BID SUBMITTAL AND CONTRACT DOCUMENTS FOR THE

CITY OF DUBLIN

JOHN SHIELDS PARKWAY - PHASE 2
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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 JOHN SHIELDS PARKWAY - PHASE 2. Bids shall be received by CITY OF DUBLIN at 5800 Shier-Rings Road, Dublin, Ohio 43016 until 11:00 A.M. local time on February 9, 2016, 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: The construction of 3100 feet of new roadway including granite curb, granite edged planting beds, 66,320 square feet of brick sidewalk, parking areas with permeable pavers, 98 trees and 74,000 plantings, new street lighting and AEP duct bank. The cost estimate for the Project is $8,691,000.00.

Copies of the Contract Documents are on file at 6555 Shier-Rings Road, Dublin, Ohio 43016, where they are available for inspection by prospective bidders. Paper copies of the Contract Documents are not available for purchase.

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 substantially completed by October 15, 2016 and completed by November 30, 2016.

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: January 12, 2016
January 19, 2016
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 Mandy K. Bishop, P.E., S.I. at Telephone: 614-410-4672; Email: mbishop@gpdgroup.com.
   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 JOHN SHIELDS PARKWAY - PHASE 2 (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 $8,691,000.00.

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 Mandy K. Bishop, P.E., S.I., in writing on the form included with the Contract Documents. Inquiries shall be faxed to 614-410-4699 to the attention of Mandy K. Bishop, P.E., S.I. or emailed to mbishop@gpdgroup.com. 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. 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: 1 copy printed one sided 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 make available additional financial information, including, but not limited to, financial statements from the previous three years for review of the City. Such financial statements shall be audited financial statements to the extent available or, if not available, at least be reviewed financial statements. At the City’s discretion, it may obtain a copy of such financial information. To the extent the City maintains copies of such documents, 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).

6. **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.

7. **BONDS**

a. Each bidder shall submit one of the statutorily required forms of bid security as set forth in O.R.C. Section 153.54 on the form 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 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.

8. **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.

9. **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.

10. COMPLETION DATE

a. Completion Date. Each successful Bidder shall have its Work on the Project Complete as follows: substantially completed by October 15, 2016 and completed by November 30, 2016. 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.

11. 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.

12. PREVAILING WAGES

a. This Project is horizontal construction with an estimated cost of $ 8,691,000.00, 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.
13. 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.

14. 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.
15. 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.

16. PREFERENCE FOR PUBLIC IMPROVEMENT CONTRACTS (As Selected)

a. [X] 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.

17. 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 in48 CFR Pt. 25.003. 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. The City may request Bidder provide for its review audited financial statements, to the extent available, and if not available, reviewed 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 including the construction of 3100 feet of new roadway
including granite curb, granite edged planting beds, 66,320 square feet of brick sidewalk, parking areas with permeable pavers, 98 trees and 74,000 plantings, new street lighting and AEP duct bank.

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 Contact 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
JOHN SHIELDS PARKWAY - PHASE 2

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: Mandy K. Bishop, P.E., S.I., 614-410-4699 or mbishop@gpdgroup.com

<table>
<thead>
<tr>
<th>Company:</th>
<th>Contact Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email:</td>
<td>Phone:</td>
</tr>
</tbody>
</table>

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
JOHN SHIELDS PARKWAY - PHASE 2

______________________________ (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 Contract Documents 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.
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, JOHN SHIELDS PARKWAY - PHASE 2 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:
   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 ______________, 2016.

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:

<table>
<thead>
<tr>
<th>REF NO.</th>
<th>ITEM NO.</th>
<th>DESCRIPTION</th>
<th>QUANT.</th>
<th>UNIT</th>
<th>LABOR ($)</th>
<th>MATERIAL ($)</th>
<th>TOTAL ($)</th>
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<tbody>
<tr>
<td>1</td>
<td>201</td>
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<tr>
<td>7</td>
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</table>

John Shields Parkway, Phase 2

CITY OF DUBLIN

January 9, 2016

26- 1

15-015-CIP
**BID SCHEDULE**

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

<table>
<thead>
<tr>
<th>REF NO.</th>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>QUANT.</th>
<th>UNIT</th>
<th>LABOR ($)</th>
<th>MATERIAL ($)</th>
<th>TOTAL ($)</th>
<th>INFORMAL PRICE ($)</th>
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**EROSION CONTROL**

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<th>QUANT.</th>
<th>UNIT</th>
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**ROADWAY SUBTOTAL =**
BID SCHEDULE

CITY OF DUBLIN

John Shields Parkway, Phase 2

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BID SCHEDULE

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

**John Shields Parkway, Phase 2**

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| 78  | 901 | 24 INCH PIPE, 706.02, OR 901.02 ITEM 20 HDPP WITH TYPE 1 BEDDING, WITH CMSC 912 COMPACTED GRANULAR MATERIAL | 927 | FT | | | |
| 79  | 901 | 27 INCH PIPE, 706.02, OR 901.02 ITEM 20 HDPP WITH TYPE 1 BEDDING, WITH CMSC 912 COMPACTED GRANULAR MATERIAL | 193 | FT | | | |
| 80  | 901 | 30 INCH PIPE, 706.02, OR 901.02 ITEM 20 HDPP WITH TYPE 1 BEDDING, WITH CMSC 912 COMPACTED GRANULAR MATERIAL | 853 | FT | | | |
| 81  |     | SPEC DETENTION OUTLET CHAMBER | 16 | EACH | | | |

**DRAINAGE SUBTOTAL =**

| 82  | 204 | GEOTEXTILE FABRIC, TYPE D (FOR PERMEABLE PAVEMENT) | 9,570 | SQ YD | | | |
| 83  | 254 | PAVEMENT PLANING (T=1.25") (RESURFACING) | 2,127 | SQ YD | | | |
| 84  | 259 | PAVEMENT REPLACEMENT, TYPE I | 49 | SQ YD | | | |
| 85  | 301 | ASPHALT CONCRETE BASE | 1,208 | CU YD | | | |
| 86  | 301 | ASPHALT CONCRETE BASE (ASPHALT DRIVE) | 7 | CU YD | | | |
| 87  | 301 | ASPHALT CONCRETE BASE (SHARED USE PATH) | 166 | CU YD | | | |
| 88  | 304 | AGGREGATE BASE | 1,208 | CU YD | | | |
| 89  | 304 | AGGREGATE BASE (PARKING LOT REPLACEMENT) | 137 | CU YD | | | |
| 90  | 304 | AGGREGATE BASE (ASPHALT DRIVE) | 14 | CU YD | | | |
| 91  | 304 | AGGREGATE BASE (SHARED USE PATH) | 331 | CU YD | | | |
| 92  | 304 | AGGREGATE BASE (ASPHALT PATH REPLACEMENT) | 39 | CU YD | | | |
| 93  | 407 | NTSS-1 HM TRACKLESS TACK COAT | 581 | GAL | | | |
| 94  | 407 | NTSS-1 HM TRACKLESS TACK COAT (RESURFACING) | 171 | GAL | | | |
| 95  | 407 | NTSS-1 HM TRACKLESS TACK COAT (ASPHALT DRIVE) | 7 | GAL | | | |
| 96  | 407 | NTSS-1 HM TRACKLESS TACK COAT FOR INTERMEDIATE COURSE | 436 | GAL | | | |

January 9, 2016

26- 4

15-015-CIP
**BID SCHEDULE**

**John Shields Parkway, Phase 2**

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*January 9, 2016*

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**BID SCHEDULE**

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**John Shields Parkway, Phase 2**
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**WATER WORKS SUBTOTAL =**

**SANITARY**

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**TRAFFIC CONTROL SUBTOTAL =**

January 9, 2016
BID SCHEDULE

CITY OF DUBLIN

John Shields Parkway, Phase 2

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

<table>
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<tr>
<th>REF</th>
<th>NO.</th>
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</table>
BID SCHEDULE

John Shields Parkway, Phase 2

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

<table>
<thead>
<tr>
<th>REF</th>
<th>NO.</th>
<th>ITEM</th>
<th>DESCRIPTION</th>
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**LIGHTING SUBTOTAL =**
## BID SCHEDULE

**CITY OF DUBLIN**

**John Shields Parkway, Phase 2**

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

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<tr>
<th>NO.</th>
<th>ITEM</th>
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<td>185</td>
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**AEP DUCT BANK SUBTOTAL =**

**LANDSCAPING**

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<tr>
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<td>SPEC</td>
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**LANDSCAPING SUBTOTAL =**
BID SCHEDULE

REF (1) (2) (3) (4) (5) (6) (7) (8) (3) x (7) TOTAL
NO. ITEM DESCRIPTION QUANT. UNIT LABOR ($) MATERIAL ($) TOTAL ($) INFORMAL PRICE ($)

MAINTENANCE OF TRAFFIC

196 614* MAINTAINING TRAFFIC, AS PER PLAN 1 LUMP
197 614 LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION, AS PER PLAN 50 HOUR
198 616 DUST CONTROL, AS PER PLAN 1 LUMP

MAINTENANCE OF TRAFFIC SUBTOTAL =

MISCELLANEOUS

199 108.03** TYPE B - CRITICAL PATH METHOD (CPM) SCHEDULE 1 L. SUM
200 619 FIELD OFFICE, TYPE C 12 MONTH
201 623 CONSTRUCTION LAYOUT STAKES 1 L. SUM
202 624 MOBILIZATION 1 L. SUM
203 SPEC PROOF SURVEY 1 L. SUM

MISCELLANEOUS SUBTOTAL =

# DENOTES CONTINGENCY TO BE USED AS DIRECTED BY THE ENGINEER
* DENOTES ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS (2013 EDITION).
** DENOTES CITY OF DUBLIN GENERAL CONDITIONS SECTION 100.
ALL OTHER ITEMS REFERENCE CITY OF COLUMBUS CONSTRUCTION AND MATERIAL SPECIFICATIONS (2012 EDITION.)

GRAND TOTAL =

TOTAL BID FOR PROJECT:

SUBMITTED BY: (COMPANY)

January 9, 2016
26- 11
15-015-CIP
C. COMBINED BID/PERFORMANCE/PAYMENT BOND
CITY OF DUBLIN
JOHN SHIELDS PARKWAY - PHASE 2

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 _________________, 2016 to undertake the project known as the CITY OF DUBLIN, JOHN SHIELDS PARKWAY - PHASE 2.

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, JOHN SHIELDS PARKWAY - PHASE 2.

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 ________, 2016.

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: JOHN SHIELDS PARKWAY - PHASE 2

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. AFFIDAVIT OF AUTHORITY

CITY OF DUBLIN
JOHN SHIELDS PARKWAY - PHASE 2

(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 JOHN SHIELDS PARKWAY - PHASE 2 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:

_________________________________________
F.  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 ______________, 2016, 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)
                      ____________________      ____________________
                      ____________________      ____________________
                      ____________________      ____________________
                      ____________________      ____________________
                      ____________________      ____________________

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

Signed: ____________________________
Title: ____________________________

The foregoing instrument was acknowledged before me this ______________ (date)
by ____________________________ (name of person acknowledged).

Signature and Seal of person taking acknowledgement:


G. **W-9 FORM**

---

Form W-9
Request for Taxpayer Identification Number and Certification

<table>
<thead>
<tr>
<th>Part I: Taxpayer Identification Number (TIN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter your TIN in the appropriate box. The TIN provided must match the name given on the &quot;Name&quot; 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 How to Get a TIN on page 3.</td>
</tr>
<tr>
<td>Note: If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part II: Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under penalties of perjury, I certify that:</td>
</tr>
<tr>
<td>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</td>
</tr>
<tr>
<td>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 and dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and</td>
</tr>
<tr>
<td>3. I am a U.S. citizen or other U.S. person (defined below).</td>
</tr>
</tbody>
</table>

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.

---

**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, or
- 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.
H. LIST OF SUBCONTRACTORS

CITY OF DUBLIN
JOHN SHIELDS PARKWAY - PHASE 2

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.
I. CONTRACTOR QUALIFICATION STATEMENT

Contractor: __________________________________________________________

Date: ________________________________________________________________

Project: JOHN SHIELDS PARKWAY - PHASE 2

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 and request such documents 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: JOHN SHIELDS PARKWAY - PHASE 2

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 $ 7,387,350.00, 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 Provide the following information for each contract your organization has had during the last five (5) years, including current contracts, where the Contract Sum is fifty percent (50%) or more of the bid amount for this Project, including add alternates. If there are more than ten (10) of these contracts only provide information on the most recent ten (10) contracts, including current contracts.

<table>
<thead>
<tr>
<th>Project And Work</th>
<th>Contract Sum</th>
<th>Owner’s Representative &amp; Telephone Number</th>
<th>Engineer’s Or Architect’s Representative Name &amp; Telephone Number</th>
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</table>
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.

<table>
<thead>
<tr>
<th>Project And Work</th>
<th>Contract Sum</th>
<th>Owner's Representative &amp; Telephone Number</th>
<th>Engineer's Or Architect's Representative Name &amp; Telephone Number</th>
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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 - Upon submission of your bid you agree to make the following financial information available to the City if requested:

5.1.1 An audited financial statement if available and, if not, a reviewed financial statement, 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 ______________, 2016.

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 ______________, 2016.

__________________________

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).

<table>
<thead>
<tr>
<th>City Name</th>
<th>Project Type</th>
<th>Contract Amount</th>
<th>Completion Date</th>
<th>Contact Name and Number</th>
</tr>
</thead>
<tbody>
<tr>
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</table>
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).

<table>
<thead>
<tr>
<th>City Name</th>
<th>Project Type</th>
<th>Contract Amount</th>
<th>Percentage Complete</th>
<th>Contact Name and Number</th>
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Annual Construction Volume. Indicate the annual volume of work completed for the past three years:

Year ___ __________________________
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:
If requested by the City, provide audited financial statements for the past three (3) years, if available, and if not, then reviewed financial statements, including the information required in Section 5 – Financing, above.
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

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 JOHN SHIELDS PARKWAY - PHASE 2 (“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 30, 2016. 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 Addenda
- 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
- The current version of the CITY OF DUBLIN General Conditions Division 100
- Supplemental or Special General Conditions
- The current version of the CMS, Specification sections 200 through 1000
- Specifications
- Supplemental Specifications
- Notice of Award to Bidder
- Notice to Proceed
- Final Affidavit of Compliance with Prevailing Wages
- Plans and Drawings

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 substantially completed by October 15, 2016 and completed by November 30, 2016, 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 as required in 104.03.B of the General Conditions. 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.

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 completed by the Completion 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 complete by the Completion Date 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 as set forth in 108.07 of the General Conditions.
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 GENERAL.

13.1 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.

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

13.3 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.

13.4 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, Delaware and Union County, Ohio, and each party hereby expressly consents to the jurisdiction of such court.

13.5 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.

13.6 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.

13.7 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.
13.8 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.

13.9 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.

13.10 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.

13.11 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.

13.12 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.

13.13 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.

13.14 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.

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

13.16 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: ____________________________

CITY OF DUBLIN, CITY ATTORNEY
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 L. 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:


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, JOHN SHIELDS PARKWAY – PHASE 2 PROJECT.
D. SUPPLEMENTAL SPECIFICATIONS
1) **COORDINATION WITH ADJACENT PROJECTS AND COMMUNICATIONS:**

a) **Roles/Responsibilities:**

   i) The Program Management Consultant (PMC) Team is employed by the City of Dublin in order to manage the interfaces between the projects in association with the City of Dublin Capital Improvements Plan and the Bridge Street District Development. The PMC serves as the point of contact for management of the programs projects. Key interfaces between the projects will involve project shared work limits/overlaps, maintenance of traffic coordination, shared detour routes, private utility coordination, multiple project scope dependencies, multi-project communications, notice of service interruptions, construction timing, and scheduling. The PMC’s execution of these program components shall not replace the requirements of each respective contractor’s management staff. It is intended to enhance the ability of each project to achieve the individual project goals while minimizing the impact to one another and preserve the intended functions of the existing rights of way.

   ii) The awarded contractor and their subcontractors are required to incorporate the work of the private utility relocations into their CPM Schedule for the project. All payment for required CPM Scheduling Type B shall be included for payment under the referenced pay item found in Miscellaneous, John Shields Parkway, Phase 2. The City of Dublin Specification 108.03 is utilized in conjunction with this pay item. No additional payment is made for schedule coordination with the PMC or the private utility companies. The contractor is required to provide the CPM Schedule file in .xer format using Primavera version 6.0 or later to the PMC as requested and no less than 1 time per month. In addition to the requirements outlined in City of Dublin Specification 108.03, the contractor is required to hold group meetings with the private utility companies and subcontractors in order to develop the projects baseline schedule. The contractor is required to incorporate all work elements associated with John Shields Parkway Phase, 2, and the work associated with the private utility companies identified.

   iii) Cooperation between Contractors: This section is used in conjunction with the City of Dublin CMS specification section 105.07, Cooperation with Utilities and 105.08, Cooperation between contractors. The additional language below is not intended to replace the contents of these sections. In the event
the below contents conflict with the referenced specification sections above, the strictest requirements shall govern.

The contractor is responsible for providing adequate management staff in order to participate in the coordination between the multiple contractors. This may include attendance of interface focused coordination meetings, attendance at progress meetings, and field coordination meetings. Costs associated with the cooperation between contractors shall be included as a cost of managing the project and no separate pay item will be made.

The contractor will be responsible to provide as-built information as requested by the PMC staff or the City of Dublin for the purposes of adequately addressing the project interfaces that may exist. Similarly, field records may also be requested at any time in order to address coordination issues that are identified. The Contractor shall provide all information requested promptly. Costs associated with the cooperation between contractors shall be included as a cost of managing the project and no separate pay item will be made.

INSPECTION

All inspections shall be provided by the City and it will provide inspection staff associated with the installation of the facilities.

