CONTROL FUSES
F – 1 SECONDARY CONTROL FUSE
CONTROL UNITS SUPPLIED
C – HAND-OFF-AUTO SELECTOR SWITCH
G102 – WIRED FOR REMOTE PHOTOCELL
N – ADDITION OF SOLID NEUTRAL
Y1 – UL PANEL LABEL

240V SYSTEM

CLASS 8903 NIGHTMASTER LIGHTING CONTACTOR 8903SPC62V80CFF4G102TY1
CONTACTOR RATING – 60 AMPS
FUSED COMBINATION STARTER WITH CLASS R FUSE CLIPS (FUSES NOT INCLUDED)
3 POLE DEVICE
TYPE 3R ENCLOSURE SUITABLE ONLY FOR USE AS SERVICE EQUIPMENT.
SPECIFIED FOR 240 VOLTS, 60 HZ POWER SYSTEM
FUSED CONTROL TRANSFORMER SELECTED WITH 120V, 60 HZ COIL
T – STANDARD CAPACITY
240 VOLT PRIMARY
120 VOLT SECONDARY
FUSING
F4 – 2 PRIMARY CONTROL FUSES
F – 1 SECONDARY CONTROL FUSE
CONTROL UNITS SUPPLIED
C – HAND-OFF-AUTO SELECTOR SWITCH
G102 – WIRED FOR REMOTE PHOTOCELL
N – ADDITION OF SOLID NEUTRAL
Y1 – UL PANEL LABEL

Date: 03/15/2011



CITY OF DUBLIN

STANDARD DRAWING

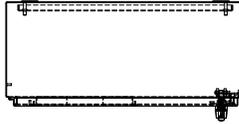
LIGHTING CONTROLLER

SHEET 3 OF 4

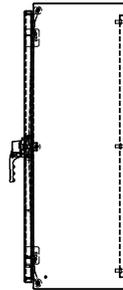
DWG. NO. *SL-13*

SERVICE ENCLOSURE
HOFFMAN #A36H3012SSLP3PT
OR APPROVED EQUAL

TOP VIEW



SIDE VIEW



1" CHAMFER

2"

FINISHED GRADE

FLOOR STAND KIT
HOFFMAN #AFK0612
OR APPROVED EQUAL

4"x4" WELDED WIRE
MESH WITH
3" COVER (MIN.)

2'-0"

2" CONDUIT & WIRE TO
PROPOSED STREET
LIGHTS BY CONTRACTOR

2" CONDUIT & WIRE TO
POWER COMPANY
TRANSFORMER BY
CONTRACTOR

6" MIN.

2" CONDUIT WITH PULL
STRINGS FOR FUTURE
LIGHTING CIRCUIT. CAP AND
STAKE LOCATION

GROUND ROD

3'-0" x 1'-6"

