ADVERTISEMENT FOR BIDS

Wayne Local School District Library, dba Mary L. Cook Public Library
Waynesville, Ohio
Mary L. Cook Public Library Community Playscape

General Notice

Mary L. Cook Public Library (Owner) is requesting Bids for the construction of the following Project:

Mary L. Cook Public Library Community Playscape

Bids for the construction of the Project will be received at the **Mary L Cook Public Library** located at **381 Old Stage Road, Waynesville, Ohio, 45068**, until **Wednesday, November 5th** at **12 PM** local time. At that time the Bids received will be **publicly** opened.

The Project includes the following Work:

Site Preparation, Demolition, Grading and Drainage, Stormwater, Site Furnishings, Sprayground Equipment and Mechanical System (if selected), Playground Equipment, Tree Protection, Landscape, Restroom Facility, Sidewalks and Parking Lot Work for the Community Playscape**.**

Bids are requested for the following Contract: **EJCDC C-520 Mary L. Cook Public Library Community Playscape**

Owner anticipates that the Project's total bid price will be approximately:

- Base Bid **$1,446,000**
- Add Alternate 1 – Larger Restroom Building **$62,000**
- Add Alternate 2 – Splash Pad improvements **$181,000**

The Project has an expected duration of **244** days.

Obtaining the Bidding Documents

Information and Bidding Documents for the Project can be found at the following designated website:

https://customer.e-arc.com/arcEOC/PWELL_Main.asp?mem=144

Bidding Documents may be downloaded from the designated website. Prospective Bidders are urged to register with the designated website as a plan holder, even if Bidding Documents are obtained from a plan room or source other than the designated website in either electronic or paper format. The designated website will be updated periodically with addenda, lists of registered plan holders, reports, and other information relevant to submitting a Bid for the Project. All official notifications, addenda, and other Bidding Documents will be offered only through the designated website. Neither Owner nor Engineer will be responsible for Bidding Documents, including addenda, if any, obtained from sources other than the designated website.

Pre-bid Conference

A pre-bid conference for the Project will be held on **Friday, October 17th** at **11AM** at **Mary L. Cook Public Library 381 Old Stage Road, Waynesville, Ohio 45068.** Attendance at the pre-bid conference is encouraged but not required.

Instructions to Bidders.

For all further requirements regarding bid submittal, qualifications, procedures, and contract award, refer to the Instructions to Bidders that are included in the Bidding Documents.

This Advertisement is issued by:

Owner: **Mary L. Cook Public Library**
By: **Kelly Maloney**
Title: **Director**
Date: **October 6, 2025**

INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION CONTRACT

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ARTICLE 1—DEFINED TERMS

1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:

A. *Issuing Office*—The office from which the Bidding Documents are to be issued, and which registers plan holders.

ARTICLE 2—BIDDING DOCUMENTS

2.01 Bidder shall obtain a complete set of Bidding Requirements and proposed Contract Documents (together, the Bidding Documents). See the Agreement for a list of the Contract Documents. It is Bidder's responsibility to determine that it is using a complete set of documents in the preparation of a Bid. Bidder assumes sole responsibility for errors or misinterpretations resulting from the use of incomplete documents, by Bidder itself or by its prospective Subcontractors and Suppliers.

2.02 Bidding Documents are made available for the sole purpose of obtaining Bids for completion of the Project and permission to download or distribution of the Bidding Documents does not confer a license or grant permission or authorization for any other use. Authorization to download documents, or other distribution, includes the right for plan holders to print documents solely for their use, and the use of their prospective Subcontractors and Suppliers, provided the plan holder pays all costs associated with printing or reproduction. Printed documents may not be re-sold under any circumstances.

2.03 Owner has established a Bidding Documents Website as indicated in the Advertisement or invitation to bid. Owner recommends that Bidder register as a plan holder with the Issuing Office at such website, and obtain a complete set of the Bidding Documents from such website. Bidders may rely that sets of Bidding Documents obtained from the Bidding Documents Website are complete, unless an omission is blatant. Registered plan holders will receive Addenda issued by Owner.

2.04 Plan rooms (including construction information subscription services, and electronic and virtual plan rooms) may distribute the Bidding Documents, or make them available for examination. Those prospective bidders that obtain an electronic (digital) copy of the Bidding Documents from a plan room are encouraged to register as plan holders from the Bidding Documents Website or Issuing Office. Owner is not responsible for omissions in Bidding Documents or other documents obtained from plan rooms, or for a Bidder's failure to obtain Addenda from a plan room.

2.05 *Electronic Documents*

A. When the Bidding Requirements indicate that electronic (digital) copies of the Bidding Documents are available, such documents will be made available to the Bidders as Electronic Documents in the manner specified.

1. Bidding Documents will be provided in Adobe PDF (Portable Document Format) (.pdf) that is readable by Adobe Acrobat Reader Version **2025.001.20474** or later. It is the intent of the Engineer and Owner that such Electronic Documents are to be exactly representative of the paper copies of the documents. However, because the Owner and Engineer cannot totally control the transmission and receipt of Electronic Documents nor the Contractor's means of reproduction of such documents, the Owner and

Engineer cannot and do not guarantee that Electronic Documents and reproductions prepared from those versions are identical in every manner to the paper copies.

B. Unless otherwise stated in the Bidding Documents, the Bidder may use and rely upon complete sets of Electronic Documents of the Bidding Documents, described in Paragraph 2.05.A above. However, Bidder assumes all risks associated with differences arising from transmission/receipt of Electronic Documents versions of Bidding Documents and reproductions prepared from those versions and, further, assumes all risks, costs, and responsibility associated with use of the Electronic Documents versions to derive information that is not explicitly contained in printed paper versions of the documents, and for Bidder's reliance upon such derived information.

C. After the Contract is awarded, the Owner will provide or direct the Engineer to provide for the use of the Contractor documents that were developed by Engineer as part of the Project design process, as Electronic Documents in native file formats.

1. Electronic Documents that are available in native file format include:

a. **AutoCAD Civil 3D**

2. Release of such documents will be solely for the convenience of the Contractor. No such document is a Contract Document.

3. Unless the Contract Documents explicitly identify that such information will be available to the Successful Bidder (Contractor), nothing herein will create an obligation on the part of the Owner or Engineer to provide or create such information, and the Contractor is not entitled to rely on the availability of such information in the preparation of its Bid or pricing of the Work. In all cases, the Contractor shall take appropriate measures to verify that any electronic/digital information provided in Electronic Documents is appropriate and adequate for the Contractor's specific purposes.

4. In no case will the Contractor be entitled to additional compensation or time for completion due to any differences between the actual Contract Documents and any related document in native file format.

ARTICLE 3—QUALIFICATIONS OF BIDDERS

3.01 Bidder is to submit the following information with its Bid to demonstrate Bidder's qualifications to perform the Work:

A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.

B. A written statement that Bidder is authorized to do business in the state where the Project is located, or a written certification that Bidder will obtain such authority prior to the Effective Date of the Contract.

C. Bidder's state or other contractor license number, if applicable.

D. Subcontractor and Supplier qualification information.

E. Other required information regarding qualifications.

3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.

ARTICLE 4—PRE-BID CONFERENCE

4.01 A non-mandatory pre-bid conference will be held at the time and location indicated in the Advertisement or invitation to bid. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference; however, attendance at this conference is not required to submit a Bid.

4.02 Information presented at the pre-Bid conference does not alter the Contract Documents. Owner will issue Addenda to make any changes to the Contract Documents that result from discussions at the pre-Bid conference. Information presented, and statements made at the pre-bid conference will not be binding or legally effective unless incorporated in an Addendum.

ARTICLE 5—SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

5.01 *Site and Other Areas*

A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.

5.02 *Existing Site Conditions*

A. *Subsurface and Physical Conditions; Hazardous Environmental Conditions*

1. The Supplementary Conditions identify the following regarding existing conditions at or adjacent to the Site:

a. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data.

b. Those drawings known to Owner of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data.

c. Reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.

d. Technical Data contained in such reports and drawings.

2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion

Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.

B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05 of the General Conditions, and not in the drawings referred to in Paragraph 5.02.A of these Instructions to Bidders. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

5.03 *Other Site-related Documents*

A. No other Site-related documents are available.

5.04 *Site Visit and Testing by Bidders*

A. Bidder is required to visit the Site and conduct a thorough visual examination of the Site and adjacent areas. During the visit the Bidder must not disturb any ongoing operations at the Site.

B. A Site visit is scheduled following the pre-bid conference.

C. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.

D. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder general access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site. Bidder is responsible for establishing access needed to reach specific selected test sites.

E. Bidder must comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.

F. Bidder must fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

5.05 *Owner's Safety Program*

A. Site visits and work at the Site may be governed by an Owner safety program. If an Owner safety program exists, it will be noted in the Supplementary Conditions.

5.06 *Other Work at the Site*

A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for

such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

ARTICLE 6—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Express Representations and Certifications in Bid Form, Agreement*

A. The Bid Form that each Bidder will submit contains express representations regarding the Bidder's examination of Project documentation, Site visit, and preparation of the Bid, and certifications regarding lack of collusion or fraud in connection with the Bid. Bidder should review these representations and certifications, and assure that Bidder can make the representations and certifications in good faith, before executing and submitting its Bid.

B. If Bidder is awarded the Contract, Bidder (as Contractor) will make similar express representations and certifications when it executes the Agreement.