CPM SCHEDULING

The contractor and their subcontractors will be required to incorporate the work of the private utility relocations into their CPM Schedule for the project. Payment for all required CPM Scheduling Type B shall be included for payment under the referenced pay item found in Miscellaneous, John Shields Parkway, Phase 2. The City of Dublin Specification 108.03 will be utilized in conjunction with this pay item. No additional payment will be made for schedule coordination with the PMC or the private utility companies. The contractor will be required to provide the CPM Schedule file in .xer format using Primavera version 6.0 or later to the PMC as requested and no less than 1 time per month. In addition to the requirements outlined in City of Dublin Specification 108.03, the contractor will be required to hold group meetings with the private utility companies and subcontractors in order to develop the projects baseline schedule. The contractor is required to incorporate all work elements associated with John Shields Parkway Phase, 2 and the work associated with the private utility
companies identified. The Contractor shall provide a 6-week look ahead schedule within 15 days of the City issuing the notice to proceed for construction. A Full Baseline CPM Schedule shall be submitted within 45 days of the notice to proceed being issued, and updates shall be submitted no less than once a month.

b) Pay item for Type B – CPM Schedule has been included in the John Shields Parkway Phase, 2 plans. Payment for all CPM Scheduling associated with this contract shall be made under this pay item.

c) Construction Administration and Inspection Team

i) Jim Norden
   Construction Contract Administrator
   jimn@resourceinternational.com
   614.560.6413

ii) Dean Saunders
    City of Dublin – Inspector
    dsaunders@dublin.oh.us
    614.554.3744

d) PMC Contact List

i) Mandy K. Bishop, PE, SI
   Program Management Consultant
   mbishop@gpdgroup.com
   614.410.4672

ii) Daniel Weis, CCM
    Deputy Program Manager
    danielweis@hillintl.com
    614.286.9391
2) PROJECT INTERFACES

Each individual project will interface with other projects in a different manner depending on the timing of construction activities that are occurring and the Contractor’s sequence of construction. The Contractor will be required to communicate with the PMC team on a daily basis to ensure any deviations to the contractor’s work plans are being adequately communicated to all contractors and stakeholders with a vested interest in the projects.

a) Definitions: For the purposes of coordinating the multiple projects and interface types associated with this contract, the following interface types have been defined as follows:

i) Shared Project Limits: Shared project limits occur when the work of another contractor is occurring inside the work limits defined in the project documents. This requires the affected contractors to coordinate their work with the PMC and one another. Contractors will be required to provide accommodations for the shared work zone to one another based on the contractor’s CPM Schedule and the importance of the work occurring at a given time. The importance to the work will be assessed by the PMC based on the overall program importance to the specific scope being impacted and will consider the specific impacts associated with each project involved. The Contractors of this contract are required to allow access to work by another contractor within the project area where a Shared Project Limit Interface is to occur.

ii) Shared MOT Setups: Throughout the course of the project, when a scope of work by another contractor is to be performed adjacent to the work areas associated with this contract. The contractor is required to coordinate the maintenance of traffic setups with the adjacent project and may be required to revise existing maintenance of traffic schemes in order to facilitate the construction of both projects and maintain traffic as planned in the documents.

iii) Shared Detour Routes: Throughout the course of the project, the traffic detours that are required for the completion of this work will overlap with the detour routes of other contracts. The contractor is required to provide 3 days prior notice to any traffic maintenance installations in order to allow for adequate evaluation of the existing conditions associated with other detour
routes that are installed. The contractor may be required to revise the maintenance of traffic schemes in order to facilitate the construction of both projects and minimize the length of the project detour routes.

iv) Scope Dependency: A scope dependency interface is where the scope of this contract has a direct relationship with the scope of work being completed by another contractor. Scope dependency interfaces require the contractor to coordinate their work with the contractor performing the work of which the contract scope is dependent on. In situations where this contract’s work is dependent on another contractor’s work, the contractor will be required to maintain safe work conditions on the project and utilize the CPM schedule to identify the scope dependency interface. The contractor shall make every attempt to complete their work so as not to impede the progress or cause delays associated with the work of others.

b) Coordination Table of Key Interfaces
   i) The below table is a summary of the anticipated interfaces with adjacent projects. Detailed descriptions of each interface and the requirements of this contract are found in sections 3, 4, and 5 below.
<table>
<thead>
<tr>
<th>PROJECT OWNER</th>
<th>PROJECT NAME</th>
<th>PROJECT DESCRIPTION</th>
<th>INTERFACE TYPES</th>
</tr>
</thead>
<tbody>
<tr>
<td>CASTO</td>
<td>Tuller Flats Development</td>
<td>Multi-unit apartments North and South of John Shields Parkway from the Western Boundary of the project limits to Future Hobbs Landing</td>
<td>YES  NO  NO  YES</td>
</tr>
<tr>
<td>CRAWFOR D HOYING</td>
<td>Sanitary Sewer Installation</td>
<td>Site development project consisting of new Sanitary Sewers West of project site</td>
<td>YES  YES  NO  YES</td>
</tr>
<tr>
<td>CITY OF DUBLIN</td>
<td>John Shields Parkway Phase 2, Part 1 and 2</td>
<td>This project consists of Waterline and Sanitary Pipe within the same work limits as this contract. Work is anticipated to be completed prior to commencing work of this contract. As built documents will be held by the PMC and made available as necessary to perform the work.</td>
<td>YES  NO  NO  YES</td>
</tr>
<tr>
<td>INTERIM COTA PARK AND RIDE</td>
<td>CITY OF DUBLIN / COTA</td>
<td>The interim COTA Park and Ride site is located on the South east corner of the project and is a functional facility that will need to maintain operations during the construction efforts associated with this contract</td>
<td>YES  NO  NO  YES</td>
</tr>
</tbody>
</table>

### 3) CITY AND STATE PROJECT COORDINATION

- **a) Projects Requiring Coordination**
  - i) John Shields Parkway Phase 2, Parts 1 & 2
- **b) Critical Interfaces**
  - i) Coordination of Site access from the East of the site and material staging may be coordinated with the contractor but is not required. The Contractor shall not be able to access the site from this area if the PMC determines that adverse impacts to an adjacent contractor may occur.
ii) Abandonment of utilities will be occurring on the Byer’s Site and may require coordination with the work of this contract.

iii) As Built Details are to be provided including but not limited to final installation of all scope elements and Horizontal/Vertical Controls used during construction.

4) DEVELOPER PROJECT COORDINATION

a) Projects Requiring Coordination

i) Casto Tuller Flats Development

ii) Crawford Hoying Sanitary Sewer Installation

b) Critical Interfaces

(a) Sanitary Manhole Scope Dependencies/Tie In’s: The Casto Development will be tying up stream sanitary piping from sanitary structures installed by this contract. The scope dependency will require coordination with the submittals for these structures for the north facing inverts of structures 9 and 10 and coordination with the Casto Development Contractor.

(b) This project also requires shared project limits with the Casto/Tuller Flats Development. This will require the contractor to identify staging areas for materials and equipment during the preconstruction meeting as well as identify the contractor’s intention for accessing the site and material deliveries. Regular Communications with the adjacent Contractors will be facilitated by the PMC team to ensure communications and coordination is taken place as the work of both project progresses.

(c) The Waterline portion of this scope will be installed as planned to provide future connections by the developer. The 5 locations identified on the plan sheets will need to be identified and communicated with the PMC team and the as-built coordinates will need to be marked in the field and coordinated.

(d) The Crawford Hoying Sanitary Sewer Installation will be tying into the west elevation of structure 1 installed by this contract. Regular Communications with the adjacent Contractors will be facilitated by the PMC team to ensure communications and coordination is taken place as the work of both project progresses.
5) PRIVATE UTILITY PROJECT COORDINATION

Projects Requiring Coordination: The intent of this section is to inform the contractor of work occurring either within the project limits of, or adjacent to the construction limits outlined in the plan sets. 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.

5) SERVICE INTERRUPTIONS, OUTAGES, AND MAINTENANCE OF TRAFFIC

b) Objectives:
   i) Maintain a safe work zone for all construction personnel as well as pedestrian and vehicular traffic throughout the contract.

   ii) Minimize the length of time an outage/service interruption is to occur and the number of times an outage/service interruption is to occur.

   iii) All work associated with this contract and interfacing projects shall not impede traffic to less than a single lane in all directions at any time.

c) Requirements:
   i) Advance Notice and Communications:
      (1) Any scheduled interruption to public services associated with this contract requires a minimum 5-day notice provided to the PMC and the City in order to allow for proper consideration of adjacent projects.

      (2) Working Restrictions and hours of operation: Any planned work requiring a service interruption or Outage shall be performed at a time of day that is deemed by the City to be the least impactful to the affected parties. All outage/service interruptions require a minimum 5-day notice and written authorization from the PMC or Owner prior to execution.

      (3) Unscheduled interruptions shall be communicated immediately to the PMC and the City of Dublin so appropriate action can be taken. Should an incident occur during off hours, the contractor is responsible for initiating their emergency response plan and notifying the PMC and the City in addition to any emergency services that may be necessary to minimize the interruption.
ii) Traffic Maintenance is a critical component of the Bridge Street District Development and the execution of the scope of work in this contract. MOT shall be per the approved plans unless otherwise approved by the City Engineer.

(1) Every effort shall be made by the PMC and the project contractors to ensure safe accessible conditions are maintained everywhere possible. The contractor shall provide a site logistics plan and traffic maintenance plan prior to commencing work. The site logistics plan and maintenance of traffic plans are the responsibility of the contractor and can only be No maintenance of traffic setups can be installed on the project until this plan has been submitted and reviewed by the PMC and the City of Dublin. All maintenance of traffic item costs are to be included in the applicable pay item unit costs and no separate pay item will be provided for Maintenance of Traffic. All traffic maintenance shall be completed in accordance with the OMUTCD and applicable City, State, and Local Standards. Traffic must be maintained along Dale Drive at all times in both directions and all MOT must be removed in times when work is not being performed on the project (off hours) or the work zone is not being utilized by the contractor. The contractor shall include restoration in kind for any area damaged by pavement within the right of way as a result of the waterline and sanitary piping installations. This cost shall also be included in the applicable unit prices and no separate payment will be made for restoration work. All restoration work shall conform with city of Dublin standard documents and is subject to approval by the City. The means and methods of restoration in road right of way are at the contractors discretion so long as the installations conform to the standard documents.

(2) In the event another project has captured an area typically utilized for vehicular or pedestrian travel and is in proximity to the permitted work zone, the contractor shall coordinate their work with the existing maintenance of traffic setups to ensure a minimum of 1 lane in all directions is maintained at all times. The contractor(s) may be required to share work limits or maintenance of traffic setups with another project in order to perform the contract work.
Adjacent Property Access shall be maintained at all times. In the event the contract work requires impeding access to an adjacent property, every effort to minimize the disruption to the property access shall be maintained. When the contractors work impedes access to an adjacent property the contractor shall not vacate the area of work until temporary measures for maintaining access are implemented. No separate pay item will be made for temporary measures. All costs associated with installing temporary work to maintain safe access to adjacent properties shall be included in the applicable pay items for the items being installed.

7) PERMITS AND RESTRICTIONS
   a) Tree Clearing
      i) A United States Fish & Wildlife Service Coordination for Indiana Bat coordination letter has been processed and clearance received to cut trees in advance of March 31.

WORKING HOURS
All work associated with the project shall be constructed from 7 A.M. to 7 P.M., Monday through Saturday. If the contractor wishes to work on Sunday, a written request must be submitted to the contract administrator for the project, and City approval is required. Requests for Sunday work to be performed shall be made a minimum of 3 calendar days prior.

The Contractor may request modification of these working hours in writing with appropriate explanation and justification for review by the Program Management Consultant and approval by the City Engineer. Any alteration to the working hours above will be evaluated on a case-by-case basis, and must be made with the best interest of the City and local traffic conditions in mind.

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.

CONSTRUCTION NOISE
Any device 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. All construction activities are subjected to the City of Dublin Noise ordinances.
6) PROJECT COMPLETION

<table>
<thead>
<tr>
<th>ITEM</th>
<th>SCOPE</th>
<th>Milestone Date Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Substantial Completion</td>
<td>Reference “Section 6, Work schedule, Substantial Completion and Final Completion”</td>
<td>Finish on October 15, 2016</td>
</tr>
<tr>
<td>Project Final Completion</td>
<td>Reference Section 6, Final Completion</td>
<td>Finish on November 30, 2016</td>
</tr>
<tr>
<td>Interim Cota Site Demolition activity</td>
<td>All work required on the COTA Interim park and ride site shall not be performed until the site is vacated. This is inclusive of demolition activities and storm pipe installations. This site is anticipated to be vacated by September 15, 2016. As such no CPM schedule submission can schedule work in this area prior to this date without authorization from the PMC.</td>
<td>Start on September 16, 2016</td>
</tr>
</tbody>
</table>

i) Extensions of time will be for calendar days and calculated in accordance with The City of Dublin General Conditions 108.06 except as follows: no extensions of time will be granted for delays in material deliveries (unless such delays are industry wide), labor strikes (unless such strikes are area wide) and inclement weather except in cases of area flooding, blizzard conditions, damaging wind or local tornado damage.

WORK SCHEDULE AND FINAL COMPLETION.

ii) Substantial Completion for this project is defined as the full functional use of the roadway including all regulatory inspections and testing have been completed. The project final completion date shall be completed by **October 15, 2016**

iii) Final Completion for this project is defined as the completion of all plantings, demolition, restoration, and all punchlist activities. All requirements for final completion inclusive of the requirements defined in substantial completion shall be completed by **November 30, 2016**.
ITEM 201 - Clearing and Grubbing

ii) Any tree trimming, pruning, and protection of trees on the site necessary to perform the contract scope shall be paid for and included under item 201 Clearing and Grubbing. Where work is required inside of existing tree drip lines, the contractor shall use a good faith effort to minimize any damage to the existing trees in order to preserve the trees that remain on the site. All trees not scheduled for removal in the documents are required to be protected and preserved. Stockpiling of materials within the dripline of trees will not be permitted.

7) PERMITS AND RESTRICTIONS

TREE CLEARING
A United States Fish & Wildlife Service Coordination for Indiana Bat coordination letter has been processed and clearance received to cut trees in advance of March 31, 2016.

NOTICE OF INTENT
A Notice of Intent (NOI) has been filed with the Ohio Environmental Protection Agency (OEPA). The NOI was filed on December 28, 2015 and the NOI approval is anticipated to be received prior to issuing the notice to proceed.

WATERLINE PERMIT TO INSTALL
A waterline Permit to Install (PTI) is required for the contract. The permit is anticipated to be available on March 15, 2016.

SANITARY PERMIT TO INSTALL
A sanitary Permit to Install (PTI) is not required for the project.

EROSION AND SEDIMENT CONTROL

Ditch erosion protection pay items are included in each bid tabulation for the respective plan sets. The contractor is required to maintain appropriate Storm water pollution prevention within the site limits at all times. No additional payment shall be made should the contractor elect to utilize different means and methods for the temporary erosion and sediment control measures in order to maintain compliance with the City of Dublin and EPA requirements.

Cooperation with the Casto Tuller Flats Development will be necessary as the scope of work associated with this contract and the Development effort are anticipated to occur simultaneously. Maintenance of the erosion and sediment
and erosion control within the work limits is to be provide using as directed quantities identified in the Bid Tab with an *.

The Contractor will be responsible to sweep the adjacent streets and minimize all track out from the work limits that occurs associated with the project. This will need to be responded to immediately as identified by the PMC Team. All project costs associated with addressing track out and erosion and sediment control other than described above shall be the responsibility of the contractor and be included on applicable line items identified in the scope.

**FESTIVALS AND CITY EVENTS**

a. Periodically the City will have community events and festivals that will require consideration for the construction activities associated with this contract. Events not listed may come up periodically that will require additional coordination with the work of this contract and all dates identified are subjected to change. The maintenance of traffic setups accommodate many of the events occurring in the community without further consideration. At a minimum, for the following event dates, the contractor shall ensure the work limits have been cleaned from debris and all construction materials are stored safely and securely. The streets shall be swept 1 day prior and as directed by the project inspection staff throughout the project to maintain the safest construction area possible. Additional work requests may be made by the City for consideration of improved pedestrian walk paths through the construction zone, maintenance of traffic temporary modifications, additional safety barricades, utilization of additional law enforcement officers.

<table>
<thead>
<tr>
<th>SS Table 4.0 Events Schedule</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Events Schedule</strong></td>
<td></td>
</tr>
<tr>
<td>St. Patrick’s Day Parade</td>
<td>March 12, 2016</td>
</tr>
<tr>
<td>Memorial Day Parade</td>
<td>May 30, 2016</td>
</tr>
<tr>
<td>Memorial Tournament</td>
<td>May 30 – June 5, 2016</td>
</tr>
<tr>
<td>Independence Day Parade</td>
<td>July 4(^{th}), 2016</td>
</tr>
<tr>
<td>Dublin Irish Festival</td>
<td>August 5-7, 2016</td>
</tr>
<tr>
<td>Spooktacular</td>
<td>October 15(^{th}) 2016</td>
</tr>
<tr>
<td>Beggars Night</td>
<td>October 31(^{st}) 2016</td>
</tr>
<tr>
<td>Veterans Day Ceremony</td>
<td>November 11, 2016</td>
</tr>
</tbody>
</table>

**GEOTECHNICAL INFORMATION**

January 8, 2016 65-13 15-015 CIP
The subsurface exploration report for this project is included in the bid documents. This is intended to provide geotechnical data for bidding purposes. The conditions represented are not a guarantee of conditions to be encountered.

**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.

The City will issue a permit to proceed with this work. Please contact the Project Manager, Mandy K. Bishop, PE, SI at 614-410-4672.

**ROCK EXCAVATION**

Rock may be encountered throughout this project. Payment shall be made under applicable pay items where rock would be encountered when excavation is required to perform the work. No additional payment shall be made for rock excavation.

All excavation shall be considered as unclassified, including rock.

No alternates or deviations shall be permitted from those construction materials shown on the plans. Bidders shall not submit alternates with their bid unless an alternate is explicitly requested.

The City is currently constructing a sanitary sewer and waterline in the roadway alignment. All station references are related to the plans for **Proposed Public Sanitary Sewer for John Shields Parkway, Phase 2 - Part 1**. Based on inspection reports, rock has been encountered at the following locations and elevations:

<table>
<thead>
<tr>
<th>Station</th>
<th>Elevation of Rock Encountered</th>
</tr>
</thead>
<tbody>
<tr>
<td>0+75.90 (MH# 1)</td>
<td>835.00 +/-</td>
</tr>
<tr>
<td>0+85</td>
<td>841.00 +/-</td>
</tr>
<tr>
<td>1+74.09 (MH#2)</td>
<td>842.00 +/-</td>
</tr>
<tr>
<td>1+75</td>
<td>840.00 +/-</td>
</tr>
<tr>
<td>3+00</td>
<td>841.00 +/-</td>
</tr>
</tbody>
</table>
These are snapshots of conditions encountered in the field. Rock may be encountered at other locations and depths. Bidding contractors shall provide for all rock excavation associated with the infrastructure installations using their best judgement and include bid costs in the applicable line items. No separate pay item will be included and no additional compensation will be paid for rock encountered on 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.

DEWATERING

The cost of any dewatering operations required for the construction of the storm sewers, water mains, culverts, and 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.

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.

Benchmarks placed by this contract are to be made available for reference to the adjacent contractors working on the site.

COLUMBUS INDUSTRIAL – 4333 TULLER ROAD
The right-of-way on this property has not been obtained. Work associated with this parcel is not available shall be scheduled prior to May 15, 2016. The Contractor will be provided written documentation of its availability. This work is approximately between stations 669+50 and 676+50.
SECTION 02795
PERVIOUS CONCRETE PAVEMENT WITH DETENTION

PART 1 GENERAL

1.01 Scope of Work:
A. The Work described by this guide addresses the labor, materials and equipment necessary for construction of pervious concrete pavement in conformance with the plans, specifications and other contract documents, for Item Special - Permeable Paver Roadway.