CONCRETE SERVICE
ENCLOSURE PAD

Date: 03/30/2011



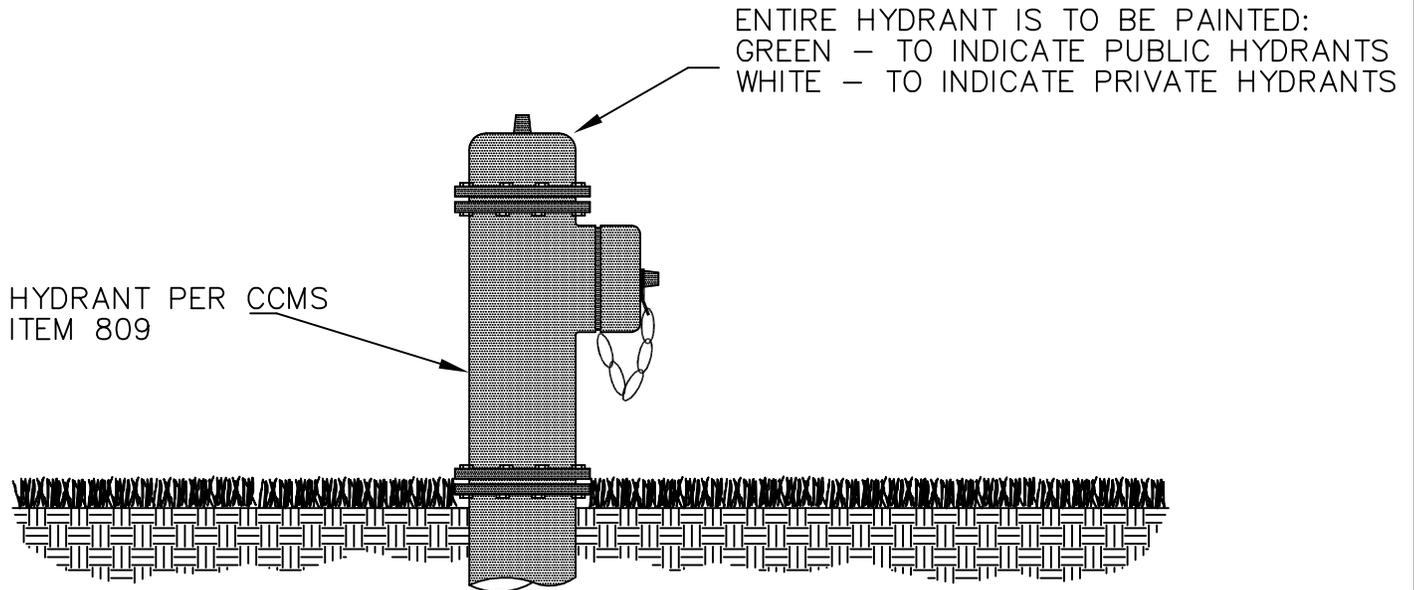
CITY OF DUBLIN

STANDARD DRAWING

LIGHTING CONTROLLER

SHEET 4 OF 4

DWG. NO. SL-13



NOTES:

PAIN T IS SPECIAL MIXTURE FOR THE CITY OF DUBLIN
 SUPPLIED BY: CREATIVE PAINT SUPPLIES
 7020 W STATE RT 161
 DUBLIN, OHIO 43016
 OR APPROVED EQUAL

PRIMER DIRECT TO METAL (DTM) 180-11
 RUST-SCAT ACRYLIC FINISH
 GREEN NO. VISTA GREEN 80-105
 WHITE NO. D876967-31-1

PAINT AND PRIMER TO BE APPLIED BY BRUSH ONLY.

Date: 09/18/2006



CITY OF DUBLIN™
 ENGINEERING

STANDARD DRAWING

***FIRE HYDRANT
 PAINTING***

SHEET 1 OF 1

DWG. NO. ***WA-01***

G. SCOPE OF WORK

The work for which bids are invited consists of:

5,500 feet of 4-lane boulevard with: modern multi-lane roundabout; curb and gutter; asphalt shared-use path; AEP duct system (6" PVC conduit, Type EB); water main; sanitary sewer; storm sewer; precast reinforced concrete arch culvert (28 feet span x 10 feet rise including precast headwalls and wingwalls); dry-laid stone wall; and street lights.

IV. OWNER COMPLETED FORMS

A. OWNER EXECUTION CHECKLIST

The following list highlights and serves as a reminder of actions required to execute the Contract with the selected bidder.

Notice of Award

- Complete the form once bidder selected
- Mail form to bidder
- Collect acceptance from bidder

Notice of Award to Surety and Surety's Agent

- Complete the form once bidder selected
- Send the bond to legal counsel for double-check of validity
- Send notice form to Surety and Agent at the addresses listed on the Bond form

Bid Tabulation Sheet

- If Prevailing Wage applies, ensure that the Bid Tabulation Sheet is completed and in your Project file

Prevailing Wage

- Check the date of the Determination Letter included with the Contract Documents. If it has expired, issue new prevailing wage rates to the Contractor.

Owner/Contractor Agreement

- Have the Contractor sign the Agreement
- Have the Law Director review and sign the Agreement
- Have the Fiscal officer sign the Agreement
- Have the CITY OF DUBLIN representative sign the Agreement

Notice of Commencement

- Complete the Notice of Commencement form and put it in the Project file
- Must produce it if requested but no filing requirement

Notice to Proceed

- Issue the Notice to Proceed

Bidder's and Subcontractors' Certificate(s) of Licensure

- If applicable, Collect from Bidder if not submitted with Bid

B. NOTICE OF AWARD TO BIDDER

Date: _____

PROJECT: EMERALD PARKWAY - PHASE 8

The CITY OF DUBLIN (Owner) has considered the Bid submitted by you for the above-described work in response to the Legal Notice dated Thursday, October 31, 2013.