ARTICLE 7—INTERPRETATIONS AND ADDENDA

7.01 Owner on its own initiative may issue Addenda to clarify, correct, supplement, or change the Bidding Documents.

7.02 Bidder shall submit all questions about the meaning or intent of the Bidding Documents to Engineer in writing. Contact information and submittal procedures for such questions are as follows:

A. **All questions are to be submitted to Chris Hice at chris.hice@kimley-horn.com.**

7.03 Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all registered plan holders. Questions received less than seven days prior to the date for opening of Bids may not be answered.

7.04 Only responses set forth in an Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect. Responses to questions are not part of the Contract Documents unless set forth in an Addendum that expressly modifies or supplements the Contract Documents.

ARTICLE 8—BID SECURITY

8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of **10%** percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a Bid bond issued by a surety meeting the requirements of Paragraph 6.01 of the General Conditions. Such Bid bond will be issued in the form included in the Bidding Documents.

8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract, furnished the required Contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract and furnish the required Contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited, in whole in the case of a penal sum bid bond, and to the extent of Owner's

damages in the case of a damages-form bond. Such forfeiture will be Owner's exclusive remedy if Bidder defaults.

8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of 7 days after the Effective Date of the Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.

8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within 7 days after the Bid opening.

ARTICLE 9—CONTRACT TIMES

9.01 The number of days within which, or the dates by which, the Work is to be (a) substantially completed and (b) ready for final payment, and (c) Milestones (if any) are to be achieved, are set forth in the Agreement.

9.02 Bidder must set forth in the Bid the time by which Bidder must achieve Substantial Completion, subject to the restrictions established in Paragraph 13.07 of these Instructions. The Owner will take Bidder's time commitment regarding Substantial Completion into consideration during the evaluation of Bids, and it will be necessary for the apparent Successful Bidder to satisfy Owner that it will be able to achieve Substantial Completion within the time such Bidder has designated in the Bid. Successful Bidder's time commitments will be entered into the Agreement or incorporated in the Agreement by reference to the specific terms of the Bid.

9.03 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

ARTICLE 10—SUBSTITUTE AND "OR EQUAL" ITEMS

10.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration during the bidding and Contract award process of possible substitute or "or-equal" items. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or "or-equal" item of material or equipment, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract.

10.02 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, and those "or-equal" or substitute or materials and equipment subsequently approved by Engineer prior to the submittal of Bids and identified by Addendum. No item of material or equipment will be considered by Engineer as an "or-equal" or substitute unless written request for approval has been submitted by Bidder and has been received by Engineer within 10 days of the issuance of the Advertisement for Bids or invitation to Bidders. Each such request must comply with the requirements of Paragraphs 7.05 and 7.06 of the General Conditions, and the review of the request will be governed by the principles in those paragraphs. The burden of proof of the merit of the proposed item is upon Bidder. Engineer's decision of approval or disapproval of a proposed item will be final. If Engineer approves any such

proposed item, such approval will be set forth in an Addendum issued to all registered Bidders. Bidders cannot rely upon approvals made in any other manner.

10.03 All prices that Bidder sets forth in its Bid will be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of "or-equal" or substitution requests are made at Bidder's sole risk.

ARTICLE 11—SUBCONTRACTORS, SUPPLIERS, AND OTHERS

11.01 If requested by Owner, the apparent Successful Bidder, must submit to Owner a list of the Subcontractors or Suppliers proposed for the Work within five days after Bid opening.

11.02 If requested by Owner, such list must be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor or Supplier. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor or Supplier, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder will submit a substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.

11.03 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors and Suppliers. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor or Supplier, so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.07 of the General Conditions.

ARTICLE 12—PREPARATION OF BID

12.01 The Bid Form is included with the Bidding Documents.

A. All blanks on the Bid Form must be completed in ink and the Bid Form signed in ink. Erasures or alterations must be initialed in ink by the person signing the Bid Form. A Bid price must be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.

B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words "No Bid" or "Not Applicable."

12.02 If Bidder has obtained the Bidding Documents as Electronic Documents, then Bidder shall prepare its Bid on a paper copy of the Bid Form printed from the Electronic Documents version of the Bidding Documents. The printed copy of the Bid Form must be clearly legible, printed on 8½ inch by 11-inch paper and as closely identical in appearance to the Electronic Document version of the Bid Form as may be practical. The Owner reserves the right to accept Bid Forms which nominally vary in appearance from the original paper version of the Bid Form, providing that all required information and submittals are included with the Bid.

12.03 A Bid by a corporation must be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation must be shown.

12.04 A Bid by a partnership must be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership must be shown.

12.05 A Bid by a limited liability company must be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown.

12.06 A Bid by an individual must show the Bidder's name and official address.

12.07 A Bid by a joint venture must be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture must have been formally established prior to submittal of a Bid, and the official address of the joint venture must be shown.

12.08 All names must be printed in ink below the signatures.

12.09 The Bid must contain an acknowledgment of receipt of all Addenda, the numbers of which must be filled in on the Bid Form.

12.10 Postal and e-mail addresses and telephone number for communications regarding the Bid must be shown.

12.11 The Bid must contain evidence of Bidder's authority to do business in the state where the Project is located, or Bidder must certify in writing that it will obtain such authority within the time for acceptance of Bids and attach such certification to the Bid.

12.12 If Bidder is required to be licensed to submit a Bid or perform the Work in the state where the Project is located, the Bid must contain evidence of Bidder's licensure, or Bidder must certify in writing that it will obtain such licensure within the time for acceptance of Bids and attach such certification to the Bid. Bidder's state contractor license number, if any, must also be shown on the Bid Form.

ARTICLE 13—BASIS OF BID

13.01 *Base Bid with Alternates*

A. Bidders must submit a Bid on a lump sum basis for the base Bid and include a separate price for each alternate described in the Bidding Documents and as provided for in the Bid Form. The price for each alternate will be the amount added to or deleted from the base Bid if Owner selects the alternate.

B. In the comparison of Bids, alternates will be applied in the same order of priority as listed in the Bid Form.

13.02 *Unit Price*

A. Bidders must submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.

B. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity", which Owner or its representative has set forth in the Bid Form, for the item and the corresponding "Bid Unit Price" offered by the

Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.

C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

13.03 *Allowances*

A. For cash allowances the Bid price must include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.

ARTICLE 14—SUBMITTAL OF BID

14.01 The Bidding Documents include one separate unbound copy of the Bid Form, and, if required, the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the other documents required to be submitted under the terms of Article 2 of the Bid Form.

14.02 A Bid must be received no later than the date and time prescribed and at the place indicated in the Advertisement or invitation to bid and must be enclosed in a plainly marked package with the Project title, and, if applicable, the designated portion of the Project for which the Bid is submitted, the name and address of Bidder, and must be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid must be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid must be addressed to the location designated in the Advertisement.

14.03 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 15—MODIFICATION AND WITHDRAWAL OF BID

15.01 An unopened Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.

15.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 15.01 and submit a new Bid prior to the date and time for the opening of Bids.

15.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, the Bidder may withdraw its Bid,

and the Bid security will be returned. Thereafter, if the Work is rebid, the Bidder will be disqualified from further bidding on the Work.

ARTICLE 16—OPENING OF BIDS

16.01 Bids will be opened privately.

ARTICLE 17—BIDS TO REMAIN SUBJECT TO ACCEPTANCE

17.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 18—EVALUATION OF BIDS AND AWARD OF CONTRACT

18.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner also reserves the right to waive all minor Bid informalities not involving price, time, or changes in the Work.

18.02 Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible.

18.03 If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, whether in the Bid itself or in a separate communication to Owner or Engineer, then Owner will reject the Bid as nonresponsive.

18.04 If Owner awards the contract for the Work, such award will be to the responsible Bidder submitting the lowest responsive Bid.

18.05 *Evaluation of Bids*

A. In evaluating Bids, Owner will consider whether the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.

B. In the comparison of Bids, alternates will be applied in the same order of priority as listed in the Bid Form. To determine the Bid prices for purposes of comparison, Owner will announce to all bidders a "Base Bid plus alternates" budget after receiving all Bids, but prior to opening them. For comparison purposes alternates will be accepted, following the order of priority established in the Bid Form, until doing so would cause the budget to be exceeded. After determination of the Successful Bidder based on this comparative process and on the responsiveness, responsibility, and other factors set forth in these Instructions, the award may be made to said Successful Bidder on its base Bid and any combination of its additive alternate Bids for which Owner determines funds will be available at the time of award.

18.06 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for

those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.

18.07 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

ARTICLE 19—BONDS AND INSURANCE

19.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds, other required bonds (if any), and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by required bonds and insurance documentation.

19.02 Article 8, Bid Security, of these Instructions, addresses any requirements for providing bid bonds as part of the bidding process.