1.02 References:
A. American Concrete Institute (ACI)
   1. ACI 211.3R “Guide for Selecting Proportions for No- Slump Concrete”
   2. ACI 305 “Hot Weather Concreting”
   3. ACI 306 “Cold Weather Concreting”
   4. ACI 522 “Report on Pervious Concrete”
   5. ACI 522.1-13 “Specification for Pervious Concrete Pavement”
   6. ACI Flatwork Finisher Certification Program
   7. ACI Field Technician Certification Program
B. American Society for Testing and Materials (ASTM)
   1. ASTM C 29 “Test for Bulk Density (Unit Weight) and Voids in Aggregate”
   2. ASTM C 33 “Specification for Concrete Aggregates”
   3. ASTM C 42 “Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete”
   4. ASTM C 94 “Specification for Ready-Mixed Concrete”
   5. ASTM C 117 “Test Method for Material Finer than 75-μm (No. 200) Sieve in Mineral Aggregates by Washing”
   6. ASTM C 150 “Specification for Portland Cement”
   7. ASTM C 172 “Practice for Sampling Freshly Mixed Concrete”
   8. ASTM C 260 “Specification for Air-Entraining Admixtures for Concrete”
   9. ASTM C 494 “Specification for Chemical Admixtures for Concrete”
  10. ASTM C 595 “Specification for Blended Hydraulic Cements”
   11. ASTM C 618 “Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete”
   12. ASTM C 979 “Specification for Pigments for Integrally Colored Concrete”
   13. ASTM C 989 “Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars”
   14. ASTM C 1077 “Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.”
   15. ASTM C 1116 “Specification for Fiber-Reinforced Concrete”
16. ASTM C 1542 "Standard Test Method for Measuring Length of Concrete Cores"
17. ASTM C 1602 “Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete”
18. ASTM C 1688 “Test Method for Density and Void Content of Freshly Mixed Pervious Concrete”
19. ASTM C 1701 “Test Method for Infiltration Rate of In Place Pervious Concrete”
20. ASTM C 1754 "Standard Test Method for Density and Void Content of Hardened Pervious Concrete"
21. ASTM D 448 “Classification for Sizes of Aggregate for Road and Bridge Construction”
22. ASTM D 1557 “Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³)”
23. ASTM D 1751 “Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)”
24. ASTM D 1752 “Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction”
25. ASTM D 2434 “Test Method for Permeability of Granular Soils (Constant Head)”
26. ASTM D 3385 “Test Method for Infiltration Rate of Soils in Field Using Double-Ring Infiltrometer”
27. ASTM D 5084 “Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter (Falling Head, Method C)”
28. ASTM D 5093 “Test Method for Field Measurement of Infiltration Rate Using a Double-Ring Infiltrometer with a Sealed-Inner Ring”
30. ASTM D7357 “Specification for Cellulose Fibers for Fiber-Reinforced Concrete”

C. National Ready Mixed Concrete Association (NRMCA)
1. NRMCA Pervious Concrete Contractor Certification

D. State of Ohio Department of Transportation (ODOT) Construction and Material Specifications
1. Item 703.02 Aggregate for Portland Cement Concrete
1.03 Quality Assurance:

A. Qualifications of testing laboratories - The testing laboratory shall have its laboratory equipment and procedures inspected at intervals not to exceed 2 years by a qualified national authority as evidence of its competence to perform the required tests and material designs. Acceptable national authority will include the AASHTO Materials Reference Laboratory (AMRL) or the Cement and Concrete Reference Laboratory (CCRL) as appropriate. In addition, testing machines and equipment must be calibrated annually or more frequently by impartial means using devices of accuracy traceable to the National Bureau of Standards.

Field tests of pervious concrete shall be performed by individuals certified as both an NRMCA Certified Pervious Concrete Technician (or equivalent) and as an ACI Concrete Field Testing Technician – Grade I. In fields other than those covered by the referenced ASTM standards, the testing laboratory shall accept only those assignments which it is able to perform competently by use of its own personnel and equipment. Any work to be subcontracted must be to laboratories meeting the same criteria.

The testing laboratory shall have demonstrated its competence in the applicable fields for a period of not less than 3 years.

The inspection and testing services of the testing laboratory shall be under the direction of a full-time employee registered as a professional engineer in the State of Ohio. The Engineer shall have a minimum of 5 years of professional engineering experience in inspection and testing of concrete construction.

1.04 Special Equipment: Pervious concrete requires specific equipment for compaction and jointing. The pervious concrete pavement shall be jointed and compacted using the methods listed, or alternatives as demonstrated and approved by the Architect/Engineer. For example, large installations may warrant mechanized placement techniques.

A. Rolling compaction shall be achieved using a steel pipe roller or a motorized or hydraulically actuated rotating tube screed that spans the width of the section placed and exerts a vertical pressure of 10 psi (68.95 kPa) to 30 psi (206.85 kPa) on the concrete.

B. Plate compaction (for small areas) shall be achieved using a standard soil plate compactor that has a base area of at least two square feet and exerts a minimum of 10 psi (69 kPa) vertical pressure on the pavement surface (through a temporary cover of ¾ in. (19 mm) plywood).

C. When contraction joints are created in pervious pavements, they may be constructed by rolling, forming or sawing. Rolled joints shall be formed using...
a “pizza cutter roller” to which a beveled fin with a minimum depth of \( \frac{3}{4} \) the thickness of the slab has been welded around the circumference of a steel roller.

1.05 Submittals: Administrative Requirements, for submittal procedures.
Prior to commencement of the work the contractor shall submit the following:

A. Concrete materials:
   1. Proposed pervious concrete mixture proportions including all material weights, volumes, design density (unit weight), water-cementitious ratio, and design void content.
   2. Aggregate type, source, grading, dry-rodded unit weight, percent passing number 4 sieve and void content.
   3. Cement, supplementary cementitious materials, synthetic (polypropylene) or cellulose fibers and chemical admixture manufacturer certifications.
   4. Density (unit weight) and void content of proposed freshly mixed pervious concrete mixture per ASTM C 1688. (The fresh density and void content calculated from this procedure will differ from in-place density and void content and is only used to check mixture proportion consistency).

B. Aggregate base materials: Washed aggregate type, source, grading and void content (percent porosity).

C. Qualifications: Evidence of qualifications listed under Quality Assurance in Section 1.03 of this guide.

D. Project details: Specific plans including a jointing plan, details, schedule, construction procedures and quality control plan.

E. Subcontractors: List all materials suppliers, subcontractors and testing laboratories to be used on the project.

1.06 Test Panels: Prior to construction, a test panel shall be placed with the crew meeting the requirement of NRMCA certified personnel per section 1.03 C. and approved by the Architect/Engineer. The Architect/Engineer may waive this requirement based on Contractor qualifications. At Contractor’s option, test panels may be constructed on approved sections of project aggregate detention (or groundwater recharge) layer.

A. Test panel(s) shall be constructed in accordance with the plans and specifications. Regardless of qualification, the contractor is to place one test panel, consisting of approximately 740 ft\(^2\) (82.5 SY), at the required project thickness, consolidated, jointed and cured using materials, equipment, and personnel proposed for the project, and on the same aggregate base proposed, to demonstrate to the Architect/Engineer’s satisfaction that in-place unit weights and infiltration can be achieved and a satisfactory pavement can be installed at the site location. If strength is used in the pavement design, cores from the test panels may be used to confirm that
consolidation and infiltration, as well as strength, is consistent with design objectives for the top and bottom of the slab.

B. Test panel(s) cost and removal, if necessary, shall be included as a line item in the contract proposal and contract. Test panels may be placed at any of the specified pervious concrete pavement locations on the project or at another test site.

C. Quality: Test panels shall have acceptable surface finish, joint details, thickness, porosity and curing procedures and shall comply with the testing and acceptance standards listed in the Quality Control section of this specification. Test density and void content of fresh concrete for the test panels in accordance with ASTM C 1688. Obtain hardened concrete cores from the test panels in accordance with ASTM C 42 upon completion of the 7-day cure: test core thickness in accordance with ASTM C 1542, and density (unit weight) and void content in accordance with ASTM C 1754.

D. Satisfactory performance of the test panels shall be determined by:
   1. Fresh concrete results
      a. Density (unit weight) plus or minus 5 lb/ft³ (80 kg/m³) of the submitted fresh density (unit weight).
   2. Hardened concrete results (average of minimum 3 cores)
      a. Compacted thickness no less than ¼ in. (6.35 mm) less than specified thickness \( T_{\text{compacted}} \geq T_{\text{specified}} - \frac{1}{4} \text{ in.} \); \( T_{\text{compacted}} \geq T_{\text{specified}} - 6.35 \text{ mm} \)
      b. Hardened density (unit weight) plus or minus 5 % of the design density (unit weight).
   3. Infiltration Rate of In-Place Pervious Concrete
      a. Minimum of 1000 inches per hour

E. If test panels are found to be unsatisfactory, they shall be removed at the Contractor’s expense and disposed of in an approved landfill or recycling facility. If test panels are found to be satisfactory, they may be left in-place and included in the completed work, at no additional cost to the project.

1.07 Project Conditions

A. Weather Limitations
   1. The Contractor shall not place pervious concrete for pavement when the ambient temperature is predicted by the National Weather Service Point Forecast for the jobsite to be 40 °F (4 °C) or lower during the seven days
following placement, unless otherwise permitted in writing by the Architect/Engineer.

2. The contractor shall not place pervious concrete for pavement when the ambient temperature is predicted by the National Weather Service Point Forecast for the jobsite to rise above 90 °F (32 °C) during the seven days following placement, unless otherwise permitted in writing by the Architect/Engineer.

3. Pervious concrete pavement shall not be placed on frozen coarse aggregate or subgrade.

4. Evaporation control measures shall be applied from the time of discharge until the pavement is covered with polyethylene sheeting to prevent moisture loss during placement operations (refer to section 2.09).

1.08 Pre-paving Conference

A pre-paving conference with the Architect/Engineer shall be held within one week prior to beginning placing the pervious concrete. The contractor shall have the pervious concrete supplier, the foreman and the entire concrete crew that will form and place the concrete in attendance at this meeting. A qualified representative from ORMCA/Ohio Concrete shall also be in attendance for assistance.

As a guide for the meeting, the document Checklist for the Concrete Pre-Construction Conference (available from the National Ready Mixed Concrete Association or the American Society of Concrete Contractors) shall be used to review all requirements of the contract during the meeting. Meeting emphasis shall be on how paving with pervious concrete differs from paving with conventional concrete.
PART 2  PRODUCTS

2.01  Curing materials
A. Polyethylene sheeting - The primary method of curing pervious concrete shall be the placement of a waterproof covering, consisting of a minimum of 4 mil thick clear polyethylene sheeting.
B. Other moisture loss control - For prevention of moisture loss prior to the primary method of curing:
   1. Monomolecular film (evaporation retardant), SikaFilm by Sika Corporation, EucoBar by Euclid Chemical Co., Confilm by BASF (Master Builders Technologies) or Catexol Cimfilm by Axim Concrete Technologies, or approved equal, applied per manufacturer’s instructions.
   2. Soybean oil sealer. Note: Soybean oil is gaining recommended for added protection. It reportedly reduces surface color markings from plastic sheeting, may enhance strength and does not reduce porosity.
   3. Fogging equipment designed to raise the relative humidity of the ambient air over the slab and reduce evaporation to include fog nozzles that atomize water using air pressure to create a fog blanket over the slab. Note: garden hose nozzles are not sufficient to create fog and may wash paste off the aggregate.

2.02  Cement:  Portland cement Type I, Type II or V conforming to ASTM C 150 or Portland cement Type IP or IS conforming to ASTM C 595.

2.03  Supplementary Cementitious Materials:
A. Fly ash conforming to ASTM C 618
B. Ground Granulated Blast-Furnace Slag conforming to ASTM C 989

2.12  Admixtures:
A. Air entraining admixtures with ASTM C 260.
B. Chemical admixtures shall comply with ASTM C 494.
   1. Mid-range water reducing admixtures (water reducers) Type A or High Range water reducing admixtures Type F or G are permitted due to low water-cementitious ratios specified for pervious concrete.
   2. Extended set control admixtures (hydration stabilizers) meeting requirements of ASTM C 494 Type B Retarding or Type D Water Reducing/Retarding admixtures are recommended to increase concrete placement time or to improve finishing operations. Note: this stabilizer suspends cement hydration by forming a protective barrier around the
cementitious particles, which delays the particles initial set. If this mix heats up in the truck a standard retarder will not prevent premature hydration where the stabilizer will.

3. Viscosity modifying admixtures (VMA's) are permitted to facilitate discharge of the concrete from the truck and placement in the forms.

2.13 Fiber Reinforcement:

A. Synthetic fiber shall be in accordance to ASTM C 1116 Type III made of polypropylene.
B. Cellulose fibers shall be in accordance to ASTM C 1116 Type IV made of natural fibers conforming to ASTM D 7357.
C. Macrosynthetic fibers are gaining acceptance and use in certain areas.

2.14 Aggregates for pervious concrete:

A. Coarse aggregate shall meet the size and grading requirements as defined in ASTM D 448 (or Standard Sizes of Coarse Aggregate, Table 4, AASHTO Specifications, Part I, 13th Ed., 1982 or later) and shall comply with ASTM C 33 and ODOT Item 703.02. Use No.67, No. 7, No. 8, No. 89 or No. 9 unless an alternate size is approved for use based on meeting the project requirements. Data for proposed alternate material shall be submitted for approval per Section 1.05A of this guide. Fine aggregate complying with ASTM C 33, if used, shall not exceed 3 ft³ per yd³ (0.11 m³ per 1.0 m³). Larger aggregate sizes may increase porosity but can decrease workability. No. 8 (3/8 in. or 9.5 mm) size coarse aggregate is the common size used in pervious concrete pavements. Well graded aggregates shall be avoided as they may reduce porosity, and may not provide adequate void content. Note: Suggested maximum limit when using a number 8 coarse aggregate pervious mix is 15% passing No. 4 sieve (4.75 mm)

a. For 5 to 10% passing No. 4 sieve (4.75 mm), add 125 lb/yd³ (74 kg/m³) fine aggregate
b. For 0 to 5% passing No. 4 sieve (4.75 mm), add 200 lb/yd³ (119 kg/m³) fine aggregate

2.15 Water: Water shall be potable and comply with ASTM C 1602.

2.16 Mixture Proportions: The Contractor shall furnish a proposed mix design with all proportions of materials prior to commencement of work. The data shall include densities (unit weights) and void contents determined in accordance with ASTM C
1688 for fresh mixed properties and with ASTM C 1754 for hardened concrete properties of the same proposed mixture. The composition of the proposed concrete mixture shall be submitted to the Architect/Engineer for review and/or approval and shall comply with the following provisions unless an alternative composition is demonstrated to comply with the project requirements. Mixture performance will be affected by properties of the particular materials used. Trial mixes must be tested to establish proper proportions and determine expected behavior. Concrete producers may have mixture proportions for pervious concrete optimized for performance with local materials by use of available software programs. Appendix 6 of ACI 211.3R provides a guide for pervious concrete mixture proportioning. General mixture proportions are as follows:

A. Aggregate/cementitious ratio: range of 4:1 to 5:1.
B. Concrete mixture unit weight: range of 115 lb/ft³ to 135 lb/ft³ (1840 kg/m³ to 2080 kg/m³)
C. Concrete mixture void content: range of 13% to 30%.
D. Cementitious content: range of 450 lbs/yd³ to 600 lb/yd³ (267 kg/m³ to 356 kg/m³), total cementitious content.
E. Supplementary cementitious content: Fly ash: 25% maximum; Slag: 25% maximum, or Combined supplementary cementitious content: 35% maximum.
F. Water - cementitious ratio: range from 0.28 to 0.35.
G. Fiber reinforcement is recommended for added performance:
   a. Synthetic polypropylene, target 0.1% volume of mixture or range 1 lb/yd³ to 1.5 lb/yd³ (0.593 kg/m³ to 0.890 kg/m³)
   b. Cellulose, range 1.5 lb/yd³ to 3 lb/yd³ (0.890 kg/m³ to 1.78 kg/m³)
   c. Macrosythetic fibers, range per manufacturer's recommendation.
H. Aggregate content: The bulk volume of aggregate per cubic yard (cubic meter) shall be 27 ft³ (1 m³) when calculated from the dry rodded density (unit weight) determined in accordance with ASTM C29 jigging or rodding procedure.
I. Admixtures: Admixtures shall be used in accordance with the manufacturer’s instructions and recommendations. Dosage of air-entraining admixture shall be a minimum of 2 oz /cwt (130 mL/100kg) of cementitious material.
J. Mix Water: The quantity of mixing water shall be established to produce a pervious concrete mixture of the desirable workability to facilitate placing, compaction and finishing to the desired surface characteristics. Note: Mix water shall be such that the cement paste displays a wet metallic sheen without causing the paste to flow from the aggregate. (A cement paste with a dull-dry appearance has insufficient mix water for hydration.) Insufficient mix water results in inconsistency in the mix and poor bond strength. Jobsite addition of mix water is permitted to adjust for dry mixtures in concrete transit mixers. Note: High water content results in the paste sealing the void system primarily at the bottom and poor surface bond.
PART 3 EXECUTION

The Architect/Engineer shall be notified at least 24 hours prior to pervious concrete paving work. Careful consideration for the construction sequence is prudent and, to the greatest extent possible, the surrounding earthwork/landscape operations should be completed and stabilized prior to stormwater storage and pervious concrete placements.

3.01 Installation

A. Pervious Concrete Pavement

1. Pavement Thickness:

Pavement thickness for all applications (excluding heavy traffic loads) shall be single-course placement 8 in. (203 mm) thick unless otherwise specified in the plans. Pavements for vehicles heavier than single axle service/delivery trucks will require special design thicknesses which may require two-course construction.

Note: Thicknesses greater than 6 in. (152 mm) have been successfully installed with single-course construction, and design has been verified with cores. Cores from a test slab may be used to confirm that consolidation and infiltration in the bottom of the slab is consistent with design objectives. Cores may also be used to determine relative compressive and flexural strengths.

2. Formwork:

a. Form materials are permitted to be of wood or steel and shall be the full depth of the pavement. Caution: protect impermeable membranes from puncture or tear when placing forms and form pins. Forms shall be of sufficient strength and stability to support mechanical equipment
without deformation of plan profiles following spreading, strike-off and compaction operations. Forms may have a removable spacer of \( \frac{1}{2} \) in. to \( \frac{3}{4} \) in. (13 mm to 19 mm) thickness placed above the depth of pavement. The spacers shall be removed following placement and vibratory strike-off to allow roller compaction. (Removable spacers may not be necessary if other means of strike-off and consolidation are used, such as a hydraulically actuated pipe roller screed.)

b. The Contractor will be restricted to pavement placement widths of a maximum of 20 ft (6.1 m) [Note: Parking stall area is typically 19 feet (5.8 m) wide.], unless the Contractor can demonstrate competence to provide pavement placement widths greater than the maximum specified to the satisfaction of the Architect/Engineer. Large scale mechanized placement of pervious concrete with slipform concrete paving machines, laser screeds or asphalt paving machines may preclude use of fixed forms.

3. Mixing and Hauling:
   a. Production: Pervious concrete shall be manufactured and delivered in accordance with ASTM C 94.
   b. Mixing: Mixtures shall be produced in central mixers or in transit (truck) mixers. When concrete is delivered in agitating or non-agitating units, the concrete shall be mixed in the central mixer for a minimum of 1.0 minute or until a homogenous mix is achieved. Concrete mixed in transit mixers shall be mixed at the speed designated as mixing speed by the manufacturer for 75 – 100 revolutions.
   c. Transportation: The pervious concrete mixture may be transported or mixed on site and discharge of individual loads shall be completed within one (1) hour of the introduction of mix water to the cement. Delivery times may be extended to 90 minutes when a hydration stabilizer is used.
   d. Discharge: Each truckload shall be visually inspected for consistency of concrete mixture. Water addition shall be permitted at the point of discharge to obtain the required mix consistency, provided a measurable quantity is discharged, and provided no more than half of the batch amount has been discharged. A minimum of 30 revolutions at the manufacturer's designated mixing speed shall be counted following the addition of any water to the mix, prior to further discharge. Discharge shall be a continuous operation and shall be completed as quickly as possible. Concrete shall be deposited as close to its final position as practical and such that discharged concrete is incorporated into previously placed plastic concrete. If consolidation occurs during concrete discharge, placement shall be halted and wet concrete removed (this may happen towards the end of some loads).