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

You are required by the Instructions to Bidders to execute the Contract and furnish the required documents within ten (10) calendar days from the date of this notice to you.

If you fail to execute said Contract within ten (10) days from the date of this notice, Owner may—at its discretion—exercise its rights with respect to your Bid guaranty and 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 _____, 2013.

Sincerely,

Paul A. Hammersmith P.E.
Director of Engineering / City Engineer

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged.

Bidder _____

This _____ day of _____, 2013

By: _____

Title: _____

C. NOTICE OF AWARD TO SURETY AND SURETY'S AGENT

(Surety)

(Address)

(City/State/Zip)

(Surety's Agent)

(Address)

(City/State/Zip)

Date: _____

SENT BY REGULAR U.S. MAIL

RE: NOTICE OF AWARD OF CONTRACT

To Whom It May Concern:

You are notified that your principal, _____, has been awarded a contract for the CITY OF DUBLIN, EMERALD PARKWAY - PHASE 8 project, in the amount of \$_____ by the CITY OF DUBLIN, Ohio .

Sincerely,

Paul A. Hammersmith P.E.
Director of Engineering / City Engineer

D. NOTICE TO PROCEED

To:

Date: _____

Project: **EMERALD PARKWAY - PHASE 8**

Owner: CITY OF DUBLIN, OHIO
5200 Emerald Parkway, Dublin, Ohio 43017

You are hereby notified to commence Work in accordance with the City/Contractor Agreement dated _____, and you are to complete the Work in the time required by the Contract Documents. Within ten (10) days from this Notice to Proceed date, you will begin physical, on-site improvements. You are required to return an acknowledged copy of this Notice to Proceed, to the Owner, indicating Acceptance of this Notice to Proceed.

Paul A. Hammersmith P.E.
Director of Engineering / City Engineer

ACCEPTANCE OF NOTICE TO PROCEED

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by _____,
this the day of _____, 2013.

By: _____

Title: _____

E. NOTICE OF COMMENCEMENT OF PUBLIC IMPROVEMENT (O.R.C. §1311.252)

NOTICE IS HEREBY GIVEN OF THE COMMENCEMENT OF A PUBLIC IMPROVEMENT AS FOLLOWS:

1. The public improvement is identified as the CITY OF DUBLIN, EMERALD PARKWAY - PHASE 8 project located at Emerald Parkway continuing east from Dublin Road to 2000 ft from Hard Road.
2. The public authority and Owner responsible for the public improvement is the CITY OF DUBLIN, Ohio, 5200 Emerald Parkway, Dublin, Ohio 43017 .
3. The principal contractor(s) for the public improvement are as follows:

 , .
4. The date the CITY OF DUBLIN first executed a contract with a principal contractor for this public improvement is .
5. The name and address of the representative for the CITY OF DUBLIN upon whom service may be made for the purposes of serving an affidavit pursuant to Section 1311.26 of the Ohio Revised Code is Paul A. Hammersmith P.E., Director of Engineering / City Engineer for the CITY OF DUBLIN, Ohio, 5800 Shier-Rings Road, Dublin, Ohio 43016.

The foregoing instrument was acknowledged before me this _____, day of _____, 2013 by Paul A. Hammersmith P.E., Director of Engineering / City Engineer for the CITY OF DUBLIN, Ohio.

Signature and Seal of person taking acknowledgement:

V. ADDITIONAL PROJECT FORMS

A. PAYROLL INFORMATION

PROJECT: EMERALD PARKWAY - PHASE 8

I, _____ (Name),
_____ (Title) of _____
(Company Name), state the following:

1. That I pay or supervise the payment of the persons employed by _____ (Company Name) on the above-referenced project.
2. That during the payroll period commencing on the ____ day of _____, 2013, and ending on the ____ day of _____, 2013, all persons employed on said project have been paid the full weekly wages earned; that no rebates have been or will be made either directly or indirectly to or on behalf of said _____ (Contractor/Subcontractor) from the full weekly wages earned by such persons; and that no deductions have been made either directly or indirectly from the full wages earned by such persons, other than permissible deductions as defined in Regulations, Part 3 (29 CFR Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. 276c), and described below:

3. That any payrolls otherwise under this Agreement for Construction (the "Agreement") required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in the specifications as supplied by the Department of Industrial Relations or any wage determination incorporated into the Agreement; and that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

4. That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with the Ohio Apprenticeship Council.

5. That (check applicable box):

- a. WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS:

In addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above-referenced payroll, payments of fringe benefits listed in the Agreement have been or will be made to appropriate programs for the benefit of such employees, except as noted in Section 4 below.