ARTICLE 20—SIGNING OF AGREEMENT

20.01 When Owner issues a Notice of Award to the Successful Bidder, it will be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder must execute and deliver the required number of counterparts of the Agreement and any bonds and insurance documentation required to be delivered by the Contract Documents to Owner. Within 10 days thereafter, Owner will deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

ARTICLE 21—SALES AND USE TAXES

21.01 *Owner is exempt from **Ohio** state sales and use taxes on materials and equipment to be incorporated in the Work. (Exemption No. **31-6000999**). Said taxes must not be included in the Bid. Refer to Paragraph SC-7.10 of the Supplementary Conditions for additional information.*

BID FORM FOR CONSTRUCTION CONTRACT

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 1—OWNER AND BIDDER

1.01 This Bid is submitted to: **Wayne Local School District Library, dba Mary L. Cook Public Library, 381 Old Stage Road, Waynesville, OH 45068.**

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2—ATTACHMENTS TO THIS BID

2.01 The following documents are submitted with and made a condition of this Bid:

A. Required Bid security;

B. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids;

C. Contractor's license number as evidence of Bidder's State Contractor's License or a covenant by Bidder to obtain said license within the time for acceptance of Bids;

D. Required Bidder Qualification Statement with supporting data; and

ARTICLE 3—BASIS OF BID—LUMP SUM BID AND UNIT PRICES

3.01 *Lump Sum Bids*

A. Bidder will complete the Work in accordance with the Contract Documents for the following lump sum (stipulated) price(s), together with the Unit Price Bid Form **(attached exhibit A)**:

1. Lump Sum Price (Base Bid and Alternates)

Lump Sum Bid Price for Base Bid	**$**
Add Alternate 1 – Larger restroom Building	**$**
Add Alternate 2 – Splashpad Improvements	**$**

ARTICLE 4—BIDDER'S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

4.01 *Bid Acceptance Period*

A. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

4.02 *Instructions to Bidders*

A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

4.03 *Receipt of Addenda*

A. Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Addendum Date

ARTICLE 5—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

5.01 *Bidder's Representations*

A. In submitting this Bid, Bidder represents the following:

1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
6. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.
7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

8. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

5.02 *Bidder's Certifications*

A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.

2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.

3. Bidder has not solicited or induced any individual or entity to refrain from bidding.

4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:

a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.

b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.

c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.

d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

BIDDER hereby submits this Bid as set forth above:

Bidder:

_____

(typed or printed name of organization)

By: _____

(individual's signature)

Name: _____

(typed or printed)

Title: _____

(typed or printed)

Date: _____

(typed or printed)

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest: _____

(individual's signature)

Name: _____

(typed or printed)

Title: _____

(typed or printed)

Date: _____

(typed or printed)

Address for giving notices:

_____

_____

Bidder's Contact:

Name: _____

(typed or printed)

Title: _____

(typed or printed)

Phone: _____

Email: _____

Address:

_____

_____

_____

Bidder's Contractor License No.: (if applicable) _____

BID BOND (DAMAGES FORM)

Bidder Name: **[Full formal name of Bidder]** Address *(principal place of business)*: **[Address of Bidder's principal place of business]**	**Surety** Name: **[Full formal name of Surety]** Address *(principal place of business)*: **[Address of Surety's principal place of business]**
Owner Name: **Wayne Local School District Library, dba Mary L. Cook Public Library** Address *(principal place of business)*: **381 Old Stage Road, Waynesville, OH 45068**	**Bid** Project *(name and location)*: **Mary. L Cook Public Library Community Playscape-EJCDC C-520_2018** **381 Old Stage Road, Waynesville, OH 45068** Bid Due Date: **Friday, October 31, 2025, at 11AM**
Bond Bond Amount: **[Amount]** Date of Bond: **[Date]**	

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

Bidder	Surety
_____ *(Full formal name of Bidder)*	_____ *(Full formal name of Surety) (corporate seal)*
By: _____ *(Signature)*	By: _____ *(Signature) (Attach Power of Attorney)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title: _____	Title: _____
Attest: _____ *(Signature)*	Attest: _____ *(Signature)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title: _____	Title: _____

Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder any difference between the total amount of Bidder's Bid and the total amount of the Bid of the next lowest, responsible Bidder that submitted a responsive Bid, as determined by Owner, for the work required by the Contract Documents, provided that:

    1.1. If there is no such next Bidder, and Owner does not abandon the Project, then Bidder and Surety shall pay to Owner the bond amount set forth on the face of this Bond, and

    1.2. In no event will Bidder's and Surety's obligation hereunder exceed the bond amount set forth on the face of this Bond.

    1.3. Recovery under the terms of this Bond will be Owner's sole and exclusive remedy upon default of Bidder.

2. Default of Bidder occurs upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

3. This obligation will be null and void if:

    3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or

    3.2. All Bids are rejected by Owner, or

    3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions will not in the aggregate exceed 120 days from Bid due date without Surety's written consent.

6. No suit or action will be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety, and in no case later than one year after the Bid due date.

7. Any suit or action under this Bond must be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notices required hereunder must be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond will be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute governs and the remainder of this Bond that is not in conflict therewith continues in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

ARTICLE 1—GENERAL INFORMATION

1.01 Provide contact information for the Business:

Legal Name of Business:			
Corporate Office			
Name:		Phone number:	
Title:		Email address:	
Business address of corporate office:			
Local Office			
Name:		Phone number:	
Title:		Email address:	
Business address of local office:			

1.02 Provide information on the Business's organizational structure:

Form of Business:	☐ Sole Proprietorship ☐ Partnership ☐ Corporation		
☐ Limited Liability Company ☐ Joint Venture comprised of the following companies:			
	1.		
	2.		
	3.		
Provide a separate Qualification Statement for each Joint Venturer.			
Date Business was formed:		State in which Business was formed:	
Is this Business authorized to operate in the Project location?	☐ Yes ☐ No ☐ Pending		

1.03 Identify all businesses that own Business in whole or in part (25% or greater), or that are wholly or partly (25% or greater) owned by Business:

Name of business:		Affiliation:	
Address:			
Name of business:		Affiliation:	
Address:			
Name of business:		Affiliation:	
Address:			

1.04 Provide information regarding the Business's officers, partners, and limits of authority.

Name:		Title:	
Authorized to sign contracts: ☐ Yes ☐ No		Limit of Authority:	$
Name:		Title:	
Authorized to sign contracts: ☐ Yes ☐ No		Limit of Authority:	$
Name:		Title:	
Authorized to sign contracts: ☐ Yes ☐ No		Limit of Authority:	$
Name:		Title:	

ARTICLE 2—LICENSING

2.01 Provide information regarding licensure for Business:

Name of License:			
Licensing Agency:			
License No:		Expiration Date:	
Name of License:			
Licensing Agency:			
License No:		Expiration Date:	

ARTICLE 3—DIVERSE BUSINESS CERTIFICATIONS

3.01 Provide information regarding Business's Diverse Business Certification, if any. Provide evidence of current certification.

Certification	Certifying Agency	Certification Date
☐ Disadvantaged Business Enterprise		
☐ Minority Business Enterprise		
☐ Woman-Owned Business Enterprise		
☐ Small Business Enterprise		
☐ Disabled Business Enterprise		
☐ Veteran-Owned Business Enterprise		
☐ Service-Disabled Veteran-Owned Business		
☐ HUBZone Business (Historically Underutilized) Business		
☐ Other		
☐ None		

ARTICLE 4—SAFETY

4.01 Provide information regarding Business's safety organization and safety performance.

Name of Business's Safety Officer:		
Safety Certifications		
Certification Name	Issuing Agency	Expiration

4.02 Provide Worker's Compensation Insurance Experience Modification Rate (EMR), Total Recordable Frequency Rate (TRFR) for incidents, and Total Number of Recorded Manhours (MH) for the last 3 years and the EMR, TRFR, and MH history for the last 3 years of any proposed Subcontractor(s) that will provide Work valued at 10% or more of the Contract Price. Provide documentation of the EMR history for Business and Subcontractor(s).

Year									
Company	EMR	TRFR	MH	EMR	TRFR	MH	EMR	TRFR	MH

ARTICLE 5—FINANCIAL

5.01 Provide information regarding the Business's financial stability. Provide the most recent audited financial statement, and if such audited financial statement is not current, also provide the most current financial statement.

Financial Institution:		
Business address:		
Date of Business's most recent financial statement:		☐ Attached
Date of Business's most recent audited financial statement:		☐ Attached
Financial indicators from the most recent financial statement		
Contractor's Current Ratio (Current Assets ÷ Current Liabilities)		
Contractor's Quick Ratio ((Cash and Cash Equivalents + Accounts Receivable + Short Term Investments) ÷ Current Liabilities)		

ARTICLE 6—SURETY INFORMATION

6.01 Provide information regarding the surety company that will issue required bonds on behalf of the Business, including but not limited to performance and payment bonds.

Surety Name:			
Surety is a corporation organized and existing under the laws of the state of:			
Is surety authorized to provide surety bonds in the Project location?	☐ Yes ☐ No		
Is surety listed in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" published in Department Circular 570 (as amended) by the Bureau of the Fiscal Service, U.S. Department of the Treasury? ☐ Yes ☐ No			
Mailing Address (principal place of business):			
Physical Address (principal place of business):			
Phone (main):		Phone (claims):	

ARTICLE 7—INSURANCE

7.01 Provide information regarding Business's insurance company(s), including but not limited to its Commercial General Liability carrier. Provide information for each provider.

Name of insurance provider, and type of policy (CLE, auto, etc.):			
Insurance Provider		Type of Policy (Coverage Provided)	
Are providers licensed or authorized to issue policies in the Project location?		☐ Yes ☐ No	
Does provider have an A.M. Best Rating of A-VII or better?		☐ Yes ☐ No	
Mailing Address (principal place of business):			
Physical Address (principal place of business):			
Phone (main):		Phone (claims):	

ARTICLE 8—CONSTRUCTION EXPERIENCE

8.01 Provide information that will identify the overall size and capacity of the Business.

Average number of current full-time employees:	
Estimate of revenue for the current year:	
Estimate of revenue for the previous year:	

8.02 Provide information regarding the Business's previous contracting experience.

Years of experience with projects like the proposed project:				
As a general contractor:		As a joint venturer:		
Has Business, or a predecessor in interest, or an affiliate identified in Paragraph 1.03:				
Been disqualified as a bidder by any local, state, or federal agency within the last 5 years? ☐ Yes ☐ No				
Been barred from contracting by any local, state, or federal agency within the last 5 years? ☐ Yes ☐ No				
Been released from a bid in the past 5 years? ☐ Yes ☐ No				
Defaulted on a project or failed to complete any contract awarded to it? ☐ Yes ☐ No				
Refused to construct or refused to provide materials defined in the contract documents or in a change order? ☐ Yes ☐ No				
Been a party to any currently pending litigation or arbitration? ☐ Yes ☐ No				
Provide full details in a separate attachment if the response to any of these questions is Yes.				