4. Placing and Finishing:
a. Prior to placing concrete, the surface of the aggregate detention layer (or recharge bed) shall be soaked and in a wet condition at time of placement. Failure to moisten the aggregate surface will result in a reduction in strength of the pavement.

b. Concrete may be deposited into the forms by mixer truck chute, conveyor or buggy.

c. Unless otherwise permitted, the Contractor shall utilize a mechanical vibratory screed to strike off the concrete ½ in. to ¾ in. (13 mm to 19 mm) above final height, utilizing the form spacers described in Formwork. An alternative method to strike off and compact the concrete is to use a hydraulically actuated pipe roller screed as described under 1.04 Special Equipment. If approved by the Architect/Engineer in writing, the Contractor may place the pervious concrete with either slip form or vibratory form riding equipment with a following compactive unit that will provide a minimum of 10 psi (69 kPa) vertical force to the concrete. Similarly, strike off by hand straightedge may be permitted for sidewalks and other small areas followed by compaction.

d. Care must be taken to prevent closing the void structure of pervious concrete. After mechanical or other approved strike-off and compaction operation, no other finishing operation will be allowed. Internal vibration shall not be permitted. If vibration, internal or surface applied, is used, it shall be shut off immediately when forward progress is halted for any reason.

e. Placed concrete shall not be disturbed while in the plastic state. Low spots after the screeding operation shall be over-filled for surface repair and either tamped to desired elevation with hand tampers or passing the screed a second time to correct the elevation.

f. Following strike-off, remove spacers and compact the concrete to the form level, utilizing a steel roller, a plate compactor on plywood or other method approved by the Architect/Engineer. Longitudinal rolling shall be followed immediately by cross rolling and joint rolling (if specified). Care shall be taken during compaction that sufficient compactive force is achieved without excessively working the concrete surface that might result in sealing off the surface porosity. Rollers may require cleaning and treatment to prevent aggregate pick-up during rolling operations.

g. Hand tampers and an edging tool with ¼ in. (6 mm) radius shall be used to compact the concrete along the slab edges immediately adjacent to the forms. After compaction, inspection and surface repair, no further finishing shall be performed on the concrete. Surface curing shall begin immediately.
h. The pervious concrete pavement shall be compacted to the required cross-section and shall not deviate more than +/- 3/8 in. in 10 ft (+/- 9 mm in 3 m) from profile grade.

5. Jointing

a. Joints in pervious pavements can be precluded at the option of the owner, who may, instead, choose to accept or prefer the appearance of random cracking.

b. Although longer joint spacings may control cracking, for conservative design, contraction (control) joints shall be installed at regular intervals not to exceed 20 ft (6.1 m), and slab length shall not exceed 1.25 times the width of the slab. Transverse contraction joints shall be installed at 1/4 the depth of the thickness of the pavement. These joints can be installed in the plastic concrete or saw cut after the concrete has hardened; in either case, careful attention is necessary to prevent raveling.

c. Jointing plastic concrete: Joints installed in the plastic concrete may be constructed utilizing a small rolling groover as described in the Special Equipment section of this guide specification. When this option is used it shall be performed immediately after roller compaction with one single pass and prior to curing. Note: Improper use of the rolling groover may cause “de-consolidation” of material within a 2-in. band along either side of the groove joint, and result in raveling under traffic. Rollers may require cleaning and treatment to prevent aggregate pick-up during rolling operations.

d. Jointing hardened concrete: Saw-cuts shall be made as soon as the pavement has hardened sufficiently to prevent raveling and uncontrolled cracking. [Note: jointing of hardened concrete has successfully occurred after the seven day minimum curing period with minimal to no uncontrolled cracks.] Early entry sawing occurs later with pervious concrete than with conventional concrete. For either method, the curing cover shall be temporarily removed and the surface kept misted to prevent moisture loss during sawing. Sawdust or slurry shall be promptly removed to protect the pervious concrete pores. After sawing, the curing cover shall be securely replaced for the remainder of the curing cycle.

e. Transverse construction joints: Transverse construction joints shall be installed whenever placing is suspended for 30 minutes or whenever concrete is no longer workable.

f. Isolation joints: Isolation joints shall be used when abutting fixed vertical structures such as light pole bases, building foundations, etc.

g. Edging, using a tool with 1/4 in. (6 mm) radius, and additional compaction with hand tamping tools shall be performed along all form edges.
lines and along all isolation joints and construction joints to reduce potential for raveling under traffic.

6. Curing:
   a. Curing procedures shall begin immediately, no later than 10 minutes, from the time the pervious concrete is discharged from the truck. Placing, finishing and tooled jointing and edging must be completed within the 10-minute window from discharge. The pavement surface shall be covered with a minimum of 6 mil thick clear polyethylene sheet or other approved covering material. Prior to covering, an evaporative reducer shall be sprayed above the surface when required due to ambient conditions (high temperature, high wind, and low humidity). The cover shall overlap all exposed edges and shall be secured (without using dirt or stone) to prevent dislocation due to winds or adjacent traffic conditions. For additional guidance on hot weather concreting, see ACI 305, and for cold weather concreting see ACI 306.
   b. Immediately after screeding, the surface shall be kept moist and evaporation prevented using a spray applied curing compound and/or evaporation retarder immediately after screeding. Note: The low water/cementitious ratio and high amount of exposed surface of pervious concrete makes it especially susceptible to drying out. Immediately after each transverse jointing the polyethylene sheet curing shall be applied then cross rolling shall be performed.
   c. The curing cover shall remain securely in place for a minimum of 7 days, uninterrupted. No vehicular traffic shall be permitted on the pavement until curing is complete (7 days) and no truck traffic shall be permitted for at least 14 days. Pedestrian traffic may be permitted on the curing concrete after 24 hours. The Architect/Engineer may permit earlier traffic opening times.

7. Sealing - When pervious concrete is produced with an integral color pigment, a UV resistant, non-yellowing acrylic based sealer per ASTM C 309 shall be lightly broadcast onto the cured pavement surface to brighten and highlight the color pigment without clogging the surface pores of the pervious matrix and disrupting its permeability. Some surface preparation may have to be conducted to prepare the sealer. Subsequent applications of the sealer shall be a part of the maintenance plan and not included in this contract.

8. Quality Control - Concrete:
   a. The Architect/Engineer shall employ a testing laboratory that conforms to the requirements of ASTM E329 and ASTM C1077. All personnel engaged in concrete testing shall be certified by the American Concrete Institute as ACI Concrete Field Technicians or equivalent.
b. Traditional concrete testing procedures for strength and slump control are not applicable to this type of pavement material. Procedures to be used per this guide specification include: ASTM C 172, ASTM C 29, ASTM C 42, ASTM C 1688, and ASTM C 1754.

c. Concrete tests shall be performed for each 50 yd³ (38 m³) or fraction thereof with a minimum of one set of tests for each day’s placement.

d. Sampling - Plastic concrete shall be sampled in accordance with ASTM C 172.

e. Density (unit weight) - Density (unit weight) of the plastic concrete shall be measured in accordance with ASTM C 1688. The density (unit weight) of the delivered concrete shall be +/- 5 lb/ft³ (80 kg/m³) of the submitted fresh density (unit weight).

f. Void content - Void content of the plastic concrete shall be calculated as per ASTM C 1688 and compared to the submitted fresh void content. Unless otherwise specified, void content shall be between 13% and 30%. After a minimum of seven (7) days, hardened concrete shall be tested at a rate of one set of three cores per 50 yd³ (38 m³) of concrete placed on one day or fraction thereof. Cores shall be drilled in accordance with ASTM C 42. The cores shall be measured for thickness, void structure and unit weight. Cores shall be taken at minimum 2 ft (0.6 m) away from the edge of placement to ensure a representative sample.

g. Thickness – Untrimmed hardened core samples shall be used to determine placement thickness. The average of all production cores when measured for length shall not be more than ½ in. (13 mm) less than the specified design thickness.

h. Core density (unit weight) and void content - The cores shall be tested for average density (unit weight) and void content using ASTM C 140. Density (unit weight) of cores trimmed and tested in the saturated condition, per ASTM C 1754 shall be +/- 5 % of the design unit weight or approved hardened density from the test panels.

i. Infiltration Rate of In-Place Pervious Concrete – The infiltration rate when tested in accordance with ASTM C1701 shall be a Minimum of 1000 inches per hour.

9. Basis of Payment

Pervious concrete pavement shall be paid for based on the square yards or square feet (square meters) of in-place product including materials and labor, thickness, and void content.
10. Performance and Inspection/Maintenance

Excessive raveling – At or before 28 days after placement, any areas of excessive surface raveling, as determined by the Architect/Engineer, shall be removed and replaced or repaired by the Contractor, [optional language – a) at the unit price established in the contract; or b) at no additional cost to the project].

Surface drainage – At or before 28 days after placement either the average infiltration rate of multiple locations or the infiltration rate of a determined localized area of the in-place pervious concrete shall be determined per ASTM C 1701. Any areas of insufficient surface porosity, as specified, shall be removed and replaced by the Contractor, at no additional cost to the project.
E. GEOTECHNICAL SPECIFICATIONS
SUBSURFACE INVESTIGATION
JOHN SHIELDS PARKWAY – PHASE 2
DUBLIN, FRANKLIN COUNTY, OHIO
S&ME Project No. 1117-15-012A

Report to:

EMH&T, Inc.
Columbus, Ohio

Prepared by:

6190 Enterprise Ct.
Dublin, Ohio 43016

July 2015
July 14, 2015  
1117-15-012A

EMH&T, Inc.  
5500 New Albany Road  
Columbus, Ohio 43054

Attention:  Mr. Michael Brehm, P.E.

Reference:  **Subsurface Investigation**  
John Shields Parkway – Phase 2  
Dublin, Franklin County, Ohio

Dear Mr. Brehm:

In accordance with our revised proposal dated February 12, 2015, which was authorized with EMH&T’s Task Order signed on May 19, 2015, and our request for modification of scope and fee dated June 8, 2015, S&ME, Inc. (S&ME) has completed the Subsurface Investigation for the proposed John Shields Parkway project in Dublin, Ohio. Our observations and recommendations associated with this subsurface investigation are herewith submitted.

In accordance with our proposal, the field (drilling) and laboratory work was not performed in accordance with the ODOT Specifications for Geotechnical Explorations.

We appreciate having been given the opportunity to be of service on this project. If you require additional assistance or have any questions, please feel free to contact our office at any time.

Respectfully,

S&ME, Inc.  
Columbus, Ohio

Christopher J. Nye, P.E.  
Project Engineer

Ronald T. Erb, P.E.  
Senior Reviewer

Submitted:  1 Electronic Copy (pdf) to Mr. Michael Brehm, P.E. (mbrehm@emht.com)
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<td>Summary of Laboratory Test Results</td>
<td>17</td>
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## APPENDIX B

<table>
<thead>
<tr>
<th>Description</th>
<th>Plate No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boring Logs</td>
<td>1-2</td>
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<td>Atterberg Limits’ Result</td>
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1. INTRODUCTION

S&ME, Inc. (S&ME) has completed the subsurface investigation for the proposed John Shields Parkway in Dublin, Ohio. These improvements are part of the Dublin Bridge Street Civic Core Project in Dublin, Franklin County, Ohio. The work was performed in general accordance with our revised proposal dated February 12, 2015. The purpose of this investigation was to obtain subsurface information to allow us to characterize the subsurface conditions and to evaluate pavement subgrade conditions for pavement design to be performed by others. Additional explorations were also requested to determine the presence of bedrock along the proposed sanitary sewer line. This report describes our understanding of the project, presents the results of the field exploration and laboratory testing, and discusses our conclusions and recommendations.

As requested by EMH&T, this investigation was not performed in strict accordance with ODOT’s Specifications for Geotechnical Explorations (SGE). S&ME understands that the project documents will reference ODOT specifications for roadway construction; therefore we have included reference to ODOT Construction and Materials Specifications (CMS) in our report.

2. SITE AND PROJECT DESCRIPTION

Based on the conceptual plan provided by EMH&T, S&ME understands this phase of the project includes of approximately 2600 feet of new roadway, to be named John Shields Parkway, in Dublin, OH. The proposed alignment begins at the existing Tuller Ridge Drive, approximately 650 feet south of the intersection with Tuller Road, and extends east to a new intersection with Village Parkway. The proposed roadway includes several intersections with future minor roads. Additionally, the project includes construction of an approximately 1500-foot long sanitary sewer. The sewer parallels the planned roadway along the south side, and is located along the western end of the project.

The project site is within commercial and residential areas and it includes substantial development within the project vicinity. Existing development along the proposed roadway includes commercial office buildings and associated parking; a residential community; and a vacant car dealership with parking lots. Six (6) of the twelve (12) borings were located along the proposed center line of John Shields Parkway; five (5) of the twelve (12) borings were along the new sewer alignment; and, one (1) boring was located along the proposed Hobbs Landing Drive.

S&ME previously performed a Subsurface Investigation for the proposed Dale and Tuller Ridge Drive Connector project and submitted our results in an engineering report dated May 15, 2015. In addition, borings for an adjacent residential development performed by GCI were provided by EMH&T. From these previous investigations, two (2) previously performed borings (Boring B-230 by S&ME and B-106 by GCI) were used to supplement the new borings, and are shown on the Plan of Borings on Plate 2 of Appendix A. Additionally, a copy of the boring logs and relevant laboratory testing is provided in Appendix B.
3. REGIONAL GEOLOGY

Geologic references indicate that this site is located in a portion of Ohio which has been glaciated. The Columbus Lowland area is surrounded in all directions by relative uplands, having a broad regional slope toward the Scioto Valley with many larger streams. The overburden soils consist of predominantly loamy Wisconsinan-age till and extensive outwash in the Scioto Valley over Devonian to Mississippian-age carbonate rocks, shales, and siltstones. Shale bedrock is located at relatively shallow depths in this region at higher elevations and limestone bedrock, lying below the shale, is located at relatively shallow depths in the lower elevations near the Scioto River. Based on geologic mapping, bedrock may be present at depths as shallow as 10 feet below the ground surface at the project site.

A review of the ODNR “Abandoned Underground Mines of Ohio” map reveals that no mapped abandoned underground mines are present in the vicinity of the site. A review of the ODNR “Ohio Karst Areas” map indicates probable karst is present in the project vicinity. Karst topography is a landscape shaped by the dissolution of a layer or layers of soluble bedrock, usually carbonate rock such as limestone or dolomite. Many karst regions display distinctive surface features, with sinkholes being the most common. However, distinctive karst surface features may be completely absent where the soluble rock is mantled, such as by glacial debris, or confined by a superimposed non-soluble rock strata. Some karst regions include the existence of caves, even though evidence of caves that are big enough for human exploration is not a required characteristic of karst.

4. EXPLORATION

4.1 Field Investigation

Between June 12 and June 16, 2015, S&ME was on-site and performed a total of twelve (12) borings (designated as Borings B-231 through B-242). The boring locations were surveyed, and were located in the field by EMH&T. The Borings were adjusted based on existing utilities and drill rig accessibility; therefore the locations should be considered approximate. The approximate locations of the borings are shown on the Plan of Borings submitted as Plate 2 in the Appendix of this report.

A drill rig mounted on an All-Terrain Vehicle (ATV) chassis using a 4 1/2-inch outside diameter (O.D.) continuous-flight auger was used to perform all borings. At regular intervals, 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, ASTM D1586).

Once auger refusal was encountered on the apparent bedrock surface in Borings B-231 and B-238, a changeover to rotary drilling techniques was made. Five (5) feet of bedrock core was obtained using an N-sized wire line (Q) rock core barrel and diamond core bit using water as a circulating/cooling fluid. Although it was planned to core bedrock in Boring B-235, the shale bedrock was too soft to effectively core. Additionally, coring performed in Boring B-238 determined that auger refusal was encountered on a granite
boulder and not the bedrock surface. Since both B-235 and B-238 had been advanced below the planned depth of the sewer, the borings were terminated without rock core.

In the field, experienced personnel performed the following: 1) examined all samples recovered from the borings; 2) preserved representative portions of all samples in airtight glass jars or compartmented boxes; 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 undersigned Project Engineer so that the exploration program could be modified in the event unusual or unexpected subsurface conditions were encountered.

At the completion of drilling, the borings were backfilled with soil cuttings, and where borings were performed within pavement, the existing pavement surface was repaired with an equivalent thickness of cold-patch asphalt. All recovered samples were transported to S&ME’s soils laboratory for further examination and testing.

4.2 Laboratory Testing

In the laboratory, the samples were visually identified and on a few representative samples, moisture contents, liquid and plastic limit determinations, and grain size analyses were performed. Results of these tests permit an evaluation of strength and subgrade support characteristics of the soil by comparison with similar soils for which these characteristics have been previously determined.

Based upon the results of the laboratory testing program, soil descriptions contained on the field logs were modified, if necessary, and laboratory-corrected logs are submitted as Plates 5 through 16 of the Appendix. Results of the laboratory tests are shown graphically on the individual boring logs and a summary of test results is presented on Plates 17 and 18 of the Appendix. Results of grain size analyses are presented on Plates 19 through 25.

Soils described in this report have been classified generally in accordance with the Unified Soil Classification System. However, the 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 and rock hardness are presented on Plates 3 and 4 of the Appendix.

4.2.1 Results of Soil Classification Testing

Atterberg limit testing was performed to provide engineering classifications of the on-site soils exhibiting cohesion. A total of seven (7) Atterberg limits were performed with liquid limits ranging from 22 to 55 percent, and plasticity indices ranging from 9 to 31 percent for the soils tested.

4.2.2 Results of Moisture Testing

Natural moisture content testing was performed on a total of seven (7) soil samples. The moisture contents of the on-site soils tested ranged from 14 to 29 percent. These values varied from 1 percent below to 6 percent above their corresponding plastic limit.
5. **FINDINGS**

Please refer to the boring logs submitted in the Appendix for information on the subsurface conditions encountered at the boring locations. Inferences should not be made to the subsurface conditions in the areas between or away from the borings without performance of additional borings as well as field verification.

5.1 **Existing Pavement**

The existing pavement sections encountered in the borings are summarized in Table 1 below.

<table>
<thead>
<tr>
<th>Boring No.</th>
<th>Existing Asphalt Thickness (in)</th>
<th>Existing Granular Base Thickness (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-238</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>B-239</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>B-240</td>
<td>3½</td>
<td>4½</td>
</tr>
<tr>
<td>B-241</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

5.2 **General Subsurface Stratigraphy**

At the existing ground surface, 2 to 3 ½ inches of asphalt underlain by 3 to 6 inches of granular base were encountered in the four borings (Borings B-238 through B-241) located in the existing parking lot, and 4 to 6 inches of topsoil were encountered in the remaining eight borings. Beneath the surficial materials, nine (9) borings encountered existing fill or possible fill to depths ranging from 3 to 16 feet below the existing ground surface. The fill was comprised primarily of very-stiff to hard cohesive (silty clay) soil. Borings B-235 and B-238 included a layer of very-soft cohesive fill/possible fill.

Underlying the fill, natural soils generally consisted of stiff to hard cohesive (silty clay) soil or medium-dense to dense sand and gravel. A later of medium-stiff silty clay was encountered in Boring B-234 at a depth of 11 feet below the existing ground surface, and zones of stiff silty clay soil were present at a depth of 3 feet in Borings B-240 and B-241. The apparent bedrock surface was encountered in Boring B-238 but upon performing rock core, it was determined to be a granite boulder. The borings were advanced to the planned termination depths or to sampler refusal. Limestone bedrock was encountered at the west end of the site, and transitioned to shale bedrock at higher elevations midway along the planned alignment. Table 2 provides a summary of bedrock type and depth. For more detailed descriptions of the subsurface conditions encountered at a particular boring location, the logs of the individual borings should be examined.
Table 2. Summary of Bedrock and Depth

<table>
<thead>
<tr>
<th>Boring No.</th>
<th>Station (John Shields Pkwy)</th>
<th>Offset</th>
<th>Depth</th>
<th>Elevation</th>
<th>Type</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-231</td>
<td>670+25</td>
<td>55 RT</td>
<td>10.5</td>
<td>834.0</td>
<td>Limestone</td>
<td></td>
</tr>
<tr>
<td>B-232</td>
<td>672+80</td>
<td>0</td>
<td>11.0</td>
<td>842.1</td>
<td>Limestone</td>
<td></td>
</tr>
<tr>
<td>B-233</td>
<td>674+00</td>
<td>60 RT</td>
<td>14.9</td>
<td>836.7</td>
<td>Possibly limestone</td>
<td>Sampler refusal encountered but no rock sample recovered</td>
</tr>
<tr>
<td>B-234</td>
<td>676+05</td>
<td>0</td>
<td>&gt; 15.0</td>
<td>--</td>
<td>--</td>
<td>Rock not encountered</td>
</tr>
<tr>
<td>B-235</td>
<td>678+90</td>
<td>55 RT</td>
<td>19.0</td>
<td>841.1</td>
<td>Shale</td>
<td></td>
</tr>
<tr>
<td>B-236</td>
<td>681+10</td>
<td>55 RT</td>
<td>12.0</td>
<td>851.8</td>
<td>Shale</td>
<td></td>
</tr>
<tr>
<td>B-237</td>
<td>682+80</td>
<td>0</td>
<td>12.0</td>
<td>853.7</td>
<td>Shale</td>
<td></td>
</tr>
<tr>
<td>B-238</td>
<td>685+40</td>
<td>50 RT</td>
<td>&gt; 19.0</td>
<td>--</td>
<td>--</td>
<td>Cored granite boulder at 19.0’</td>
</tr>
<tr>
<td>B-239</td>
<td>686+80</td>
<td>0</td>
<td>&gt; 9.5</td>
<td>--</td>
<td>--</td>
<td>Sampler refusal encountered at 9.5’</td>
</tr>
<tr>
<td>B-240</td>
<td>690+80</td>
<td>0</td>
<td>5.5</td>
<td>870.7</td>
<td>Shale</td>
<td></td>
</tr>
<tr>
<td>B-241</td>
<td>694+80</td>
<td>0</td>
<td>6.0</td>
<td>878.5</td>
<td>Shale</td>
<td></td>
</tr>
<tr>
<td>B-242</td>
<td>102+50*</td>
<td>15 RT</td>
<td>&gt; 10.0</td>
<td>--</td>
<td>--</td>
<td>Rock not encountered</td>
</tr>
</tbody>
</table>

*Stationing along Hobbs Landing Drive.