- b. WHERE FRINGE BENEFITS ARE PAID IN CASH:

Each laborer or mechanic listed in the above-referenced payroll has been paid as indicated on the payroll, and amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the Agreement, except as noted in Section 4 below.

c. Exceptions:

Exception (Craft):

Explanation:

_____	_____
_____	_____
_____	_____
_____	_____

Remarks:

(Signature)

(Print Name and Title)

The willful falsification of any of the above statements may subject the Contractor or Subcontractor to fines as described in Section 4115.99 of the O.R.C.

B. FINAL AFFIDAVIT OF COMPLIANCE WITH PREVAILING WAGES

PROJECT: EMERALD PARKWAY - PHASE 8

STATE OF _____

COUNTY OF _____, SS:

I, _____, (Name of person signing the affidavit)
_____ (Title) do hereby certify that the wages paid to all employees of
_____ (Company Name) for all hours
worked on project the CITY OF DUBLIN EMERALD PARKWAY - PHASE 8 Project located at
Emerald Parkway continuing east from Dublin Road to 2000 ft from Hard Road during the
period from _____ to _____ are in compliance with the
Prevailing Wage requirements of Chapter 4115 of the Ohio Revised Code. I further certify
that no rebates or deductions have been or will be made, directly or indirectly, from any
wages paid in connection with this project, other than those provided by law.

(Signature of Affiant)

(Print Name)

Sworn to and subscribed in my presence this _____ day of _____, 2013.

Notary Public

The above affidavit must be executed and sworn to by the officer or agent or the Contractor/Subcontractor who supervised the payment of employees, before the CITY OF DUBLIN, Ohio will release the surety and/or make final payment due under the terms of the Agreement.

C. CONTRACTOR’S LIEN WAIVER AND RELEASE AGREEMENT

Project: **EMERALD PARKWAY - PHASE 8**

The undersigned hereby acknowledges receipt of payment from the City for all Work on the Project through the date of its prior Application for Payment. The undersigned acknowledges and agrees that the terms in this Agreement shall have the same meaning as in the Contract Documents for the Project.

In return for said payment, and/or pursuant to certain contractual obligations of the undersigned, the undersigned hereby waives and releases any rights it has or may have through the date of its last Application for Payment to any and all Claims and liens related to the Project, including without limitation: Claims of payment, mechanic’s liens, liens against funds, surety bond Claims, and Claims for breach of contract or unjust enrichment. The sole exception to this waiver and release is for any Claims the undersigned has made by properly and timely submitting a Claim as required by the Contract Documents. The undersigned acknowledges and agrees that this wavier and release is intended to be a comprehensive release of all Claims and liens related to the Project, including without limitation all Claims against the City, and the employees, board members, agents and representatives of any of the foregoing persons. The undersigned further certifies that this Agreement covers Claims and liens by all persons with which it did business related to the Project, including without limitation subcontractors and suppliers, through the date of its last Application for Payment. The undersigned represents that all such persons have signed an agreement in the form of this Agreement releasing any and all Claims and liens related to the Project, except for any Claims made by properly and timely submitting a Claim as required by the Contract Documents, a copy of which has been delivered to the City. The undersigned hereby represents and warrants that it has paid any and all welfare, pension, vacation, or other contributions required to be paid on account of the employment by the undersigned of any laborers on the Project.

This Agreement is for the benefit of, and may be relied upon by the City. The undersigned hereby agrees to indemnify, defend and hold harmless each of the foregoing, the Project, work or improvement, and real property from any and all Claims, or liens that are or should have been released in accordance with this Agreement.

Contractor Name: _____

Authorized Signature: _____

Title: _____

The foregoing instrument was acknowledged before me this _____, day of _____, 20____ by _____.

Signature and Seal of person taking acknowledgement:

VI. PLANS/DRAWINGS

Plans and Drawing are available at <http://www.dublin.oh.us/business/bids> when downloading the project documents on line. If you purchase a hard copy of the project documents the plans and drawings will be on the CD included in the Bid Document and 11 X 17 printed copy as well.