8.03 List all projects currently under contract in Schedule A and provide indicated information.

8.04 List a minimum of three and a maximum of six projects completed in the last 5 years in Schedule B and provide indicated information to demonstrate the Business's experience with projects similar in type and cost of construction.

8.05 In Schedule C, provide information on key individuals whom Business intends to assign to the Project. Provide resumes for those individuals included in Schedule C. Key individuals include the Project Manager, Project Superintendent, Quality Manager, and Safety Manager. Resumes may be provided for Business's key leaders as well.

ARTICLE 9—REQUIRED ATTACHMENTS

9.01 Provide the following information with the Statement of Qualifications:

A. If Business is a Joint Venture, separate Qualifications Statements for each Joint Venturer, as required in Paragraph 1.02.

B. Diverse Business Certifications if required by Paragraph 3.01.

C. Certification of Business's safety performance if required by Paragraph 4.02.

D. Financial statements as required by Paragraph 5.01.

E. Attachments providing additional information as required by Paragraph 8.02.

F. Schedule A (Current Projects) as required by Paragraph 8.03.

G. Schedule B (Previous Experience with Similar Projects) as required by Paragraph 8.04.

H. Schedule C (Key Individuals) and resumes for the key individuals listed, as required by Paragraph 8.05.

I. Additional items as pertinent.

This Statement of Qualifications is offered by:

Business: _____
(typed or printed name of organization)

By: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Date: _____
(date signed)

(If Business is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Address for giving notices:

_____

_____

_____

Designated Representative:

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Address:

_____

_____

_____

Phone: _____

Email: _____

Schedule A—Current Projects

Name of Organization				
Project Owner		Project Name		
General Description of Project				
Project Cost		Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager
Name				

Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner		Project Name		
General Description of Project				
Project Cost		Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager
Name				

Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner		Project Name		
General Description of Project				
Project Cost		Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager
Name				

Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)

	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Schedule B—Previous Experience with Similar Projects

Name of Organization				
Project Owner		Project Name		
General Description of Project				
Project Cost		Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager
Name				

Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner		Project Name		
General Description of Project				
Project Cost		Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager
Name				

Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner		Project Name		
General Description of Project				
Project Cost		Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager
Name				

Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Schedule B—Previous Experience with Similar Projects

Name of Organization				
Project Owner		Project Name		
General Description of Project				
Project Cost		Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager
Name				

Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner		Project Name		
General Description of Project				
Project Cost		Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager
Name				

Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Project Owner		Project Name		
General Description of Project				
Project Cost		Date Project		
Key Project Personnel	Project Manager	Project Superintendent	Safety Manager	Quality Control Manager
Name				

Reference Contact Information (listing names indicates approval to contacting the names individuals as a reference)					
	Name	Title/Position	Organization	Telephone	Email
Owner					
Designer					
Construction Manager					

Schedule C—Key Individuals

Project Manager			
Name of individual			
Years of experience as project manager			
Years of experience with this organization			
Number of similar projects as project manager			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	

Project Superintendent			
Name of individual			
Years of experience as project superintendent			
Years of experience with this organization			
Number of similar projects as project superintendent			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	

Safety Manager			
Name of individual			
Years of experience as project manager			
Years of experience with this organization			
Number of similar projects as project manager			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	

Quality Control Manager			
Name of individual			
Years of experience as project superintendent			
Years of experience with this organization			
Number of similar projects as project superintendent			
Number of similar projects in other positions			
Current Project Assignments			
Name of assignment		Percent of time used for this project	Estimated project completion date
Reference Contact Information (listing names indicates approval to contact named individuals as a reference)			
Name		Name	
Title/Position		Title/Position	
Organization		Organization	
Telephone		Telephone	
Email		Email	
Project		Project	
Candidate's role on project		Candidate's role on project	

AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

This Agreement is by and between **Wayne Local School District Library, dba Mary L. Cook Public Library** ("Owner") and **[name of contracting entity]** ("Contractor").

Terms used in this Agreement have the meanings stated in the General Conditions and the Supplementary Conditions.

Owner and Contractor hereby agree as follows:

ARTICLE 1—WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: Site Preparation, Demolition, Grading and Drainage, Stormwater, Site Furnishings, Sprayground Equipment and Mechanical System (if selected), Playground Equipment, Tree Protection, Landscape, Restroom Facility, Sidewalks and Parking Lot Work for the Community Playscape.

ARTICLE 2—THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: **Mary L. Cook Public Library Community Playscape**

ARTICLE 3—ENGINEER

3.01 The Owner has retained **Kimley-Horn and Associates, Inc.** ("Engineer") to act as Owner's representative, assume all duties and responsibilities of Engineer, and have the rights and authority assigned to Engineer in the Contract.

3.02 The part of the Project that pertains to the Work has been designed by Engineer.

ARTICLE 4—CONTRACT TIMES

4.01 *Time is of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Contract Times: Dates*

A. The Work will be substantially complete on or before **October 31, 2026**, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before **November 30, 2026**.

4.05 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the Contract Times, as duly modified. The parties also recognize the delays, expense, and difficulties involved in proving, in a legal or arbitration proceeding, the actual loss suffered by Owner if the Work is not completed on time.

SAMPLE

Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. *Substantial Completion:* Contractor shall pay Owner $**100** for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for Substantial Completion, until the Work is substantially complete.

B. If Owner recovers liquidated damages for a delay in completion by Contractor, then such liquidated damages are Owner's sole and exclusive remedy for such delay, and Owner is precluded from recovering any other damages, whether actual, direct, excess, or consequential, for such delay, except for special damages (if any) specified in this Agreement.

ARTICLE 5—CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents, the amounts that follow, subject to adjustment under the Contract:

A. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

ARTICLE 6—PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

A. Owner shall make progress payments on the basis of Contractor's Applications for Payment on or about the **5th** day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract.

a. **Ninety** percent of the value of the Work completed (with the balance being retainage).

1) If 50 percent or more of the Work has been completed, as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and

b. **Ninety** percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

SAMPLE

B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to **100** percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less **200** percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

A. Upon final completion and acceptance of the Work, Owner shall pay the remainder of the Contract Price in accordance with Paragraph 15.06 of the General Conditions.

6.04 *Consent of Surety*

A. Owner will not make final payment, or return or release retainage at Substantial Completion or any other time, unless Contractor submits written consent of the surety to such payment, return, or release.

ARTICLE 7—CONTRACT DOCUMENTS

7.01 *Contents*

A. The Contract Documents consist of all of the following:

1. This Agreement.
2. Bonds:
    a. Performance bond (together with power of attorney).
    b. Payment bond (together with power of attorney).
3. General Conditions.
4. Supplementary Conditions.
5. Specifications as listed in the table of contents of the project manual.
6. Drawings (not attached but incorporated by reference) consisting of **22** sheets titled **Mary L. Cook Library Community Playscape**, dated **September 29, 2025.**
7. Addenda (numbers **[number]** to **[number]**, inclusive).
8. Exhibits to this Agreement (enumerated as follows):
    a. Appendix G, Covenant B of the January 27, 1972 Equal Employment Opportunity Executive Order of the Governor of Ohio
    b. Appendix H, Clean Air Act and federal Water pollution Control Act
    c. Appendix I, Title 18 U.S.C. Section 874, Kickbacks from Public Works Employees
9. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
    a. Notice to Proceed.
    b. Work Change Directives.
    c. Change Orders.

SAMPLE

d. Field Orders.

e. Warranty Bond, if any.

B. The Contract Documents listed in Paragraph 7.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 7.

D. The Contract Documents may only be amended, modified, or supplemented as provided in the Contract.

ARTICLE 8—REPRESENTATIONS, CERTIFICATIONS, AND STIPULATIONS

8.01 *Contractor's Representations*

A. In order to induce Owner to enter into this Contract, Contractor makes the following representations:

1. Contractor has examined and carefully studied the Contract Documents, including Addenda.

2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

3. Contractor is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.

4. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (c) Contractor's safety precautions and programs.

5. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

6. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

7. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

8. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

SAMPLE

9. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

8.02 *Contractor's Certifications*

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 8.02:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

8.03 *Standard General Conditions*

A. Owner stipulates that if the General Conditions that are made a part of this Contract are EJCDC® C-700, Standard General Conditions for the Construction Contract (2018), published by the Engineers Joint Contract Documents Committee, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.

SAMPLE

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on **[indicate date on which Contract becomes effective]** (which is the Effective Date of the Contract).