5.3 Groundwater Observations
Groundwater observations were made as each boring was being advanced and measurements were made at the completion of drilling. Groundwater and/or seepage was encountered during drilling in 4 of the 12 borings (B-235 through B-238) at depths of 6.0 to 10.0 feet below the present ground surface. Upon completion of drilling, water was measured at depths ranging from 6.5 to 10.0 in B-235 and B-239. The remaining borings were noted as being “dry,” that is to say no measurable amount of water had collected in the borehole prior to backfilling. All borings were backfilled immediately upon completion, therefore, no longer term water level measurements were made.

6. ANALYSIS AND RECOMMENDATIONS

6.1 Roadway Embankment Construction
Preliminary profile information provided by EMH&T indicates that as much as 6 feet of cut and 1 to 2 feet of new fill will be necessary to attain the desired profile for the proposed John Shields Parkway. Stability analyses were not performed for the proposed embankments.
6.1.1 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 roadway/embankment. Prior to the placement of any new fill for embankment widening, it is recommended that the entire footprint of the widened embankment be exposed and proofrolled in accordance with 2013 ODOT Construction and Material Specifications (CMS) Item 204.06, and Item 204 of the 2009 ODOT Construction Inspection Manual of Procedures (CIMP), to detect any soft, wet or weak zones that might be present.

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. S&ME 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.

6.1.2 “Fill” Areas

After all unsuitable materials have been removed during the site preparation process, and prior to commencing fill placement, it is recommended that horizontal benches be cut into all existing sloping surfaces to permit placement and compaction of new fill in horizontal lifts. In areas where new fill is to be placed on the side of an existing embankment which is steeper than 4H:1V, S&ME recommends that “Special Benching” procedures as outlined in the ODOT Geotechnical Bulletin GB2, Special Benching and Sidehill Embankment Fills (ODOT GB2), dated July 22, 2013, and the 2009 ODOT Construction Inspection Manual of Procedures be utilized.

Sketches illustrating several “typical” Special Benching configurations for sidehill fills on various slopes are included in Figures 1, 2 and 3 on pages 3 and 6 of the ODOT GB2 document. These configurations require a minimum distance of 8 feet between the crest of the bench back-slopes and the face of the new slope to permit compaction and grading equipment to work on a horizontal surface.

During Special Benching procedures, S&ME also recommends the following: 1) only one bench be exposed at any given time and that excavation of the next bench should not be permitted until embankment fill placement and compaction has been completed to the top of the backslope of the previous bench; and, 2) the length of any given bench that is exposed should not exceed the quantity of embankment fill which may be properly placed and compacted in one day. Additionally, S&ME recommends that the final, completed side slopes of embankments be constructed no steeper than 2H:1V.

As stated in the ODOT GB2, wherever “Special Benching” is used, Plan Note from the ODOT L&D Manual, Vol. 3, should be included in the General Notes.
6.1.3 “At-Grade” and “Cut” Areas

- Soil Subgrade

Once the desired subgrade elevation has been attained in “cut” and “at-grade” areas, and 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 CMS, and Section 204 of the 2006 ODOT CIMP. 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. 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).

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.

- Bedrock Subgrade

Bedrock was not encountered within 2 feet of the proposed subgrade elevation. However, if shallow bedrock is encountered, in accordance with Item 204.05 of the ODOT 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. S&ME recommends that consideration be given to using ODOT Item 703.16.C.2 Granular Material B (Item 304).

S&ME also recommends that consideration be given to placing a geotextile fabric (ODOT Item 712.09, Type D) at the bottom of subgrade overexcavations in rock 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.
Additionally, it must be emphasized that a direct correlation should not be made between the performance of the drilling rigs and the ability of conventional construction equipment to excavate bedrock at this site.

6.1.4 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, S&ME 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. Borrow materials should not be placed in a frozen condition or upon a frozen surface, and any sloping surfaces on which new fill is to be placed should first be benched in accordance with either Item 203.05 or ODOT GB2, depending on the slope of the existing ground surface at each location.

Compaction requirements for the construction of earthen embankments are based on ODOT CMS Item 203.07.B (or Item 204.03 when within 12 inches of subgrade level), which specifies a minimum percent compaction based on the dry unit weight of the type of soil fill being placed. S&ME recommends that sampling and testing of all proposed borrow material be performed prior to construction to verify that the borrow soils are suitable for the planned construction. 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 of this report).

It should be noted that the cohesive soils encountered in the borings, 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 removed and 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.

6.1.5 Yielding Subgrade

Laboratory tests performed on the near-surface soils at this site indicate that the anticipated subgrade soils and on-site borrow material 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 material becomes 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 8 to 12 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 12 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.

6.2 Pavement Subgrade Evaluation

It is anticipated that the subgrade for the pavements within the site will consist of natural stiff to hard silty clay deemed suitable for pavement support following favorable proofrolling, or newly placed controlled fill. Given the variable nature of the subgrade soil and based on laboratory tests performed on the near surface soils, along with ODOT Group Index correlations, it is recommended that the following values be used for to design the new pavement sections:

- California Bearing Ratio (CBR): 3%
- Resilient Modulus (MR): 3,600 psi
- Modulus of Subgrade Reaction (k): 100 psi

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 ODOT CMS, and the recommendations presented in this report. Based on the conditions encountered in the borings, it should be anticipated that portions of the existing subgrade may not provide a CBR value equal to or greater than 3% and will need to be removed and wasted.
This subgrade evaluation also considers 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, S&ME 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 3% in a properly compacted state.

In addition to proper subgrade preparation, we recommend that the pavement design and construction include surface and subsurface drainage measures. Water which infiltrates the pavement and remains trapped within the pavement components during traffic loading is one of the leading causes of premature pavement failure. Effective design measures include the use of perimeter swales, perimeter edge drains, curbs, or a combination of these features to collect surface water runoff from areas adjacent to the pavement. Cohesive subgrade soils should be crowned or sloped to promote drainage of infiltrating water towards subsurface drainage collection systems.

6.3 Storm Sewer Recommendations
Based on the subsurface conditions encountered in the borings near the anticipated sewer invert of 10 to 12 feet below existing grades, S&ME anticipates that the planned sewer lines will bear on a variety of soils. This includes very-soft silty clay fill, very-stiff to hard natural silty clay, medium-dense sand, and limestone and shale bedrock. Additionally, the material types being encountered in the excavation walls and bottoms may also quickly change as excavations proceed both vertically and laterally. It is our opinion that the soils encountered, in general, should provide suitable support for the planned sewer lines and associated structures. Concerns regarding storm and sanitary sewer installation are as follows:

1) instability of the excavations during construction;
2) bedrock excavation;
3) soil deposits of low strength at or below the proposed invert elevation; and,
4) groundwater and the need for dewatering.
The following sections of this report provide specific recommendations.

6.3.1 Excavation Considerations

The soils encountered in the borings consisted of generally encountered cohesive soil (either existing fill or natural soil) with underlying or interbedded granular (sand and gravel) soils. These soil materials are underlain by shale and/or limestone bedrock. Sloughing and caving of excavations should be anticipated where weak soils are encountered or where granular seams and layers are present (Boring B-235 at a depth of 6 feet or more below the ground surface, Boring B-236 between a depth of 5.5 and 7.5 feet below the ground surface, and Boring B-238 below a depth of 11 feet). Also, seams and zones of sand and/or silt that are saturated and subsequently unconfined (i.e., exposed) or disturbed by vibrations from nearby construction activities may exhibit a ‘quick’ condition and may ‘flow’. Additionally, all excavations should be either sloped back or braced in accordance with the most recent OSHA excavation guidelines.

The top of bedrock was encountered along the proposed sewer line at depths varying from 10.5 to 19 feet below existing grades. The bedrock was described as hard limestone at the west end of the site, and very-soft to soft shale at Boring B-235 and further east. Proposed invert sewer elevations are not available at this time; however, based on discussions with EMH&T, it is anticipated that the sewer will be on the order of 10 to 12 feet below existing grades. A summary table showing top of bedrock depths encountered in the borings is shown in Table 2 of this report.

Bedrock may initially be excavated using conventional equipment; however, excavations into shale and particularly limestone will likely become increasingly difficult at greater depths. Because of the presence of relatively shallow bedrock, the contractor should be made aware of possible rock excavation and should be prepared to break up and remove the rock if necessary. It may be beneficial for the contractor to perform additional exploratory test pits to better verify the competency of the bedrock and the depth to which excavations can be performed using conventional methods. No correlation should be made between the ability of the drilling equipment to penetrate the rock verses excavation equipment or other rock excavation techniques, such as ripping, blasting, or hydraulic splitting.

6.3.2 Pipe Support

The following recommendations are offered for pipe support.

- In general, the natural soils exhibiting a stiff to hard consistency for cohesive soils, or the underlying granular soils, should be suitable for support of the proposed sewer line pipe. The soils excavated will weigh more than the pipe to be installed, so bearing should be adequate and settlement of the sewer line will be minimal.

- If weaker soils are encountered (such as the very soft silty clay in Borings B-235 and Boring B-238), or if soils become disturbed by construction activity or softened by the presence of water, S&ME recommends that the exposed weak soils be stabilized.
to provide suitable bearing support for the pipe. For stabilization, S&ME recommends that trenches be over-excavated a maximum depth of 2 feet below the pipe invert to expose firm natural soil. If soft soil is present at the maximum over-excavation depth of 2 feet, S&ME recommends that a woven geotextile fabric (ODOT Item 712.09 Type A) be placed at the bottom of the over-excavation prior to placement of granular backfill. The over-excavation should be backfilled with an open graded granular material (such as Item 703.11, Type 3 structural backfill). Prior to placing the open graded material, any accumulation of groundwater should be removed. The granular backfill should be placed and compacted in accordance with ODOT CMS Item 611.06 and Item 203. Depending on the type of stone required for pipe bedding and the type and depth of weak soils present below the pipe, a portion of the specified pipe bedding may be able to be incorporated into the 2 feet of overexcavation.

- Because it is noted in the borings performed for this investigation, if bedrock is present at the invert elevations, it is recommended that sufficient granular bedding material be 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 zone between bedrock and the bottom of the pipe.

6.3.3 Backfill Recommendations

All trench backfill placed for the sewer line construction should be placed and compacted in accordance with Item 911 of the 2012 City of Columbus Ohio, Construction and Material Specifications (CMS). In particular, any fill placed in utility trenches located within the zone of influence of pavement or buildings/structures should be placed and compacted in accordance with Item 203.07 of the City of Columbus CMS. All fill placed in utility trenches lying outside the zone of influence of pavement loads and any future building/structure loads may be compacted to a dry unit weight of no less than 95% of the maximum dry unit weight as determined by ASTM D698. The moisture content of all soil that is used as structural fill (fill placed within the zone of influence of buildings and pavement) should be maintained within -2% to +2% of the optimum moisture content during all compaction operations. Backfill should consist of inorganic material free of debris, large cobbles and boulders, and should not be frozen or placed on frozen soil. It is our opinion that the majority of the soil that will be excavated for the sewer installation may be suitable for reuse as backfill, provided it is properly moisture conditioned (i.e. may require wetting or drying) and removed of all cobbles and boulders.

6.3.4 Uplift Considerations

To resist any potential uplift pressures created by groundwater, the proposed sewer and manholes should be designed for uplift pressures resulting from the difference in elevation between the maximum anticipated hydrostatic head around the structure and the bottom of the structure. The structure dead weight and the frictional resistance developed between the backfill and structure walls must provide an adequate factor of safety against the anticipated hydrostatic uplift force. Uplift resistance may be increased by increasing the dead weight of the structure, cantilevering the structure based/foundation beyond the
walls of the structure, or anchoring the foundation to the underlying soil strata using piles or soil anchors.

6.4 **Groundwater Considerations**

During the drilling operations, groundwater was encountered at a depth of 6.5 to 10.0 feet below the existing ground surface in Borings B-235 through B-238. Based on this and the conditions encountered in the remaining borings, minor amounts of seepage may be anticipated from seasonal precipitation or in areas where granular soils are present. Extended groundwater readings were not obtained as part of this investigation; however, water levels can fluctuate with time of year and with precipitation. S&ME anticipates that, if encountered, the groundwater seepage could be handled by pumping from sumps. If more significant quantities of groundwater flow are encountered, several pumps excavated in advance of the excavations could be necessary. S&ME should be retained to provide additional recommendations if significant groundwater flows are encountered.

The presence of water in trenches, coupled with construction activity, will soften and weaken the soil at the bottom of the excavations, and these affected materials may cause settlement beneath a pipe or structure following backfilling. Therefore, the excavation bottoms should be kept free of standing water, and any soft/weak or disturbed cohesive soils should be removed and replaced with stone.

7. **FINAL CONSIDERATIONS**

The analyses, conclusions and recommendations discussed in this report are based on conditions as they exist at the time of our field investigation and further on the consideration that the exploratory borings are representative of subsurface conditions throughout the areas investigated. Actual subsurface conditions 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, S&ME should be notified immediately so that we may evaluate the effects, if any, on the design and construction.

S&ME should be retained to review the final project plans to verify that the intent of our recommendations has been followed. During construction, it is recommended that a representative from this office be on-site to observe excavations and bearing surfaces for pipe support and structure foundations, to perform backfill testing, and to verify that the conditions being encountered during construction are similar to those encountered in our borings. S&ME cannot assume responsibility or liability for the adequacy of recommendations if we do not observe construction.

This report was written for our client, EMH&T, Inc. This report may not be relied upon for use in other projects, additions to the current project, or any other purpose for which the material was not strictly intended by S&ME without S&ME’s express written permission.
APPENDIX A
EXPLANATION OF SYMBOLS AND TERMS USED ON BORING LOGS
FOR SAMPLING AND DESCRIPTION OF SOIL

SAMPLING DATA

- Indicates sample was attempted within this depth interval.

2 - 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 (SPT). The raw “blowcount” or “N” is equal to the sum of the second and third 6-inch increments of penetration.

50-3” - Number of blows (50) to drive a split-barrel sampler a certain distance (3 inches) other than the normal 6-inch increment.

N₆₀ - Corrected Blowcount = [(Drill Rod Energy Ratio) / (0.60 Standard)] X N

SS - Split-barrel sampler, any size.

ST - Shelby tube sampler, 3” O.D., hydraulically pushed.

R - Refusal of sampler in very-hard or dense soil, or on a resistant surface.

ST - Shelby tube sampler, 3” O.D., hydraulically pushed.

DEPTH DATA

W - Depth of water or seepage encountered during drilling.

AD - Depth to water in boring after drilling (AD) is terminated.

5 days - Depth to water in a monitoring well, or a piezometer in a boring, a certain number of days (5) after termination of drilling.

TR - Depth to top of rock.

SOIL DESCRIPTIONS

Soils have been classified in general accordance with Section 603 of the most recent ODOT SGE, and described in general accordance with Section 602, including the use of special adjectives to designate approximate percentages of minor components as follows:

<table>
<thead>
<tr>
<th>Adjective</th>
<th>Percent by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>trace</td>
<td>1 to 10</td>
</tr>
<tr>
<td>little</td>
<td>10 to 20</td>
</tr>
<tr>
<td>some</td>
<td>20 to 35</td>
</tr>
<tr>
<td>“and”</td>
<td>35 to 50</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Term (Granular Soils)</th>
<th>Blows per foot (N₆₀)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very-loose</td>
<td>Less than 5</td>
</tr>
<tr>
<td>Loose</td>
<td>5 to 10</td>
</tr>
<tr>
<td>Medium-dense</td>
<td>11 to 30</td>
</tr>
<tr>
<td>Dense</td>
<td>31 to 50</td>
</tr>
<tr>
<td>Very-dense</td>
<td>Over 50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Term (Cohesive Soils)</th>
<th>Qu (tsf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very-soft</td>
<td>Less than 0.25</td>
</tr>
<tr>
<td>Soft</td>
<td>0.25 to 0.5</td>
</tr>
<tr>
<td>Medium-stiff</td>
<td>0.5 to 1.0</td>
</tr>
<tr>
<td>Stiff</td>
<td>1.0 to 2.0</td>
</tr>
<tr>
<td>Very-stiff</td>
<td>2.0 to 4.0</td>
</tr>
<tr>
<td>Hard</td>
<td>Over 4.0</td>
</tr>
</tbody>
</table>
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:

<table>
<thead>
<tr>
<th>RQD - %</th>
<th>General Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 25</td>
<td>Very-poor</td>
</tr>
<tr>
<td>25 - 50</td>
<td>Poor</td>
</tr>
<tr>
<td>50 - 75</td>
<td>Fair</td>
</tr>
<tr>
<td>75 - 90</td>
<td>Good</td>
</tr>
<tr>
<td>90 - 100</td>
<td>Excellent</td>
</tr>
</tbody>
</table>

ROCK HARDNESS

THE FOLLOWING TERMS ARE USED TO DESCRIBE ROCK HARDNESS:

<table>
<thead>
<tr>
<th>Term</th>
<th>Meaning</th>
<th>Mohs’ Hardness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very-soft</td>
<td>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.</td>
<td>Less than 1</td>
</tr>
<tr>
<td>Soft</td>
<td>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.</td>
<td>1 to 1½</td>
</tr>
<tr>
<td>Medium-hard</td>
<td>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.</td>
<td>2½ to 5½</td>
</tr>
<tr>
<td>Hard</td>
<td>Rock is well cemented and cannot be powdered by a knife. Rock can be powdered by a steel file.</td>
<td>5½ to 6½</td>
</tr>
<tr>
<td>Very-hard</td>
<td>Rock cannot be scratched by a steel file and the core sample rings when struck with a hammer.</td>
<td>Greater than 6½</td>
</tr>
</tbody>
</table>
**LOG OF BORING NO. B-231**  
**JOHN SHIELDS PARKWAY - PHASE 2**  
**DUBLIN, OHIO**

**LOCATION:** See Plate 2 of Appendix.  
**ELEVATION:** 844.5  
**DATE:** 6/15/15  
**COMPLETION DEPTH:** 15.5’

**DRILLING METHOD:** 4-1/2” O.D. Continuous-flight Auger  
**SAMPLER(S):** 2” O.D. Split-barrel Sampler, NQ Rock Core Barrel

<table>
<thead>
<tr>
<th>ELEV.</th>
<th>DEPTH, FEET</th>
<th>SAMPLE NUMBER</th>
<th>SAMPLE NUMBER</th>
<th>SAMPLE NUMBER</th>
<th>SAMPLE NUMBER</th>
<th>SAMPLE NUMBER</th>
<th>SAMPLE NUMBER</th>
<th>SAMPLE NUMBER</th>
<th>N°</th>
<th>SAMPLE EFFORT</th>
<th>N.°</th>
<th>SAMPLE EFFORT</th>
<th>N°</th>
<th>SAMPLE EFFORT</th>
<th>N°</th>
<th>SAMPLE EFFORT</th>
<th>N°</th>
<th>SAMPLE EFFORT</th>
</tr>
</thead>
<tbody>
<tr>
<td>844.0</td>
<td>0</td>
<td>1</td>
<td>8 / 6 / 7</td>
<td>20</td>
<td>53</td>
<td></td>
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<tr>
<td>841.5</td>
<td>5</td>
<td>2</td>
<td>8 / 11 / 21</td>
<td>50</td>
<td>33</td>
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<tr>
<td>834.0</td>
<td>10</td>
<td>3</td>
<td>34 / 21 / 13</td>
<td>53</td>
<td>67</td>
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<tr>
<td>829.0</td>
<td>15</td>
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<td>824.0</td>
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<tr>
<td>819.0</td>
<td>25</td>
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<tr>
<td>814.0</td>
<td>30</td>
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</tr>
</tbody>
</table>

**DESCRIPTION**

**TOPSOIL - 6 INCHES**

**POSSIBLE FILL:** Hard brown with gray silty clay, little fine to coarse sand, trace fine to coarse gravel, many roots.

**POSSIBLE FILL:** Hard brown silty clay "and" fine to coarse sand, little fine to coarse gravel.

Hard gray and dark-gray, limestone with few shale seams, nearly horizontally bedded, many horizontal fractures, some recemented fractures, many chert nodules.

- No seepage encountered prior to rock coring.
- Borings backfilled with cuttings mixed with bentonite chips.
- Boring locations and elevations provided by EMH&T.

**SYMBOLS USED TO INDICATE TEST RESULTS**

- Gradation
- Uncon Comp
- Triax Comp
- Consol.
- Penetrometer (tsf)
- Unit Dry Wt (pcf)
- Relative Dens (%)

**Drill Rod Energy Ratio:** 0.93  
**Last Calibration Date:** R11  
**Drill Rig Number:** CME 750
FILL: Hard brown silty clay, some fine to coarse sand, trace fine to coarse gravel, many roots.

FILL: Very-stiff brown with gray silty clay, some fine to coarse sand, trace to little fine to coarse gravel, few roots (slightly organic).

Weathered limestone.

- No seepage encountered.
- Encountered refusal at 11.9'.
- Borings backfilled with cuttings mixed with bentonite chips.
- Boring locations and elevations provided by EMH&T.
**LOG OF BORING NO. B-233**

**JOHN SHIELDS PARKWAY - PHASE 2**

**DUBLIN, OHIO**

**LOCATION:** See Plate 2 of Appendix.  
**ELEVATION:** 851.6  
**DATE:** 6/15/15  
**COMPLETION DEPTH:** 14.9'  
**DRILLING METHOD:** 4-1/2" O.D. Continuous-flight Auger  
**SAMPLER(S):** 2" O.D. Split-barrel Sampler

<table>
<thead>
<tr>
<th>ELEV</th>
<th>DEPTH FEET</th>
<th>SAMPLE NUMBER</th>
<th>SAMPLE EFFORT</th>
<th>SAMPLE REL. %</th>
<th>DESCRIPTION</th>
<th>TEST RESULTS</th>
<th>NATURAL MOISTURE CONTENT</th>
<th>NATURAL CONSISTENCY INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>851.1</td>
<td></td>
<td>1</td>
<td>6/8/6</td>
<td>22</td>
<td>FILL: Very-stiff to hard brown silty clay, little fine to coarse sand, trace fine to coarse gravel, few roots.</td>
<td>H=4.5+</td>
<td>10 20 30 40</td>
<td></td>
</tr>
<tr>
<td>845.6</td>
<td>-5</td>
<td>2</td>
<td>5/6/6</td>
<td>19</td>
<td>POSSIBLE FILL: Very-stiff to hard brown silty clay, some fine to coarse sand, trace to little fine to coarse gravel.</td>
<td>H=2.5</td>
<td>10 20 30 40</td>
<td></td>
</tr>
<tr>
<td>836.7</td>
<td>-10</td>
<td>3</td>
<td>3/3/3</td>
<td>9</td>
<td></td>
<td>H=4.5+</td>
<td>10 20 30 40</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-15</td>
<td>4</td>
<td>15/21</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**WATER LEVEL:** "Dry"  
**WATER NOTE:** At Completion  
**DATE:** 6/18/2015

**SYMBOLS USED TO INDICATE TEST RESULTS**
- H - Penetrometer (tsf)
- T - Triax Comp
- C - Consol. Curves
- G - Uncon Comp
- Q - Gradation
- W - Unit Dry Wt (pcf)
- E - Relative Dens (%)

**Drill Rod Energy Ratio:** 0.93  
**Last Calibration Date:** R 11  
**Drill Rig Number:** CME 750
**LOG OF BORING NO. B-234**  
**JOHN SHIELDS PARKWAY - PHASE 2**  
**DUBLIN, OHIO**

**LOCATION:** See Plate 2 of Appendix.  
**ELEVATION:** 852.7  
**DATE:** 6/12/15  
**COMPLETION DEPTH:** 15.0'

**DRILLING METHOD:** 4-1/2" O.D. Continuous-flight Auger  
**SAMPLER(S):** 2" O.D. Split-barrel Sampler

<table>
<thead>
<tr>
<th>ELEV. DEPTH</th>
<th>SAMPLE NUMBER</th>
<th>SAMPLE EFFORT</th>
<th>N°</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>852.4</td>
<td>1</td>
<td>14</td>
<td>33</td>
<td>Hard brown silty clay, trace fine to coarse sand.</td>
</tr>
<tr>
<td>849.2</td>
<td>2</td>
<td>20</td>
<td>100</td>
<td>Very-stiff to hard brown silty clay, some fine to coarse sand, trace fine to coarse gravel, few roots.</td>
</tr>
<tr>
<td>844.7</td>
<td>3</td>
<td>17</td>
<td>100</td>
<td>Very-stiff brown silty clay, some fine to coarse sand, trace fine to coarse gravel.</td>
</tr>
<tr>
<td>841.7</td>
<td>4</td>
<td>17</td>
<td>100</td>
<td>Medium-stiff brown silty clay, some fine to coarse sand, trace fine to coarse gravel.</td>
</tr>
<tr>
<td>837.7</td>
<td>5</td>
<td>17</td>
<td>33</td>
<td>- No seepage encountered.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Borings backfilled with cuttings mixed with bentonite chips.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Boring locations and elevations provided by EMH&amp;T.</td>
</tr>
</tbody>
</table>

**WATER LEVEL:** "Dry"  
**WATER NOTE:** At Completion  
**DATE:** 6/12/15

**SYMBOLS USED TO INDICATE TEST RESULTS**

- Drill Rig Energy Ratio: 0.93  
- Last Calibration Date: R11  
- Drill Rig Number: CME 750
**LOG OF BORING NO. B-235**  
**JOHN SHIELDS PARKWAY - PHASE 2**  
**DUBLIN, OHIO**

**LOCATION:** See Plate 2 of Appendix.  
**ELEVATION:** 860.1  
**DATE:** 6/15/15  
**COMPLETION DEPTH:** 24.3'

**DRILLING METHOD:** 4-1/2" O.D. Continuous-flight Auger  
**SAMPLER(S):** 2" O.D. Split-barrel Sampler

<table>
<thead>
<tr>
<th>ELEV.</th>
<th>DEPTH (FEET)</th>
<th>SAMPLE NUMBER</th>
<th>SAMPLE EFFORT</th>
<th>N.o</th>
<th>SAMPLE RxC%</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>859.6</td>
<td>0</td>
<td>1</td>
<td>5/21</td>
<td>53</td>
<td></td>
<td>TOPSOIL - 6 INCHES</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50-1”R</td>
<td></td>
<td></td>
<td></td>
<td>FILL: Hard brown with gray silty clay, little fine to coarse sand, trace fine to coarse gravel, few roots.</td>
</tr>
<tr>
<td>854.1</td>
<td>-5</td>
<td>2</td>
<td>3/8</td>
<td>23</td>
<td>80</td>
<td>POSSIBLE FILL: Very-soft brown silty clay &quot;and&quot; fine to coarse sand, little fine to coarse gravel, few cobbles.</td>
</tr>
<tr>
<td></td>
<td>-10</td>
<td>3</td>
<td>5/5</td>
<td>22</td>
<td>27</td>
<td>Medium-dense brown fine to coarse sand, little fine to coarse gravel, little clayey silt.</td>
</tr>
<tr>
<td>848.1</td>
<td>-15</td>
<td>4</td>
<td>9/13</td>
<td>36</td>
<td>67</td>
<td>Very-so to hard gray shale.</td>
</tr>
</tbody>
</table>
| 841.1 | -20          | 5A            | 5/29          | 95  | 67          | - No seepage encountered.  
- Encountered cobbles at 10.0’.  
- Borings backfilled with cuttings mixed with bentonite chips.  
- Boring locations and elevations provided by EMH&T. |
|       |              | 5B            | 29/32         |     |             |             |
| 835.8 | -25          | 6             | 13            | 67  |             |             |

**WATER LEVEL:** 859.6'  
**WATER NOTE:** At Completion  
**DATE:** 6/18/2015

**SYMBOLS USED TO INDICATE TEST RESULTS**
- G - Gradation  
- Q - Unconfined Compressibility  
- T - Triaxial Compression  
- C - Consol.  
- S - Penetrometer (tsf)  
- W - Unit Dry Wt (pcf)  
- B - Relative Dens (%)  

**Drill Rig Energy Ratio:** 0.93  
**Last Calibration Date:** R11  
**Drill Rig Number:** CME 750
LOG OF BORING NO. B-236
JOHN SHIELDS PARKWAY - PHASE 2
DUBLIN, OHIO

LOCATION: See Plate 2 of Appendix.  ELEVATION: 863.8  DATE: 6/12/15
DRILLING METHOD: 4-1/2" O.D. Continuous-flight Auger  COMPLETION DEPTH: 15.0'
SAMPLER(S): 2" O.D. Split-barrel Sampler

<table>
<thead>
<tr>
<th>ELEV.</th>
<th>DEPTH, FEET</th>
<th>SAMPLE NUMBER</th>
<th>SAMPLE EFFORT</th>
<th>SAMPLE description</th>
<th>NATURAL CONSISTENCY INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>863.4</td>
<td>0</td>
<td>1</td>
<td>25</td>
<td>TOPSOIL - 5 INCHES</td>
<td></td>
</tr>
<tr>
<td>858.3</td>
<td>-5</td>
<td>2</td>
<td>8</td>
<td>FILL: Very-stiff brown with dark-gray silty clay, little fine to coarse sand, trace fine to coarse gravel, many roots.</td>
<td></td>
</tr>
<tr>
<td>857.0</td>
<td>-10</td>
<td>3A</td>
<td>37</td>
<td>Very-soft to soft highly weathered shale, similar to soil.</td>
<td></td>
</tr>
<tr>
<td>856.3</td>
<td>-10</td>
<td>3B</td>
<td>80</td>
<td>FILL: Soft brown silty clay &quot;and&quot; fine to coarse sand, little fine to coarse gravel.</td>
<td></td>
</tr>
<tr>
<td>851.8</td>
<td>-20</td>
<td>4</td>
<td>48</td>
<td>FILL: Hard-dark gray shale fragments intermixed with brown silty clay.</td>
<td></td>
</tr>
<tr>
<td>848.8</td>
<td>-25</td>
<td>5</td>
<td>47</td>
<td>Hard brown mottled with gray silty clay, trace fine to coarse sand, trace fine to coarse gravel.</td>
<td></td>
</tr>
<tr>
<td>843.3</td>
<td>-30</td>
<td>6</td>
<td>104</td>
<td>- Encountered water at 6.0'.</td>
<td></td>
</tr>
</tbody>
</table>

SYMBOLS USED TO INDICATE TEST RESULTS
- Uncon Comp: Unconsolidated Compaction
- Triax Comp: Triaxial Compaction
- Consol: Consolidation
- Penetrometer (tsf): Penetrometer Test Results
- Unit Dry Wt (pcf): Unit Dry Weight
- Relative Dens (%): Relative Density

Drill Rig Energy Ratio: 0.93  Last Calibration Date: R11  Drill Rig Number: CME 750

WATER LEVEL: 6'  WATER NOTE: At Completion  DATE: 6/12/15

JOB: 1117-15-012A
**LOG OF BORING NO. B-237**
**JOHN SHIELDS PARKWAY - PHASE 2**
**DUBLIN, OHIO**

**LOCATION:** See Plate 2 of Appendix.

**DRILLING METHOD:** 4-1/2" O.D. Continuous-flight Auger

**SAMPLER(S):** 2" O.D. Split-barrel Sampler

<table>
<thead>
<tr>
<th>ELEV</th>
<th>DEPTH, FEET</th>
<th>SAMPLE NUMBER</th>
<th>SAMPLE EFFORT</th>
<th>N.o</th>
<th>SAMPLE RS-%</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>865.3</td>
<td>0</td>
<td>1</td>
<td>3/4/5</td>
<td>14</td>
<td>67</td>
<td>POSSIBLE FILL: Very-stiff brown mottled with gray clay, little fine to coarse sand, trace fine to coarse gravel, slightly organic.</td>
</tr>
<tr>
<td>863.2</td>
<td></td>
<td>2</td>
<td>10/12/12</td>
<td>37</td>
<td>67</td>
<td>POSSIBLE FILL: Very-stiff brown mottled with gray silty clay, some fine to coarse sand, little fine to coarse gravel.</td>
</tr>
<tr>
<td>860.2</td>
<td>-5</td>
<td>3</td>
<td>4/6/12</td>
<td>17</td>
<td>87</td>
<td>Medium-dense brown fine to coarse sand, trace silt.</td>
</tr>
<tr>
<td>858.7</td>
<td></td>
<td>4</td>
<td>10/13/15</td>
<td>43</td>
<td>33</td>
<td>Dense brown fine to coarse sand &quot;and&quot; gravel, trace silty clay.</td>
</tr>
<tr>
<td>853.7</td>
<td>-10</td>
<td>5</td>
<td>5/9/16</td>
<td>39</td>
<td>53</td>
<td>Very-soft to soft dark-gray highly weathered shale, similar to soil.</td>
</tr>
</tbody>
</table>
| 850.7 | -15         | 6             | 25/27/21      | 74  | 87          | - Encountered seepage at 6.0'.
- Caved at 12.0'.
- Borings backfilled with cuttings mixed with bentonite chips.
- Boring locations and elevations provided by EMH&T. |
LOG OF BORING NO. B-238
JOHN SHIELDS PARKWAY - PHASE 2
DUBLIN, OHIO

LOCATION: See Plate 2 of Appendix.

DRILLING METHOD: 4-1/2" O.D. Continuous-flight Auger

SAMPLER(S): 2" O.D. Split-barrel Sampler

ELEVATION: 867.5
DATE: 6/15/15
COMPLETION DEPTH: 20.0'

ASPHALT - 2 INCHES GRANULAR BASE - 6 INCHES

FILL: Very-stiff brown with dark-gray silty clay, little fine to coarse sand, trace fine to coarse gravel, few roots.

FILL: Hard brown mottled with gray silty clay, some fine to coarse sand, trace fine to coarse gravel.

FILL: Very-soft brown mottled with gray silty clay, some fine to coarse sand, trace fine to coarse gravel.

Medium-dense dark-gray fine to coarse sand, little fine to coarse gravel, trace silty clay, contains few cobbles.

Granite cobble 19.5' to 20.0'.

- Seepage encountered at 13.5'.
- Cobble encountered at 17.0'.
- No soil recovered during rock core attempt.
- Borings backfilled with cuttings mixed with bentonite chips.
- Boring locations and elevations provided by EMH&T.

WATER LEVEL: 6.5'
WATER NOTE: At Completion
DATE: 6/18/2015

Drill Rod Energy Ratio: 0.93
Last Calibration Date: R 11
Drill Rig Number: CME 750
### LOG OF BORING NO. B-239
**JOHN SHIELDS PARKWAY - PHASE 2**
**DUBLIN, OHIO**

**LOCATION:** 3' West  
**ELEVATION:** 870.2  
**DATE:** 6/12/15  
**COMPLETION DEPTH:** 9.5'

**DRILLING METHOD:** 4-1/2" O.D. Continuous-flight Auger  
**SAMPLER(S):** 2" O.D. Split-barrel Sampler

<table>
<thead>
<tr>
<th>ELEV.</th>
<th>DEPTH</th>
<th>SAMPLE</th>
<th>NUMBER</th>
<th>N°</th>
<th>EFFORT</th>
<th>SAMPLE</th>
<th>RX %</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>-30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>867.2</td>
<td>1</td>
<td>1/2/4/6</td>
<td>16</td>
<td>87</td>
<td>4</td>
<td>100</td>
<td>Very-stiff brown mottled with gray silty clay, little fine to coarse sand, trace fine to coarse gravel, contains few roots, silt seams.</td>
</tr>
<tr>
<td>2</td>
<td>867.2</td>
<td>2</td>
<td>4/3/4</td>
<td>11</td>
<td>100</td>
<td>3/3/5</td>
<td>12</td>
<td>Stiff brown mottled with gray silty clay, some fine to coarse sand, little fine to coarse gravel.</td>
</tr>
<tr>
<td>1</td>
<td>867.2</td>
<td>3</td>
<td>3/3/5</td>
<td>12</td>
<td>100</td>
<td>4</td>
<td>87</td>
<td>Hard brown to gray silty clay, some fine to coarse sand, little fine to coarse gravel.</td>
</tr>
</tbody>
</table>

- No seepage encountered.  
- Borings backfilled with cuttings mixed with bentonite chips.  
- Borings locations and elevations provided by EMH&T.

**SYMBOLS USED TO INDICATE TEST RESULTS**
- T - Gradation  
- G - Uncon Comp  
- Q - Triax Comp  
- S - Consol. Curves  
- D - Relative Dens (%)  
- W - Unit Dry Wt (pcf)  
- H - Penetrometer (tsf)  
- See - Unconsolidated

**WATER LEVEL:** "Dry"  
**WATER NOTE:** At Completion  
**DATE:** 6/12/2015

**Drill Rod Energy Ratio:** 0.93  
**Last Calibration Date:** R11  
**Drill Rig Number:** CME 750
**LOCATION:** See Plate 2 of Appendix.  
**ELEVATION:** 876.2  
**DATE:** 6/12/15  
**COMPLETION DEPTH:** 10.0'

**ASPHALT - 3-1/2 INCHES**

**GRANULAR BASE - 4-1/2 INCHES**

**POSSIBLE FILL:** Hard brown silty clay, some fine to coarse sand, trace fine to coarse gravel.

Stiff to very-stiff brown mottled with gray silty clay, some fine to coarse sand, trace fine gravel.

Very-soft dark-gray shale, similar to soil.

- Encountered seepage at 6.0'.
- Borings backfilled with cuttings mixed with bentonite chips.
- Boring locations and elevations provided by EMH&T.