Owner:	Contractor:
Wayne Local School District Library, dba Mary L. Cook Public Library	
(typed or printed name of organization)	*(typed or printed name of organization)*
By: _____	By: _____
(individual's signature)	*(individual's signature)*
Date: _____	Date: _____
(date signed)	*(date signed)*
Name: _____	Name: _____
(typed or printed)	*(typed or printed)*
Title: _____	Title: _____
(typed or printed)	*(typed or printed)*
	*(If **[Type of Entity]** is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)*
Attest: _____	Attest: _____
(individual's signature)	*(individual's signature)*
Title: _____	Title: _____
(typed or printed)	*(typed or printed)*
Address for giving notices:	Address for giving notices:
_____	_____
_____	_____
_____	_____
Designated Representative:	Designated Representative:
Name: _____	Name: _____
(typed or printed)	*(typed or printed)*
Title: _____	Title: _____
(typed or printed)	*(typed or printed)*
Address:	Address:
_____	_____
_____	_____
_____	_____
Phone: _____	Phone: _____
Email: _____	Email: _____
*(If **[Type of Entity]** is a corporation, attach evidence of authority to sign. If **[Type of Entity]** is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)*	License No.: _____
	(where applicable)
	State: _____

SAMPLE

PERFORMANCE BOND

Contractor Name: **[Full formal name of Contractor]** Address *(principal place of business)*: **[Address of Contractor's principal place of business]**	**Surety** Name: **[Full formal name of Surety]** Address *(principal place of business)*: **[Address of Surety's principal place of business]**
Owner Name: **Wayne Local School District Library, dba Mary L. Cook Public Library** Mailing address *(principal place of business)*: **381 Old Stage Road, Waynesville, OH 45068**	**Contract** Description *(name and location)*: **Mary. L Cook Public Library Community Playscape-EJCDC C-520_2018** **381 Old Stage Road, Waynesville, OH 45068** Contract Price: **[Amount from Contract]** Effective Date of Contract: **[Date from Contract]**

Bond

Bond Amount: **[Amount]**

Date of Bond: **[Date]**

(Date of Bond cannot be earlier than Effective Date of Contract)

Modifications to this Bond form:

☐ None ☐ See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

Contractor as Principal	Surety
_____ *(Full formal name of Contractor)*	_____ *(Full formal name of Surety) (corporate seal)*
By: _____ *(Signature)*	By: _____ *(Signature)(Attach Power of Attorney)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title: _____	Title: _____
Attest: _____ *(Signature)*	Attest: _____ *(Signature)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title: _____	Title: _____

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.

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

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

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

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

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

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

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

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

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

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

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

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

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

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

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

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

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

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

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

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

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

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

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

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such

statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

14. Definitions

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

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

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

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

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

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

16. Modifications to this Bond are as follows: **None**

PAYMENT BOND

Contractor Name: **[Full formal name of Contractor]** Address *(principal place of business)*: **[Address of Contractor's principal place of business]**	**Surety** Name: **[Full formal name of Surety]** Address *(principal place of business)*: **[Address of Surety's principal place of business]**
Owner Name: **Wayne Local School District Library, dba Mary L. Cook Public** Mailing address *(principal place of business)*: **381 Old Stage Road, Waynesville, OH 45068**	**Contract** Description *(name and location)*: **Mary. L Cook Public Library Community Playscape-EJCDC C-520_2018** **381 Old Stage Road, Waynesville, OH 45068** Contract Price: **[Amount, from Contract]** Effective Date of Contract: **[Date, from Contract]**

Bond

Bond Amount: **[Amount]**

Date of Bond: **[Date]**

(Date of Bond cannot be earlier than Effective Date of Contract)

Modifications to this Bond form:

☐ None ☐ See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

Contractor as Principal	Surety
_____ *(Full formal name of Contractor)*	_____ *(Full formal name of Surety) (corporate seal)*
By: _____ *(Signature)*	By: _____ *(Signature)(Attach Power of Attorney)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title: _____	Title: _____
Attest: _____ *(Signature)*	Attest: _____ *(Signature)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title: _____	Title: _____

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond will arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond will arise after the following:
    5.1. Claimants who do not have a direct contract with the Contractor
        5.1.1. have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
        5.1.2. have sent a Claim to the Surety (at the address described in Paragraph 13).
    5.2. Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
    7.1. Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
    7.2. Pay or arrange for payment of any undisputed amounts.
    7.3. The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 will not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

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

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

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

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

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

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

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

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

16. Definitions

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

        16.1.1. The name of the Claimant;

        16.1.2. The name of the person for whom the labor was done, or materials or equipment furnished;

        16.1.3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;

        16.1.4. A brief description of the labor, materials, or equipment furnished;

16.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;

16.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;

16.1.7. The total amount of previous payments received by the Claimant; and

16.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

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

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

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

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

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

18. Modifications to this Bond are as follows: **None**

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.

3. *Application for Payment*—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

5. *Bidder*—An individual or entity that submits a Bid to Owner.

6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.

7. *Bidding Requirements*—The Advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.

8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.

9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.

10. *Claim*

a. A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by Engineer concerning the

requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.

b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.

c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.

d. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

12. *Contract*—The entire and integrated written contract between Owner and Contractor concerning the Work.

13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.

14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.

15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.

16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.

17. *Cost of the Work*—See Paragraph 13.01 for definition.

18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.

19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.

20. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.

21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the

recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. *Engineer*—The individual or entity named as such in the Agreement.

23. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.

24. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.

    a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.

    b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.

    c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.

25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.

27. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.

28. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.

29. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.

30. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.

31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor's plan to accomplish the Work within the Contract Times.

32. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.

34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.

35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals.

36. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

37. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

38. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands or areas furnished by Owner which are designated for the use of Contractor.

39. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.

40. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.

41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers' instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.

42. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion of such Work.

43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.

44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.

45. *Supplier*—A manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.

46. *Technical Data*

    a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.

    b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.

    c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.

47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.

48. *Unit Price Work*—Work to be paid for on the basis of unit prices.

49. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

50. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 *Terminology*

A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives*: The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

C. *Day*: The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective*: The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

1. does not conform to the Contract Documents;

2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or

3. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or Paragraph 15.04).

E. *Furnish, Install, Perform, Provide*

1. The word "furnish," when used in connection with services, materials, or equipment, means to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, means to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, means to furnish and install said services, materials, or equipment complete and ready for intended use.

4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words "furnish," "install," "perform," or "provide," then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

F. *Contract Price or Contract Times*: References to a change in "Contract Price or Contract Times" or "Contract Times or Contract Price" or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term "or both" is not expressed.

G. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Performance and Payment Bonds; Evidence of Insurance*

A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).

B. *Evidence of Contractor's Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.

C. *Evidence of Owner's Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work

into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work, and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.

B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.06 *Electronic Transmittals*

A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.

B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.

C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.

C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.

D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

G. Nothing in the Contract Documents creates:

1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or

2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

3.02 *Reference Standards*

A. *Standards Specifications, Codes, Laws and Regulations*

1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility

inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Contractor's Verification of Figures and Field Measurements*: Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.

2. *Contractor's Review of Contract Documents*: If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:

a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.

C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

A. Contractor and its Subcontractors and Suppliers shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media versions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or

2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein precludes Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work may be done at the Site prior to such date.

4.03 *Reference Points*

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the

established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.

B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times.

B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.

C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;

2. Abnormal weather conditions;

3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and

4. Acts of war or terrorism.

D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:

1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.

2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.

3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.

E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:

1. The circumstances that form the basis for the requested adjustment;

2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;

3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;

4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and

5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.

Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.

F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.

G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor in writing of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.

B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.

2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

B. *Removal of Debris During Performance of the Work*: During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will conform to applicable Laws and Regulations.

C. *Cleaning*: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment

and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading of Structures*: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;

2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and

3. Technical Data contained in such reports and drawings.

B. *Underground Facilities*: Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

C. *Reliance by Contractor on Technical Data*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.

D. *Limitations of Other Data and Documents*: Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;

3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or

4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

A. *Notice by Contractor*: If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:

1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;

2. is of such a nature as to require a change in the Drawings or Specifications;

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

B. *Engineer's Review*: After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.

C. *Owner's Statement to Contractor Regarding Site Condition*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

D. *Early Resumption of Work*: If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

E. *Possible Price and Times Adjustments*

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in

Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. Such condition must fall within any one or more of the categories described in Paragraph 5.04.A;

b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:

a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise;

b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or

c. Contractor failed to give the written notice required by Paragraph 5.04.A.

3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.

4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

F. *Underground Facilities; Hazardous Environmental Conditions*: Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.05 *Underground Facilities*

A. *Contractor's Responsibilities*: Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:

1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;

2. complying with applicable state and local utility damage prevention Laws and Regulations;

3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;

4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and

5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.

B. *Notice by Contractor*: If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing regarding such Underground Facility.

C. *Engineer's Review*: Engineer will:

1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;

2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;

3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and

4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.

During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

D. *Owner's Statement to Contractor Regarding Underground Facility*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.

E. *Early Resumption of Work*: If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

F. *Possible Price and Times Adjustments*

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown

or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;

b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and

c. Contractor gave the notice required in Paragraph 5.05.B.

2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.

3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

5.06 *Hazardous Environmental Conditions at Site*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;

2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and

3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures

of construction to be employed by Contractor, and safety precautions and programs incident thereto;

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.

D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.

E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.

G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.

H. If, after receipt of such written notice, Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special

conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor's obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.

B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.

C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or

Regulations, and must be issued and signed by a surety named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.

E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.

F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.

G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.

H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

6.02 *Insurance—General Provisions*

A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.

B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

C. Alternative forms of insurance coverage, including but not limited to self-insurance and "Occupational Accident and Excess Employer's Indemnity Policies," are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.

D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by

Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.

E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.

F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.

G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

H. Contractor shall require:

1. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and

2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.

I. If either party does not purchase or maintain the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.

J. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.

K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price will be adjusted accordingly.

L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.

M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.

N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

6.03 *Contractor's Insurance*

A. *Required Insurance*: Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.

B. *General Provisions*: The policies of insurance required by this Paragraph 6.03 as supplemented must:

1. include at least the specific coverages required;

2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;

3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract;

4. apply with respect to the performance of the Work, whether such performance is by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable; and

5. include all necessary endorsements to support the stated requirements.

C. *Additional Insureds*: The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:

1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;

2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;

3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);

4. not seek contribution from insurance maintained by the additional insured; and

5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

6.04 *Builder's Risk and Other Property Insurance*

A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.

B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.

C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.

D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.

E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor's expense.

6.05 *Property Losses; Subrogation*

A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against

Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.

1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils, risks, or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.
2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.

B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.

1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.

C. The waivers in this Paragraph 6.05 include the waiver of rights due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other insured peril, risk, or cause of loss.

D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

6.06 *Receipt and Application of Property Insurance Proceeds*

A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.

C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.01 *Contractor's Means and Methods of Construction*

A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall maintain good discipline and order at the Site.

B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.

C. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.04 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.

B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment must be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.05 *"Or Equals"*

A. *Contractor's Request; Governing Criteria*: Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.

1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that the proposed item:

1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;

3) has a proven record of performance and availability of responsive service; and

4) is not objectionable to Owner.

b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times; and

2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.

B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.

C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal," which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.

E. *Treatment as a Substitution Request*: If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

7.06 *Substitutes*

A. *Contractor's Request; Governing Criteria*: Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.

1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of equipment or material from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:

   a. will certify that the proposed substitute item will:

      1) perform adequately the functions and achieve the results called for by the general design;

      2) be similar in substance to the item specified; and

      3) be suited to the same use as the item specified.

   b. will state:

      1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;

      2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and

      3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.

   c. will identify:

      1) all variations of the proposed substitute item from the item specified; and

      2) available engineering, sales, maintenance, repair, and replacement services.

   d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.

B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.

C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.

F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.

B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.

C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.

D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.

E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.

F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.

G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.

I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.

J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.

K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.

L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.

M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If an invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights will be disclosed in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.09 *Permits*

A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

7.10 *Taxes*

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.11 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.

C. Owner or Contractor may give written notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.12 *Record Documents*

A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.13 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.

B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.

C. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

E. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.

F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.

G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.

H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).

J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as material safety data sheets) or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

1. Before submitting a Shop Drawing or Sample, Contractor shall:

a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;

b. determine and verify:

1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;

2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;

c. confirm that the Submittal is complete with respect to all related data included in the Submittal.

2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that Submittal, and that Contractor approves the Submittal.

3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.

B. *Submittal Procedures for Shop Drawings and Samples*: Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.

1. *Shop Drawings*

a. Contractor shall submit the number of copies required in the Specifications.

b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.C.

2. *Samples*

a. Contractor shall submit the number of Samples required in the Specifications.

b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.16.C.

3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Engineer's Review of Shop Drawings and Samples*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Work, comply with the requirements of the Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions or programs incident thereto.

3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will

document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.

6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.

7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.

8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

D. *Resubmittal Procedures for Shop Drawings and Samples*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.

2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.

3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

E. *Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs*

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:

   a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.

   b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.

   c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.

d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.

2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03. 2.04, and 2.05.

F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

7.17 *Contractor's General Warranty and Guarantee*

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer is entitled to rely on Contractor's warranty and guarantee.

B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:

1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and

2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.

C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, or improper modification, maintenance, or operation, by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:

1. Observations by Engineer;

2. Recommendation by Engineer or payment by Owner of any progress or final payment;

3. The issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. Use or occupancy of the Work or any part thereof by Owner;

5. Any review and approval of a Shop Drawing or Sample submittal;

6. The issuance of a notice of acceptability by Engineer;

7. The end of the correction period established in Paragraph 15.08;

8. Any inspection, test, or approval by others; or

9. Any correction of defective Work by Owner.

E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable.

B. In any and all claims against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.19 *Delegation of Professional Design Services*

A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.

B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.

C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.

D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.

E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:

1. Checking for conformance with the requirements of this Paragraph 7.19;

2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and

3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.

F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.

G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

ARTICLE 8—OTHER WORK AT THE SITE

8.01 *Other Work*

A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.

C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.

D. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

8.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:

1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;

2. An itemization of the specific matters to be covered by such authority and responsibility; and

3. The extent of such authority and responsibilities.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.

1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.

2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.

C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9—OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents will be that of the former Engineer.

9.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.

B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.

C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.

B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.07. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Resident Project Representative*

A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.

B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

10.04 *Engineer's Authority*

A. Engineer has the authority to reject Work in accordance with Article 14.

B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.

C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.

D. Engineer's authority as to changes in the Work is set forth in Article 11.

E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.05 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.06 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.07 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Contractor under Paragraph 15.06.A, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 10.07 also apply to the Resident Project Representative, if any.

10.08 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs of which Engineer has been informed.

ARTICLE 11—CHANGES TO THE CONTRACT

11.01 *Amending and Supplementing the Contract*

A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.

B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.

C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

11.02 *Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders covering:

1. Changes in Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;

2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;

3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and

4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.

B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Work Change Directives*

A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.

B. If Owner has issued a Work Change Directive and:

1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.

2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

11.04 *Field Orders*

A. Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.

B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.05 *Owner-Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.

B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.

C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.06 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

11.07 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.

B. An adjustment in the Contract Price will be determined as follows:

1. Where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);

2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or

3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.07.C).

C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit will be determined as follows:

1. A mutually acceptable fixed fee; or

2. If a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. For costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee will be 15 percent;

b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 percent;

c. Where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;

d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;

e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and

f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

11.08 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.

B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.09 *Change Proposals*

A. *Purpose and Content*: Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.

B. *Change Proposal Procedures*

1. *Submittal*: Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.

2. *Supporting Data*: The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.

    a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.

    b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

    The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

3. *Engineer's Initial Review*: Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.

4. *Engineer's Full Review and Action on the Change Proposal*: Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change

Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.

C. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

11.10 *Notification to Surety*

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12—CLAIMS

12.01 *Claims*

A. *Claims Process*: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:

1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;

2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;

3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and

4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.

B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge

and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.

D. *Mediation*

1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.

2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.

E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.

F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:

1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.

B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, will be included in the above to the extent authorized by Owner.

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

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, which will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee will be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.

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

5. Other costs consisting of the following:

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

   b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, which are

consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.

c. *Construction Equipment Rental*

1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.

2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.

3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of builder's risk or other property insurance established in accordance with Paragraph 6.04), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will be included in the Cost of the Work for the purpose of determining Contractor's fee.

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

h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded*: The term Cost of the Work does not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals, general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.

2. The cost of purchasing, renting, or furnishing small tools and hand tools.

3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

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

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

6. Expenses incurred in preparing and advancing Claims.

7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee*

1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:

a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.

b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:

1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.

2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.

2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change

Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.

E. *Documentation and Audit*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

13.02 *Allowances*

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. *Cash Allowances*: Contractor agrees that:

1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment for any of the foregoing will be valid.

C. *Owner's Contingency Allowance*: Contractor agrees that an Owner's contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor for Work covered by allowances, and the Contract Price will be correspondingly adjusted.

13.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision

thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:

   a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

   b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.

2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.

3. Adjusted unit prices will apply to all units of that item.

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply with such procedures and programs as applicable.

14.02 *Tests, Inspections, and Approvals*

A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.

B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:

1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
3. by manufacturers of equipment furnished under the Contract Documents;
4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.

F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

A. *Contractor's Obligation*: It is Contractor's obligation to assure that the Work is not defective.

B. *Engineer's Authority*: Engineer has the authority to determine whether Work is defective, and to reject defective Work.

C. *Notice of Defects*: Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.

D. *Correction, or Removal and Replacement*: Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.

E. *Preservation of Warranties*: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs,

losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.

C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.

1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.

2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work,

or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work will not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace defective Work as required by Engineer, then Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.

C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 *Progress Payments*

A. *Basis for Progress Payments*: The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.

B. *Applications for Payments*

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.

2. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation

establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

   a. the Work has progressed to the point indicated;

   b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and

   c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

   a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or

   b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

    a. to supervise, direct, or control the Work;

    b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;

    c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;

    d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; or

    e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.

6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:

    a. the Work is defective, requiring correction or replacement;

    b. the Contract Price has been reduced by Change Orders;

    c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

    d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

    e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner*

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:

    a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;

c. Contractor has failed to provide and maintain required bonds or insurance;

d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;

e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;

f. The Work is defective, requiring correction or replacement;

g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

h. The Contract Price has been reduced by Change Orders;

i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;

j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;

k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens; or

l. Other items entitle Owner to a set-off against the amount recommended.

2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

15.03 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time

submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without

significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.

2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.04 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

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

15.06 *Final Payment*

A. *Application for Payment*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.

2. The final Application for Payment must be accompanied (except as previously delivered) by:

   a. all documentation called for in the Contract Documents;

   b. consent of the surety, if any, to final payment;

   c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

d. a list of all duly pending Change Proposals and Claims; and

e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Final Application and Recommendation of Payment*: If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Notice of Acceptability*: In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.

D. *Completion of Work*: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment and issuance of notice of the acceptability of the Work.

E. *Final Payment Becomes Due*: Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

15.07 *Waiver of Claims*

A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim,

appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.

B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

15.08 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. correct the defective repairs to the Site or such adjacent areas;
2. correct such defective Work;
3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.