---

## Test Results

<table>
<thead>
<tr>
<th>Water Level</th>
<th>Water Note</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Dry&quot;</td>
<td>At Completion</td>
<td>6/12/15</td>
</tr>
</tbody>
</table>

**Drill Rig Energy Ratio:** 0.93  
**Last Calibration Date:** R11  
**Drill Rig Number:** CME 750

---

**Symbols Used to Indicate Test Results**

- P - Gradation
- D - Uncon Comp
- Q - Triax Comp
- S - Penetrometer (tsf)
- W - Unit Dry Wt (pcf)
- R - Relative Dens (%)
ASPHALT - 2 INCHES  
GRANULAR BASE - 3 INCHES

Hard brown clayey silt, some fine to coarse sand, little fine to coarse gravel.

Stiff brown and gray silty clay, some fine to coarse sand, trace fine to coarse gravel.

Very-soft dark-gray shale, highly weathered, similar to silty clay.

- Encountered seepage at 6.0'.
- Borings backfilled with cuttings mixed with bentonite chips.
- Boring locations and elevations provided by EMH&T.

**LOCATION:** See Plate 2 of Appendix.  
**ELEVATION:** 884.5  
**DATE:** 6/12/15  
**COMPLETION DEPTH:** 6.5'

**DRILLING METHOD:** 4-1/2" O.D. Continuous-flight Auger  
**SAMPLER(S):** 2" O.D. Split-barrel Sampler

<table>
<thead>
<tr>
<th>ELEV</th>
<th>DEPTH FEET</th>
<th>SAMPLE NUMBER</th>
<th>SAMPLE EFFORT</th>
<th>N eo</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>14</td>
<td>71</td>
<td>67</td>
<td>ASPHALT - 2 INCHES</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>36/36</td>
<td>10</td>
<td></td>
<td>GRANULAR BASE - 3 INCHES</td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>3</td>
<td>8</td>
<td>67</td>
<td>Hard brown clayey silt, some fine to coarse sand, little fine to coarse gravel.</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>3/3/3</td>
<td>2</td>
<td></td>
<td>Stiff brown and gray silty clay, some fine to coarse sand, trace fine to coarse gravel.</td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>50-60&quot;R</td>
<td>3</td>
<td>33</td>
<td>Very-soft dark-gray shale, highly weathered, similar to silty clay.</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Encountered seepage at 6.0'.</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Borings backfilled with cuttings mixed with bentonite chips.</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Boring locations and elevations provided by EMH&amp;T.</td>
</tr>
</tbody>
</table>

**WATER LEVEL:** "Dry"  
**WATER NOTE:** At Completion  
**DATE:** 6/12/15

**SYMBOLS USED TO INDICATE TEST RESULTS**

- Gradation
- Uncon Comp
- Triax Comp
- Consol.
- See
- Penetrometer (tsf)
- Separated
- Unit Dry Wt (pcf)
- Relative Dens (%)
TOPSOIL - 4 INCHES
FILL: Hard brown mottled with dark-gray silty clay, some fine to coarse sand, little fine to coarse gravel, few roots.

FILL: Stiff brown mottled with gray silty clay, little fine to coarse sand, trace fine to coarse gravel, few roots.

- Encountered seepage at 9.0'.
- Borings backfilled with cuttings mixed with bentonite chips.
- Boring locations and elevations provided by EMH&T.
<table>
<thead>
<tr>
<th>BORING Id.</th>
<th>G' int.</th>
<th>MC</th>
<th>LL</th>
<th>PL</th>
<th>PI</th>
<th>GRADATION</th>
<th>COMPACTION</th>
<th>TRIAXIAL</th>
<th>DIRECT SHEAR</th>
<th>PERMEABILITY</th>
<th>COMPRESSION</th>
<th>SPECIFIC</th>
<th>UNIT WEIGHT</th>
<th>REMOLED</th>
<th>STANDING</th>
<th>WET</th>
<th>DENSITY</th>
<th>LOI</th>
<th>RELATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-232</td>
<td>6.75</td>
<td>21.4</td>
<td>44</td>
<td>18</td>
<td>26</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B-234</td>
<td>1.75</td>
<td>20.5</td>
<td>44</td>
<td>21</td>
<td>23</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B-237</td>
<td>1.75</td>
<td>29.0</td>
<td>55</td>
<td>24</td>
<td>31</td>
<td>*</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B-239</td>
<td>4.25</td>
<td>20.8</td>
<td>31</td>
<td>17</td>
<td>14</td>
<td>*</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B-240</td>
<td>4.25</td>
<td>21.4</td>
<td>27</td>
<td>15</td>
<td>12</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B-241</td>
<td>1.75</td>
<td>13.7</td>
<td>22</td>
<td>13</td>
<td>9</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B-242</td>
<td>3.50</td>
<td>20.2</td>
<td>39</td>
<td>19</td>
<td>20</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>
**ATTERBERG LIMITS’ RESULTS - ASTM D4318**

**Specimen Id.** | **Depth** | **MC** | **LL** | **PL** | **PI** | **Fines** | **ASTM Classification**
--- | --- | --- | --- | --- | --- | --- | ---
B-232 | 6.75 | 21 | 44 | 18 | 26 | 64.9 | SANDY LEAN CLAY CL
B-234 | 1.75 | 20 | 44 | 21 | 23 | 94.9 | LEAN CLAY CL
B-237 | 1.75 | 29 | 55 | 24 | 31 | 81.9 | FAT CLAY with SAND CL
B-239 | 4.25 | 21 | 31 | 17 | 14 | 68.5 | SANDY LEAN CLAY CL
B-240 | 4.25 | 21 | 27 | 15 | 12 | 63.0 | SANDY LEAN CLAY CL
B-241 | 1.75 | 14 | 22 | 13 | 9 | 57.1 | SANDY LEAN CLAY CL
B-242 | 3.50 | 20 | 39 | 19 | 20 | 65.3 | SANDY LEAN CLAY CL

**PROJECT LOCATION**

**JOHN SHIELDS PARKWAY - PHASE 2**

**Dublin, Ohio**

**Job No.**

1117-15-012A

**Date**

7/14/15

PLATE 18
Brown silty clay, some fine to coarse sand, little fine to coarse gravel, slightly organic.

SANDY LEAN CLAY CL

<table>
<thead>
<tr>
<th>Specimen Identification - Depth</th>
<th>Classification</th>
<th>MC%</th>
<th>LL</th>
<th>PL</th>
<th>PI</th>
<th>Cc</th>
<th>Cu</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-232 6.0' to 6.9'</td>
<td>Brown silty clay, some fine to coarse sand, little fine to coarse gravel, slightly organic.</td>
<td>21</td>
<td>44</td>
<td>18</td>
<td>26</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ASTM D422  | GRADATION CURVE  | PROJECT LOCATION  | JOB NO.  | DATE  |
<table>
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<tbody>
<tr>
<td></td>
<td></td>
<td>JOHN SHIELDS PARKWAY - PHASE 2</td>
<td>1117-15-012A</td>
<td>7/14/15</td>
</tr>
</tbody>
</table>
** lean clay cl**

<table>
<thead>
<tr>
<th>Specimen Identification - Depth</th>
<th>Classification</th>
<th>MC%</th>
<th>LL</th>
<th>PL</th>
<th>PI</th>
<th>Cc</th>
<th>Cu</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-234 S-1 1.0' to 1.8'</td>
<td>Brown silty clay, trace fine to coarse sand.</td>
<td>20</td>
<td>44</td>
<td>21</td>
<td>23</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Grain Size in Millimeters

<table>
<thead>
<tr>
<th>U.S. SIEVE OPENING IN INCHES 1</th>
<th>U.S. SIEVE NUMBERS</th>
<th>HYDROMETER</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.00</td>
<td>10</td>
<td>0.1</td>
</tr>
<tr>
<td>1.00</td>
<td>40</td>
<td>0.001</td>
</tr>
<tr>
<td>1.00</td>
<td>200</td>
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</tr>
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</table>

### Classification Table

<table>
<thead>
<tr>
<th>BOULDERS</th>
<th>COBBLES</th>
<th>GRAVEL</th>
<th>SAND</th>
<th>SILT OR CLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>coarse</td>
<td>fine</td>
<td>coarse</td>
</tr>
</tbody>
</table>

### U.S. Sieve Numbers

- 23: 1.00 to 1.8'

### Project Details

- **Project Location:** John Shields Parkway - Phase 2
- **Job No.:** 1117-15-012A
- **Date:** 7/14/15

### Gradation Curve

- **ASTM D422**

---

**PLATE 20**
Brown mottled with gray silty clay, little fine to coarse sand, trace fine gravel, slightly organic.

<table>
<thead>
<tr>
<th>Specimen Identification - Depth</th>
<th>Classification</th>
<th>MC%</th>
<th>LL</th>
<th>PL</th>
<th>PI</th>
<th>Cc</th>
<th>Cu</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-237 S-1 1.0' to 2.0'</td>
<td>Brown mottled with gray silty clay, little fine to coarse sand, trace fine gravel, slightly organic.</td>
<td>29</td>
<td>55</td>
<td>24</td>
<td>31</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FAT CLAY with SAND CH

<table>
<thead>
<tr>
<th>Specimen Identification - Depth</th>
<th>D100</th>
<th>D95</th>
<th>D60</th>
<th>D50</th>
<th>D10</th>
<th>%Gravel</th>
<th>%Sand</th>
<th>%Silt</th>
<th>%Clay</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-237 S-1 1.0' to 2.0'</td>
<td>19.0000</td>
<td>1.0828</td>
<td></td>
<td></td>
<td>1.3</td>
<td>16.9</td>
<td>81.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Brown mottled with gray silty clay, some fine to coarse sand, trace fine to coarse gravel.

SANDY LEAN CLAY CL

<table>
<thead>
<tr>
<th>Specimen Identification - Depth</th>
<th>Classification</th>
<th>MC%</th>
<th>LL</th>
<th>PL</th>
<th>PI</th>
<th>Cc</th>
<th>Cu</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-239 S-2 3.5' to 5.0'</td>
<td></td>
<td>21</td>
<td>31</td>
<td>17</td>
<td>14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specimen Identification - Depth</th>
<th>D100</th>
<th>D95</th>
<th>D60</th>
<th>D50</th>
<th>D10</th>
<th>%Gravel</th>
<th>%Sand</th>
<th>%Silt</th>
<th>%Clay</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-239 S-2 3.5' to 5.0'</td>
<td>19.0000</td>
<td>4.7775</td>
<td></td>
<td></td>
<td></td>
<td>5.0</td>
<td>26.4</td>
<td>68.5</td>
<td></td>
</tr>
</tbody>
</table>
Brown mottled with gray silty clay, some fine to coarse sand, trace fine gravel.

**SANDY LEAN CLAY CL**

<table>
<thead>
<tr>
<th>Specimen Identification - Depth</th>
<th>Classification</th>
<th>MC%</th>
<th>LL</th>
<th>PL</th>
<th>PI</th>
<th>Cc</th>
<th>Cu</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-240 S-2 3.5' to 4.7'</td>
<td></td>
<td>21</td>
<td>27</td>
<td>15</td>
<td>12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specimen Identification - Depth</th>
<th>D100</th>
<th>D95</th>
<th>D60</th>
<th>D50</th>
<th>D10</th>
<th>%Gravel</th>
<th>%Sand</th>
<th>%Silt</th>
<th>%Clay</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-240 S-2 3.5' to 4.7'</td>
<td>12.5000</td>
<td>4.5350</td>
<td></td>
<td></td>
<td></td>
<td>4.7</td>
<td>32.3</td>
<td></td>
<td>63.0</td>
</tr>
</tbody>
</table>
Brown clayey silt, some fine to coarse sand, little fine to coarse gravel.

SANDY LEAN CLAY CL

<table>
<thead>
<tr>
<th>Specimen Identification - Depth</th>
<th>Classification</th>
<th>MC%</th>
<th>LL</th>
<th>PL</th>
<th>PI</th>
<th>Ce</th>
<th>Cu</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-241 S-1 1.0' to 2.0'</td>
<td>Brown clayey silt, some fine to coarse sand, little fine to coarse gravel.</td>
<td>14</td>
<td>22</td>
<td>13</td>
<td>9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specimen Identification - Depth</th>
<th>D100</th>
<th>D95</th>
<th>D60</th>
<th>D50</th>
<th>D10</th>
<th>%Gravel</th>
<th>%Sand</th>
<th>%Silt</th>
<th>%Clay</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-241 S-1 1.0' to 2.0'</td>
<td>25.0000</td>
<td>16.8184</td>
<td>0.1007</td>
<td>12.7</td>
<td>30.1</td>
<td>57.1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PLATE 24
Brown mottled with dark gray silty clay, some fine to coarse sand, little fine to coarse gravel.

**Specimen Identification - Depth**: B-242 S-2 3.5' to 4.2'

**Classification**: Brown mottled with dark gray silty clay, some fine to coarse sand, little fine to coarse gravel.

**SANDY LEAN CLAY CL**

**Specimen Identification - Depth**: B-242 S-2 3.5' to 4.2'

**ASTM D422**

**PROJECT LOCATION**: JOHN SHIELDS PARKWAY - PHASE 2

**JOB NO.**: 1117-15-012A

**DATE**: 7/14/15
APPENDIX B
### GROUND WATER OBSERVATION

- **5.0 FEET BELOW SURFACE AT COMPLETION**
- **__ FEET BELOW SURFACE AT 24 HOURS**
- **__ FEET BELOW SURFACE AT ___ HOURS**

### LOCATION OF BORING

<table>
<thead>
<tr>
<th>DEPTH (fsf)</th>
<th>Pocket Penetrometer</th>
<th>Sample Depths</th>
<th>Type of Sample</th>
<th>Blows per 6&quot;</th>
<th>Moisture Density or Consist.</th>
<th>Strata Change Depth*</th>
<th>SOIL IDENTIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0-1.5</td>
<td>SS</td>
<td>8</td>
<td>8</td>
<td>Damp</td>
<td>0.8 Stone (10&quot;)</td>
<td>Brown Mottled Gray Lean Clay (CL) - stained, moderately plastic</td>
<td></td>
</tr>
<tr>
<td>2.0-3.5</td>
<td>SS</td>
<td>2</td>
<td>3</td>
<td>Moist</td>
<td>4.0</td>
<td>Brown Lean Clay with Sand (CL) - moderately plastic, little fine to coarse sand, trace gravel (glacial till); random silty sand and gravel layers noted</td>
<td></td>
</tr>
<tr>
<td>4.0-5.5</td>
<td>SS</td>
<td>3</td>
<td>4</td>
<td>Moist</td>
<td>7.0 Water Seepage at 7'</td>
<td>Brown Well Graded Sand with Silt and Gravel (SW-SM)</td>
<td></td>
</tr>
<tr>
<td>8.5-10.0</td>
<td>SS</td>
<td>3</td>
<td>3</td>
<td>Wet</td>
<td></td>
<td>limestone fragments and cobbles</td>
<td></td>
</tr>
<tr>
<td>13.5-15.0</td>
<td>SS</td>
<td>7</td>
<td>8</td>
<td>Wet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* The stratification lines represent the approximate boundary between soil types and the transition may be gradual.

720 Greencrest Drive  •  Westerville, Ohio 43081  •  614-895-1400
**LOG OF BORING NO. B-230**  
DALE & TULLER RIDGE DRIVE CONNECTOR  
DUBLIN, OHIO

**LOCATION:** See Plate 2 of Appendix  
**ELEVATION:** 843.3  
**DATE:** 4/15/14  
**COMPLETION DEPTH:** 8.0'

**DRILLING METHOD:** 2" O.D. Split-barrel Sampler  
**SAMPLER(S):** 4-1/2" O.D. Continuous-flight Auger

<table>
<thead>
<tr>
<th>ELEV.</th>
<th>DEPTH, FEET</th>
<th>SAMPLE NUMBER</th>
<th>SAMPLE EFFORT</th>
<th>N o</th>
<th>SAMPLE REC</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>842.6</td>
<td>8</td>
<td>8</td>
<td>25</td>
<td>87</td>
<td>8</td>
<td>Medium-dense brown fine to coarse gravel, &quot;and&quot; fine to coarse sand, trace silt, trace clay, contains limestone fragments.</td>
</tr>
<tr>
<td>841.8</td>
<td>8</td>
<td>1</td>
<td>17</td>
<td>100</td>
<td>1</td>
<td>Stiff brown silty clay, some fine to coarse sand, trace fine to coarse gravel.</td>
</tr>
<tr>
<td>837.5</td>
<td>5</td>
<td>2</td>
<td>6</td>
<td>6</td>
<td>100</td>
<td>Medium-dense brown fine to coarse gravel, &quot;and&quot; fine to coarse sand, little silt.</td>
</tr>
<tr>
<td>836.8</td>
<td>7</td>
<td>7</td>
<td>25</td>
<td>87</td>
<td>7</td>
<td>Stiff brown silty clay, some fine to coarse sand, trace fine to coarse gravel.</td>
</tr>
<tr>
<td>835.3</td>
<td>7</td>
<td>11</td>
<td>28</td>
<td>73</td>
<td>11</td>
<td>Medium-dense brown fine to coarse gravel, &quot;and&quot; fine to coarse sand, trace silt.</td>
</tr>
</tbody>
</table>

- No seepage encountered.  
- Elevations provided by EMH&T.

**WATER LEVEL:** "Dry"  
**WATER NOTE:** At Completion  
**DATE:** 4/15/14  
**JOB:** 1171-13-042F

**SYMBOLS USED TO INDICATE TEST RESULTS**
- G - Gradation  
- O - Uncon Comp  
- T - Triax Comp  
- S - Consol.  
- See - See  
- H - Penetrometer (tsf)  
- Separate  
- W - Unit Dry Wt (pcf)  
- Curves  
- D - Relative Dens (%)  

**Drill Rod Energy Ratio:** 0.84  
**Last Calibration Date:** 2/19/2013  
**Drill Rig Number:** S&M
### Specimen Identification - Depth

| B-230 | S-2    | 3.5' to 5.0' | Brown fine to coarse gravel, "and" fine to coarse sand, trace silt, trace clay. |

### Classification

| B-230 | S-2    | 3.5' to 5.0' | Brown fine to coarse gravel, "and" fine to coarse sand, trace silt, trace clay. |

### Gradation Curve

<table>
<thead>
<tr>
<th>Grain Size in Millimeters</th>
<th>3</th>
<th>2</th>
<th>1.5</th>
<th>3/4</th>
<th>1/2</th>
<th>4</th>
<th>10</th>
<th>40</th>
<th>70</th>
<th>200</th>
<th>HYDROMETER</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Sieve Opening in Inches</td>
<td>3</td>
<td>2</td>
<td>1.5</td>
<td>3/4</td>
<td>1/2</td>
<td>4</td>
<td>10</td>
<td>40</td>
<td>70</td>
<td>200</td>
<td>HYDROMETER</td>
</tr>
</tbody>
</table>

### Physical Properties

<table>
<thead>
<tr>
<th>Material</th>
<th>U.S. Sieve Numbers</th>
<th>U.S. Sieve Opening in Inches</th>
<th>Hydrometer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basalt</td>
<td>10</td>
<td>0.01</td>
<td>51.2</td>
</tr>
<tr>
<td>Gneiss</td>
<td>10</td>
<td>0.01</td>
<td>51.2</td>
</tr>
<tr>
<td>Slate</td>
<td>10</td>
<td>0.01</td>
<td>51.2</td>
</tr>
</tbody>
</table>

### Additional Information

- **ASTM D422**
- **Gradation Curve**
- **Project Location**: Dale & Tuller Ridge Drive Connector
- **Job No.**: 1171-13-042F
- **Date**: 5/15/14
F. STANDARD DRAWINGS
NOTES:

APPROVED MONUMENT BOX TYPES

1. NEENAH R-1968 TYPE 36-B (ADJUSTABLE)
2. EAST JORDAN IRON WORKS, INC. 8371 (ADJUSTABLE)
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 5% (1:20)
   TO 7.7% (1:13).

4. RAMP CROSS SLOPE - THE MAXIMUM CROSS SLOPE SHALL BE 1.56%
   (1:64, 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
   1.56% (1:64) 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.
   C. LANDING AT INTERSECTING SIDEWALKS - WHEREVER SIDEWALKS
   INTERSECT THERE SHALL BE A LANDING MEETING THE ABOVE REQUIREMENTS.

Date: 05/01/2014  

(GENERAL NOTES CONTINUED ON SHEET 2)  

City of Dublin  
ENGINEERING  

STANDARD DRAWING  

CURB RAMP GENERAL NOTES  

SHEET 1 OF 2  

DRAWING NO. PD-02
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. DETECTABLE 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.
NOTES:
1. DETECTABLE WARNINGS SHALL BE PROVIDED WHEREVER A CURB RAMP CROSSES A VEHICULAR WAY EXCLUDING UNSIGNALED 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" BEHIND THE BACK OF CURB.

4. DETECTABLE WARNINGS SHALL BE ADA SOLUTIONS, CAST IN PLACE REPLACEABLE TILE OR APPROVED EQUAL. BRICK RED IN COLOR FOR USE ON CONCRETE RAMPS AND BLACK IN COLOR FOR USE ON BRICK PAVER RAMPS.
* SEE DRAWING RD-03 FOR GUTTER TRANSITION AT CURB RAMP.
** 10" AT COMMERCIAL DRIVE ENTRANCES.
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/SHARED USE 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 SHARED USE 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.
HORIZONTAL CLEARANCE 2' MIN. FROM EDGE OF SHARED-USE PATH TO CLOSEST POINT OF OBSTRUCTION, OR AS DIRECTED BY CITY ENGINEER.

STANDARD SHARED-USE PATH WIDTH SHALL BE 8'-0" & HEAVY DUTY SHARED-USE PATH WIDTH SHALL BE 10'-0" UNLESS OTHERWISE SPECIFIED IN APPROVED CONSTRUCTION DRAWINGS.

HAND TAMPER AT 45°
SLOPE 3/16" PER. FT.

1. 1-1/2" ITEM 448, ASPHALT CONCRETE, SURFACE COURSE TYPE 1 (MEDIUM TRAFFIC), PG. 64-22
2. 3" ITEM 301, ASPHALT CONCRETE BASE
3. 6" ITEM 304, AGGREGATE BASE
4. ITEM 204, SUBGRADE COMPACTION
5. 4 1/2" ITEM 301, ASPHALT CONCRETE BASE

1. ALL TOPSOIL SHALL BE REMOVED FROM SUB GRADE AREAS. ITEM 204 SHALL BE COMPACTED TO NO LESS THAN 98% OF MAX. DRY DENSITY. EXCESS EXCAVATED MATERIAL SHALL BE REMOVED FROM THE SITE.

2. ALL DISTURBED AREAS SHALL BE SEeded AND MULCHED. SEED MIXTURE requires THE APPROVAL OF THE CITY ENGINEER.

3. PAVEMENT MARKINGS AND SIGNAGE SHALL CONFORM TO OHIO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

4. SHARED-USE PATHS CROSSING CONCRETE RESIDENTIAL DRIVEWAY APPROACHES SHALL BE 6" PC CONCRETE ACROSS THE WIDTH OF THE DRIVEWAY APPROACH, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER. SHARED-USE PATHS CROSSING RESIDENTIAL DRIVEWAY APPROACHES SHALL MATCH THE THICKNESS AND CROSS-SECTION OF THE DRIVEWAY APPROACH OR 8" PC CONCRETE, WHICHEVER IS GREATER, AS APPROVED BY THE CITY ENGINEER.

5. FOR GEOMETRIC STANDARDS FOR CURB RAMP REFER TO DUBLIN STD. DWG. PD-01.
12" MIN. DIA. CONCRETE WITH ADS FLARED END SECTION AND DISSIMILAR COUPLING.
(IF COVER IS LESS THAN 12", CONCRETE ENCASE ACCORDING TO ITEM 901)

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 1/4" ASPHALT ITEM 402
   1 3/4" ASPHALT ITEM 404
SECTION A-A

SECTION B-B

Date: 05/01/2014
SEE SHEET 5 OF 9 OF CITY OF DUBLIN STANDARD DRAWING RD-07 FOR ADDITIONAL REQUIREMENTS FOR BRICK PAVERS.

SECTION A–A

RESIDENTIAL DRIVEWAY APPROACH FOR COMBINATION CONCRETE AND BRICK PAVERS
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 WITHDRAWN 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
**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.**

---

2' 8' MIN. 4' MIN.

5'-0"

3/16" PER FT. (TYP.)

8" CONCRETE (ITEM 499 CLASS "C")

8" CONCRETE (ITEM 499 CLASS "C")

TAPER CURB HEIGHT TO 0" AT SIDEWALK

SECTION A-A

SLOPE DRIVEWAY AWAY FROM RIGHT-OF-WAY

COMPACTED (ITEM 304 & 204) OR NO. 57 STONE

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: 05/01/2014

City of Dublin ENGINEERING

STANDARD DRAWING

DIVIDED COMMERCIAL DRIVEWAY APPROACH FOR STREETS WITH CURB & GUTTER

SHEET 6 OF 9

DRAWING NO. RD-07
**MAX. WIDTH 30'-0" W/O MEDIAN**

4' OR 5' SIDEWALK OR 8' BIKE PATH

12'-0"

10'-0"

LANDSCAPED MEDIAN (TYP.)

2'-0" (TYP.)

6'-0" (TYP.)

25' R

DITCH

USE NO CURB BETWEEN RIGHT-OF-WAY LINE AND EDGE OF PAVEMENT

**12" MIN. DIA. REINFORCED CONCRETE PIPE CLASS V WITH ADS FLARED END SECTION AND N-12 ADAPTER FITTING OR EQUIVALENT.**

**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.**

**SLOPE DRIVEWAY AWAY FROM RIGHT-OF-WAY**

8" CONCRETE (ITEM 499 CLASS "C") OR NO. 57 STONE.

COMPACTED GRANULAR MATERIAL (ITEM 304 & 204)

8" CONCRETE (ITEM 499 CLASS "C")

12" MIN. DIA. REINFORCED CONCRETE PIPE CLASS V WITH ADS FLARED END SECTION AND N-12 ADAPTER FITTING OR EQUIVALENT.

(If cover is less than 12", concrete encase according to Item 901)

**SECTION A-A**

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

Date: 05/01/2014
**NOTE:** THIS SHALL BE 10'-0" FOR A BIKEPATH CROSSING CROSS SLOPE 1:66.

**SECTION A-A**

- 4" CONCRETE (ITEM 499 CLASS "C") (NOTE 2)
- STRAIGHT 18" CONCRETE CURB (ITEM 609)
- 8" CONCRETE (ITEM 499 CLASS "C")
- ITEM 204 TYP.

**SECTION B-B**

- 3/16" / FT.
- 4" CONCRETE (CLASS "C") (NOTE 2)
- ITEM 204 TYP.
- 8" CONCRETE (ITEM 499 CLASS "C")
- #67 CRUSHED GRAVEL (TYP.)
- STRAIGHT 18" CONCRETE CURB (ITEM 609)
- R/W
- SLOPE DRIVEWAY AWAY FROM RIGHT-OF-WAY

**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.

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

---

**Date:** 05/01/2014

**City of Dublin ENGINEERING**

**STANDARD DRAWING**

**RIGHT IN, RIGHT OUT COMMERCIAL APPROACH**

**SHEET 8 OF 9**

**DRAWING NO. RD-07**
**SECTION A-A**

- 12" MIN. DIA. REINFORCED CONCRETE PIPE CLASS V WITH ADS FLARED END SECTION AND N-12 ADAPTER FITTING OR EQUIVALENT.

**NOTE:** THIS SHALL BE 10'-0" FOR A BIKEPATH CROSSING CROSS SLOPE 1.56%.

**SECTION B-B**

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.

Date: 05/01/2014
2" RAIN CAP
(6-ft. min. with plaque)

7" X 7" GALVANIZED SQUARE POST WITH DIE CUT KNOCKOUTS

2½" X 2½" X 12" OVER SLEEVE (GALVANIZED) GOES OVER BOTH THE ANCHOR SLEEVE AND POST, ATTACHED BY 2 DRIVE RIVETS.

2½" X 2½" X 36" ANCHOR SLEEVE, GALVANIZED 3½" BELOW GRADE.

STANDARD SIGN

ONE WAY

STANDARD SIGN WITHIN ISLAND

SIGN FACE ACCORDING TO ODOT SIGN DESIGN MANUAL REFLECTIVE SHEETING, ACCORDING TO ASTM D-4956, TYPE XI.

SIGN FACE ACCORDING TO ODOT SIGN DESIGN MANUAL. COMBINE CHEVRONS AND ONE WAY ON A SINGLE BLANK REFLECTIVE SHEETING, ACCORDING TO ASTM D-4956, TYPE XI.

2½" X 2½" GALVANIZED SQUARE POST WITH DIE CUT KNOCKOUTS

2½" X 2½" X 12" OVER SLEEVE (GALVANIZED) GOES OVER BOTH THE ANCHOR SLEEVE AND POST, ATTACHED BY 2 DRIVE RIVETS.

2½" X 2½" X 36" ANCHOR SLEEVE, GALVANIZED 3½" BELOW GRADE.

FINISHED GRADE

FINISHED GRADE

Date: 04/10/2015

City of Dublin
ENGINEERING

TYPICAL STREET SIGNS

SHEET 1 OF 2

DRAWING NO. RD-10
2" BROWN RAIN CAP

9" to 12" (see table)

48" Maximum

DUAL SIDED ALUMINUM BLANK CUT TO LENGTH OF STREET NAME.
3M - RUSSET BROWN 7725-29 VINYL OR APPROVED EQUAL.

2 BROWN SQUARE SADDLE BRACKETS ATTACHED WITH 8 DRIVE RIVETS.

2 BROWN SIGN EXTRUSION BARS CUT TO THE LENGTH OF THE SIGN.

BOTH THE SADDLE BRACKETS AND SIGN EXTRUSION BARS ARE BY POP RIVETS ACCORDING TO THE LENGTH OF SIGN.

NOTE: ILLUSTRATION BASED ON AREAS OUTSIDE THE HISTORIC DISTRICT. WITHIN THE HISTORIC DISTRICT, SIGN FACE SHALL BE BLACK LETTERING ON WHITE BACKGROUND. ALL BROWN ELEMENTS MUST BE FEDERAL STANDARD COLOR, FEDERAL BLACK 27038.

2" X 2" X 12" GALVANIZED POWDER COATED FEDERAL BROWN POST, FEDERAL COLOR 20040 WITH DIE CUT KNOCKOUTS

2 1/4" X 2 1/4" X 12" OVER SLEEVE (GALVANIZED) GOES OVER BOTH THE ANCHOR SLEEVE AND POST. ATTACHED BY 2 DRIVE RIVETS.

FINISHED GRADE

2 1/4" X 2 1/4" X 36" ANCHOR SLEEVE, GALVANIZED 32" BELOW GRADE.

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<thead>
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<th>SPEED LIMIT (MPH)</th>
<th>LETTERING HEIGHT (IN)</th>
<th>BLANK HEIGHT (IN)</th>
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</table>

STANDARD STREET NAME SIGN

Date: 04/10/2015

City of Dublin ENGINEERING

TYPICAL STREET SIGNS

SHEET 2 OF 2 DRAWING NO. RD-10
CLASS "C" PORTLAND CEMENT CONCRETE PER ITEM 499

1/4" RADIUS

3" RADIUS

6"

18"

13"

6"

6"

7"

#57 CRUSHED AGGREGATE

4" PIPE UNDERDRAIN PER ODOT ITEM 707.31 OR 707.33

PAVEMENT AS SPECIFIED BY PLAN
**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: 5/1/2014

City of Dublin
Engineering

Transformer Base

Sheet 1 of 2

Drawing 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. (SINGLE PHASE = 1, DOUBLE PHASE = 2 PER POLE)

"B"  UNFUSED INLINE 7 CONNECTOR KIT TYPE III WITH WATERPROOF BOOTS AND BREAKAWAY RECEPTACLE, ELASTIMOLD 83 SERIES OR HOMAC DY SERIES. (SINGLE PHASE = 2, DOUBLE PHASE = 1 PER POLE)

"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: 5/1/2014
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: 5/1/2014

Pole Foundation

Standard Drawing

Sheet 1 of 2

Drawing No. SL-04

City of Dublin Engineering
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, ALKALYOXYSILANE 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. OVERRIZE 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.
* 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 PROCUTOR IN LAYERS NOT EXCEED 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 - 3" (79mm) WIDE RED PLASTIC TAPE WITH BLACK LETTERS READING "CAUTION BURIED ELECTRIC LINE BELOW". BURY ABOVE CONDUIT 6" (158mm) MAX. BELOW GRADE. RUN CONTINUOUS IN ALL TRENCHES NOT COVERED BY PAVEMENT.

Date: 5/1/2014

City of Dublin
ENGINEERING

STANDARD DRAWING

TRENCHES

SHEET 1 OF 3

DRAWING 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 2'-0" (610mm) 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 613, Type 2 or Item 912 compacted granular backfill.

**MATERIALS** - Shall comply with ODOT Construction and Material Specifications Section 725.05.

Date: 5/1/2014

City of Dublin Engineering

TRENCHES

Sheet 2 of 3

Drawing 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.
SERVICE ENCLOSURE HOFFMAN #A36H3012SSLP3PT OR APPROVED EQUAL

TOP VIEW

SIDE VIEW

1" CHAMFER

FINISHED GRADE

4"x4" WELDED WIRE MESH WITH 3" COVER (MIN.)

2" CONDUIT & WIRE TO FLOOR STAND KIT HOFFMAN #AFK0612 OR APPROVED EQUAL PROPOSED STREET LIGHTS BY CONTRACTOR

GROUND ROD

2" CONDUIT & WIRE TO POWER COMPANY TRANSFORMER BY CONTRACTOR

2' 0"

6" MIN.

2' 0"

CONCRETE SERVICE ENCLOSURE PAD

2" CONDUIT WITH PULL STRINGS FOR FUTURE LIGHTING CIRCUIT. CAP AND STAKE LOCATION

3' 0" x 1' 6"

Date: 5/1/2014

City of Dublin ENGINEERING

LIGHTING CONTROLLER

SHEET 1 OF 4

DRAWING NO. SL-13
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 PHOTOCCELL 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
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 PHOTOCCELL 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 8903SPC61V81CF4G102TY1
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
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
PLAN VIEW

HEADWALL

WIDTH = WIDTH OF HEADWALL (4' MINIMUM OR AS APPROVED)

LENGTH OF RIPRAPH OUTLET PROTECTION

PROFILE

SLOPE

MIRAFI 500X WOVEN POLYPROPYLENE GEOTEXTILE OR EQUIVILENT.

ROCK RIPRAPH APRON THICKNESS

NOTES:
1. MINIMUM LENGTH TO BE 8 FEET, 5 FEET IF PIPE IS SUBMERGED.
2. MINIMUM THICKNESS OF 18 INCHES.
3. RIP-RAP SIZE TO BE DETERMINED BY OUTLET FLOW VELOCITY
NOTES:

PAINT AND PRIMER TO BE SHOP APPLIED.

PAINT: SHERWIN WILLIAMS - POLANE SP POLYURETHANE ENAMEL, OR APPROVED EQUAL

PAINT COLOR: VISTA GREEN NO. 80-105 (RGB#: 106,127,96), OR APPROVED EQUAL

PRIMER: AS SPECIFIED BY THE MANUFACTURER

PRIVATE HYDRANTS SHALL BE WHITE NO. D876967-31-1 OR 80-1 WITH VISTA GREEN TOP AND CAP

ALL HYDRANTS WILL COME EQUIPPED WITH A STORZ NOZZLE.

<table>
<thead>
<tr>
<th>MANUFACTURER</th>
<th>PRODUCT NO.</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMERICAN FLOW CONTROL</td>
<td>MARK 73 SERIES</td>
<td>&quot;NO DRAIN&quot; ONLY</td>
</tr>
<tr>
<td>CLOW CORPORATION</td>
<td>EDDY &quot;F2641&quot;</td>
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</tr>
<tr>
<td>MUELLER CO.</td>
<td>SUPER CENTURION 200</td>
<td></td>
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<tr>
<td>KENNEDY</td>
<td>K-81A</td>
<td></td>
</tr>
<tr>
<td>AMERICAN AVK</td>
<td>NO. 2760</td>
<td></td>
</tr>
</tbody>
</table>

Date: 05/01/2014
G. SCOPE OF WORK

Construction of 3100 feet of new roadway including granite curb, granite edged planting beds, 66,320 square feet of brick sidewalk, parking areas with permeable pavers, 98 trees and 74,000 plantings, new street lighting and AEP duct bank.

The cost estimate for the Project is $8,691,000.00.
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: JOHN SHIELDS PARKWAY - PHASE 2

The CITY OF DUBLIN (Owner) has considered the Bid submitted by you for the above-described work in response to the Legal Notice dated January 12, 2016.

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 __________________, 2016.

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 _________________________, 2016

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, JOHN SHIELDS PARKWAY - PHASE 2 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: JOHN SHIELDS PARKWAY - PHASE 2

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 ________________________, 2016.

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, JOHN SHIELDS PARKWAY - PHASE 2 project located at John Shields Parkway east of Dale Drive.

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.

_____________________________    ____________________
Paul A. Hammersmith P.E.                    Date
Director of Engineering / City Engineer

The foregoing instrument was acknowledged before me this ____ , day of ________________________, 20____ by Paul A. Hammersmith P.E., Director of Engineering / City Engineer for the CITY OF DUBLIN, OHIO.

Signature and Seal of person taking acknowledgement:
**F. PREVAILING WAGE BID TABULATION SHEET**

Please print and complete this form. Keep it with your records until the contract has been awarded. Once the contract has been officially awarded, check mark which company was awarded the contract for the project and send or fax a copy to the Wage and Hour Division at 614-728-8639.

<table>
<thead>
<tr>
<th>Contracting Public Authority: the CITY OF DUBLIN, OHIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Name: JOHN SHIELDS PARKWAY - PHASE 2</td>
</tr>
<tr>
<td>Project No.: 15-015.0-CIP</td>
</tr>
</tbody>
</table>

Contract Description: **X**General □HVAC □Electrical □Plumbing □Asbestos □Other________

<table>
<thead>
<tr>
<th>Awarded to (check)</th>
<th>List of Bidding Contractors</th>
<th>Total Bid Amount</th>
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Submitted By

<table>
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<tr>
<th>Print Name: Paul A. Hammersmith P.E.</th>
<th>Title: Director of Engineering / City Engineer</th>
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</thead>
<tbody>
<tr>
<td>Telephone Number: 614-410-4672</td>
<td>Fax: 614-410-4699</td>
</tr>
<tr>
<td>Mandy K. Bishop P.E., S.I.</td>
<td>Mandy K. Bishop P.E., S.I.</td>
</tr>
</tbody>
</table>

Signature: __________________________  
Paul A. Hammersmith, P.E.

Date:
V. ADDITIONAL PROJECT FORMS
A. PAYROLL INFORMATION

PROJECT: JOHN SHIELDS PARKWAY - PHASE 2

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 ____________________, 2016, and ending on the ___ day of ____________________, 2016, 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.
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:

<table>
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<tr>
<th>Exception (Craft):</th>
<th>Explanation:</th>
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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: JOHN SHIELDS PARKWAY - PHASE 2

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 JOHN SHIELDS PARKWAY - PHASE 2 Project located at John Shields Parkway east of Dale Drive 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 ________________, 2016.

____________________________________
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: JOHN SHIELDS PARKWAY - PHASE 2

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 waiver 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://dublinohiousa.gov/bids-and-requests-for-proposals/ when downloading the project documents online. 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.