B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.

C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.

D. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment, or failure to adhere to the Progress Schedule);
2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
4. Contractor's repeated disregard of the authority of Owner or Engineer.

B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:

1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and
2. enforce the rights available to Owner under any applicable performance bond.

C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.

E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects,

attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.

G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate for Convenience*

A. Upon 7 days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and

3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.

B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 days' written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The

provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17—FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

A. *Disputes Subject to Final Resolution*: The following disputed matters are subject to final resolution under the provisions of this article:

1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and
2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.

B. *Final Resolution of Disputes*: For any dispute subject to resolution under this article, Owner or Contractor may:

1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;
2. agree with the other party to submit the dispute to another dispute resolution process; or
3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18—MISCELLANEOUS

18.01 *Giving Notice*

A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:

1. in person, by a commercial courier service or otherwise, to the recipient's place of business;
2. by registered or certified mail, postage prepaid, to the recipient's place of business; or
3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

18.02 *Computation of Times*

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

18.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination of the Contract or of the services of Contractor.

18.07 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Assignment of Contract*

A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract.

18.09 *Successors and Assigns*

A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

18.10 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

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SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

These Supplementary Conditions amend or supplement EJCDC® C-700, Standard General Conditions of the Construction Contract (2018). The General Conditions remain in full force and effect except as amended.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added—for example, "Paragraph SC-4.05."

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

No suggested Supplementary Conditions in this Article.

ARTICLE 2—PRELIMINARY MATTERS

2.02 *Copies of Documents*

SC-2.02 Amend the first sentence of Paragraph 2.02.A. to read as follows:

Owner shall furnish to Contractor **two** printed copies of the Contract Documents (including one fully signed counterpart of the Agreement), and **one copy** in electronic portable document format (PDF).

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

No suggested Supplementary Conditions in this Article.

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

No suggested Supplementary Conditions in this Article.

ARTICLE 5—SITE, SUBSURFACE AND PHYSICAL CONDITIONS, HAZARDOUS ENVIRONMENTAL CONDITIONS

5.06. *Hazardous Environmental Conditions at Site*

SC-5.06 Strike the following language from paragraph 5.06.i:

To the fullest extent permitted by laws and regulations, owner shall indemnify and hold harmless contractor, subcontractors, and engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and

other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to a hazardous environmental condition, provided that such hazardous environmental condition (1) was not shown or indicated in the drawings, specifications, or other contract documents, identified as technical data entitled to limited reliance pursuant to paragraph 5.06.b, or identified in the contract documents to be included within the scope of the work, and (2) was not created by contractor or by anyone for whom contractor is responsible.

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

SC-6.01 Add the following paragraphs immediately after Paragraph 6.01.A:

1. *Required Performance Bond Form:* The performance bond that Contractor furnishes will be in the form of EJCDC® C-610, Performance Bond (2018 edition).
2. *Required Payment Bond Form:* The payment bond that Contractor furnishes will be in the form of EJCDC® C-615, Payment Bond (2018 edition).

6.02 *Insurance—General Provisions*

SC-6.02 Add the following paragraph immediately after Paragraph 6.02.B:

1. Contractor may obtain worker's compensation insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the Project is located, (b) is certified or authorized as a worker's compensation insurance provider by the appropriate state agency, and (c) has been accepted to provide worker's compensation insurance for similar projects by the state within the last 12 months.

6.03 *Contractor's Insurance*

SC-6.03 Supplement Paragraph 6.03 with the following provisions after Paragraph 6.03.C:

D. *Other Additional Insureds:* As a supplement to the provisions of Paragraph 6.03.C of the General Conditions, the commercial general liability, automobile liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies must include as additional insureds (in addition to Owner and Engineer) the following: **The Board of Trustees of the Wayne Local School District Public Library, dba Mary L. Cook Public Library.**

E. *Workers' Compensation and Employer's Liability:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance, including, as applicable, United States Longshoreman and Harbor Workers' Compensation Act, Jones Act, stop-gap employer's liability coverage for monopolistic states, and foreign voluntary workers' compensation (from available sources, notwithstanding the jurisdictional requirement of Paragraph 6.02.B of the General Conditions).

Workers' Compensation and Related Policies	Policy limits of not less than:
Workers' Compensation	
State	Statutory
Applicable Federal (e.g., Longshoreman's)	Statutory

Workers' Compensation and Related Policies	Policy limits of not less than:
Foreign voluntary workers' compensation (employer's responsibility coverage), if applicable	Statutory
Employer's Liability	
Each accident	$2,000,000
Each employee	$2,000,000
Policy limit	$2,000,000

F. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against claims for:

1. damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees,
2. damages insured by reasonably available personal injury liability coverage, and
3. damages because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.

G. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy must be written on a 1996 (or later) Insurance Services Organization, Inc. (ISO) commercial general liability form (occurrence form) and include the following coverages and endorsements:

1. Products and completed operations coverage.
    a. Such insurance must be maintained for three years after final payment.
    b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
2. Blanket contractual liability coverage, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
3. Severability of interests and no insured-versus-insured or cross-liability exclusions.
4. Underground, explosion, and collapse coverage.
5. Personal injury coverage.
6. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
7. For design professional additional insureds, ISO Endorsement CG 20 32 07 04 "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.

H. *Commercial General Liability—Excluded Content:* The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, must not include any of the following:

1. Any modification of the standard definition of "insured contract" (except to delete the railroad protective liability exclusion if Contractor is required to indemnify a railroad or others with respect to Work within 50 feet of railroad property).
2. Any exclusion for water intrusion or water damage.
3. Any provisions resulting in the erosion of insurance limits by defense costs other than those already incorporated in ISO form CG 00 01.
4. Any exclusion of coverage relating to earth subsidence or movement.
5. Any exclusion for the insured's vicarious liability, strict liability, or statutory liability (other than worker's compensation).
6. Any limitation or exclusion based on the nature of Contractor's work.
7. Any professional liability exclusion broader in effect than the most recent edition of ISO form CG 22 79.

I. *Commercial General Liability—Minimum Policy Limits*

Commercial General Liability	**Policy limits of not less than:**
General Aggregate	$4,000,000
Products—Completed Operations Aggregate	$4,000,000
Personal and Advertising Injury	$2,000,000
Bodily Injury and Property Damage—Each Occurrence	$2,000,000

J. *Automobile Liability:* Contractor shall purchase and maintain automobile liability insurance for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy must be written on an occurrence basis.

Automobile Liability	**Policy limits of not less than:**
Combined Single Limit	
Combined Single Limit (Bodily Injury and Property Damage)	$2,000,000

6.05 *Property Losses; Subrogation*

SC-6.05 Delete Paragraph 6.05.B. in its entirety.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.08 *Patent Fees and Royalties*

SC-7.08 Delete Paragraph 7.08.B. in its entirety.

7.10 *Taxes*

SC-7.10 Add a new paragraph immediately after Paragraph 7.10.A:

A. Owner is exempt from payment of sales and compensating use taxes of the State of **Ohio** and of cities and counties thereof on all materials to be incorporated into the Work.

1. Owner will furnish the required certificates of tax exemption to Contractor for use in the purchase of supplies and materials to be incorporated into the Work.

2. Owner's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Contractor, or to supplies or materials not incorporated into the Work.

ARTICLE 8—OTHER WORK AT THE SITE

No suggested Supplementary Conditions in this Article.

ARTICLE 9—OWNER'S RESPONSIBILITIES

No suggested Supplementary Conditions in this Article.

ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.03 *Resident Project Representative*

SC-10.03 Add the following new paragraphs immediately after Paragraph 10.03.B:

C. The Resident Project Representative (RPR) will be Engineer's representative at the Site. RPR's dealings in matters pertaining to the Work in general will be with Engineer and Contractor. RPR's dealings with Subcontractors will only be through or with the full knowledge or approval of Contractor. The RPR will:

1. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings (but not including Contractor's safety meetings), and as appropriate prepare and circulate copies of minutes thereof.

2. *Safety Compliance:* Comply with Site safety programs, as they apply to RPR, and if required to do so by such safety programs, receive safety training specifically related to RPR's own personal safety while at the Site.

3. *Liaison*

a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.

b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.

c. Assist in obtaining from Owner additional details or information, when required for Contractor's proper execution of the Work.

4. *Review of Work; Defective Work*

    a. Conduct on-Site observations of the Work to assist Engineer in determining, to the extent set forth in Paragraph 10.02, if the Work is in general proceeding in accordance with the Contract Documents.

    b. Observe whether any Work in place appears to be defective.

    c. Observe whether any Work in place should be uncovered for observation, or requires special testing, inspection or approval.

5. *Inspections and Tests*

    a. Observe Contractor-arranged inspections required by Laws and Regulations, including but not limited to those performed by public or other agencies having jurisdiction over the Work.

    b. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Work.

6. *Payment Requests:* Review Applications for Payment with Contractor.

7. *Completion*

    a. Participate in Engineer's visits regarding Substantial Completion.

    b. Assist in the preparation of a punch list of items to be completed or corrected.

    c. Participate in Engineer's visit to the Site in the company of Owner and Contractor regarding completion of the Work, and prepare a final punch list of items to be completed or corrected by Contractor.

    d. Observe whether items on the final punch list have been completed or corrected.

D. The RPR will not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).

2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.

3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.

4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction.

5 Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.

6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.

7. Authorize Owner to occupy the Project in whole or in part.

ARTICLE 11—CHANGES TO THE CONTRACT

No suggested Supplementary Conditions in this Article.

ARTICLE 12—CLAIMS

12.01 *Claims*

SC-12.01 Strike Paragraph 12.01.D.3. And replace with the following:

3. In the event owner and contractor agree to mediate an underlying dispute, they shall mutually select a mediator, and shall agree at the time of selection of the mediator upon the division of costs of mediation.

ARTICLE 13—COST OF WORK; ALLOWANCES, UNIT PRICE WORK

No suggested Supplementary Conditions in this Article.

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCCEPTANCE OF DEFECTIVE WORK

No suggested Supplementary Conditions in this Article.

ARTICLE 15—PAYMENTS TO CONTRACTOR, SET OFFS; COMPLETIONS; CORRECTION PERIOD

15.03 *Substantial Completion*

SC-15.03 Add the following new subparagraph to Paragraph 15.03.B:

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, will be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under this Article 15.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

No suggested Supplementary Conditions in this Article.

ARTICLE 17—FINAL RESOLUTIONS OF DISPUTES

No suggested Supplementary Conditions in this Article.

ARTICLE 18—MISCELLANEOUS

18.07 *Controlling Law*

SC-18.07 Replace Paragraph 18.07.A with the following:

This contract shall be construed and enforced exclusively pursuant to the laws of the state of Ohio. The parties also agree that the venue of any action to enforce the provisions of this contract, or any document executed in connection with this contract, shall be in Warren County, Ohio.

APPENDIX G

Insert in Project bid document(s)

COVENANT B OF THE JANUARY 27, 1972 EQUAL EMPLOYMENT OPPORTUNITY EXECUTIVE ORDER OF THE GOVERNOR OF OHIO

During the performance of this contract, the contractor agrees as follows:

1. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, ancestry, or sex. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race color, religion, national origin, ancestry, or sex. Such action shall include, but is not limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; lay-off or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeships. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided, setting forth the provisions of this nondiscrimination clause.

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

3. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided by the State Administering Agency, advising the said labor union or workers' representatives of the contractor's commitments under this covenant and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

4. The contractor will comply with all provisions of the Department of Administrative Services, Division of Public Works (DPW) Regulation on Equal Employment Opportunity (EEO) and with the implementing rules, regulations, and applicable orders of the State Equal Employment Opportunity Coordinator.

5. The contractor agrees he will fully cooperate with the State Administering Agency, the State Equal Employment Opportunity Coordinator, and with any other official or agency of the state or federal government that seeks to eliminate unlawful employment discrimination, and with all other state and federal efforts to assure equal employment practices under this contract. Said contractor shall comply promptly with all requests and directions from the State Administering Agency, the State Equal Employment Opportunity Coordinator, and any of the State of Ohio's officials and agencies in this regard, both before and during construction.

6. Full cooperation as expressed in clause 5 above, shall include, but not be listed to, being a witness and permitting employees to be witnesses and complainants in any proceeding involving questions or unlawful employment practices, furnishing all information and reports required by the DPW Regulation on EEO and by the rules, regulations, and orders of the State Equal Employment Opportunity Coordinator pursuant thereto, and permitting access

to his books, records, and accounts by the State Administering Agency and the State Equal Employment Opportunity Coordinator for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

7. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further state contracts or state assisted construction contracts in accordance with procedures authorized in the DPW Regulations on EEO, and such other sanctions may be instituted and remedies invoked as provided in said Regulation or by rule, regulation, or order of the State Equal Employment Opportunity Coordinator, or as otherwise provided by law.

   In the event this contract is terminated for a material breach of said Regulations, the contractor shall become liable for any and all damages as a result of said breach.

8. The contractor will include the portion of the sentence immediately preceding Paragraph 1 and the provisions of Paragraphs 1 through 8 in every subcontract or purchase order unless exempted by rules, regulations, or orders of the State Equal Employment Opportunity Coordinator issued pursuant to Section 204 of the DPW Regulation on EEO, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the State Administering Agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event the contractor becomes involved in, or is threatened with litigation with a subcontractor, vendor or other party as a result of such direction by the State Administering Agency, the contractor may request the State of Ohio to enter into such litigation to protect the interests of the State.

NOTICE: THE CONTRACTOR MUST COMPLY WITH THE PROVISIONS OF THE GOVERNORS EXECUTIVE ORDER 84-9, DATED FEBRUARY 15, 1984, WHICH REQUIRES THE ESTABLISHMENT OF UNIFORM STATEWIDE GOALS FOR THE UTILIZATION OF WOMEN ON STATE AND STATE-ASSISTED CONSTRUCTION CONTRACTS.

APPENDIX H

Insert in Project bid document(s)

CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

The contractor agrees to comply with federal clean air and water standards during the performance of this contract and specifically agrees to do the following:

a. The term "facility" means (a) any building, plant, installation, structure, mine, vessel or other floating craft, location or site of operations (b) owned, leased or supervised (c) by the contractor and subcontractor (d) for the construction, supply and service contracts entered into by the contractor;

b. That any facility to be utilized in the accomplishment of this contract becomes listed on the EPA list, this contract may be canceled, terminated or suspended in whole or in part;

c. That in the event a facility utilized in the accomplishment of this contract becomes listed on the EPA list, this contract may be canceled, terminated or suspended in whole or in part;

d. That it will comply with all the requirements of Section 114 of the Air Act and Section 308 of the Water Act relating to inspection, monitoring, entry, reports, and information, as well as all other requirements specified in Section 114 and Section 308, respectively, and all regulations and guidelines issued thereunder;

e. That it will promptly notify the government of the receipt of any notice from the Director, Office of Federal Activities, Environmental Protection Agency, indicating that any facility utilized or to be utilized in the accomplishment of this contract is under consideration for listing on the EPA List of Violating Facilities;

f. That it will include the provisions of paragraphs "a" through "g" in every subcontract or purchase order entered into for the purpose of accomplishing this contract, unless otherwise exempted pursuant to the EPA regulations implementing the Air or Water Act (40 CFR, Part 15.5), so that such provisions will be binding upon each subcontractor or vendor;

g. That in the event that the contractor or the subcontractors for the construction, supply and service contracts entered into for the purpose of accomplishing this contract were exempted from complying with the above requirements under the provisions of 40 CFR, Part 15.5(a), the exemption shall be nullified should the facility give rise to a criminal conviction (See 40 CFR, part 15.20) during the accomplishment of this contract. Furthermore, with the nullification of the exemption, the above requirements shall be effective. The contractor shall notify the government, as soon as the contractor's or the subcontractors' facility is listed for having given rise to a criminal conviction noted in 40 CFR, Part 15.20.

APPENDIX I

Insert in Project bid document(s)

TITLE 18 U.S.C. SECTION 874

KICKBACKS FROM PUBLIC WORKS EMPLOYEES

Whoever, by force, intimidation, or threat of procuring dismissal from employment, or by any other manner whatsoever induces any person employed in the construction, prosecution, completion or repair of any public building, public work, or building or work financed in whole or in part by loans or grants from the United States, to give up any part of the compensation to which he is entitled under his contract of employment, shall be fined not more than $10,000 or imprisoned not more than five years, or both.

(1) Except as otherwise provided, each administering agency shall require the inclusion of the following language as a condition of any grant, contract, loan, insurance, or guarantee involving federally assisted construction which is not exempt from the requirements of the equal opportunity clause:

The applicant hereby agrees that it will incorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 CFR Chapter 60, which is paid for in whole or in part with funds obtained from the Federal Government or borrowed on the credit of the Federal Government pursuant to a grant, contract, loan, insurance, or guarantee, or undertaken pursuant to any Federal program involving such grant, contract, loan, insurance, or guarantee, the following equal opportunity clause:

During the performance of this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

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

(3) The contractor will not discharge or in any other manner discriminate against

any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

(4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

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

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

(8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: *Provided,* That if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and sub contractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that

it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and sub contractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

Kimley»Horn

Exhibit A

UNIT PRICE - BID FORM

Project Name: Mary L. Cook Public Library Community Playscape 9.29.2025

General Site Work

CMS Item No.	Description	Unit	Quantity	Unit Cost	Cost
201	Clear and Grub (Site)	AC	1.25		$ -
202	Pavement Removed	SY	250		$ -
203	Excavation	CY	2320		$ -
203	Embankment	CY	1020		$ -
207	Perimeter Silt Fence	LF	500		$ -
207	Stabilized Construction Entrance	LS	1		$ -
207	Concrete Washout	LS	1		$ -
207	Inlet Protection	EA	3		$ -
304	4" Stabilized Crushed Aggregate	CY	101		$ -
608	4" Thick Concrete Sidewalk	SF	8040		$ -
611	ODOT CB 2-2B	EA	3		$ -
611	12" Storm Pipe	LF	215		$ -
655	Tree Protection Fencing	LF	733		$ -
655	Construction Fencing	LF	1360		$ -
Spec	Project Sign	LS	1		$ -
Spec	Site Electrical - Panel	LS	1		$ -
Spec	Site Electrical - Conduit/Wire	LF	820		$ -
		Section Total			$ -

Site Furnishings

Item No.	Description	Unit	Quantity	Unit Cost	Cost
Spec	Bench	EA	7		$ -
Spec	Frost Proof Hydrant	EA	1		$ -
Spec	Waste Receptacle	EA	3		$ -
Spec	Bike rack	EA	2		$ -
Spec	Dog Waste Station	EA	2		$ -
Spec	Sternberg Lamp + Post	EA	10		$ -
Spec	6' Wooden Fence	LF	182		$ -
		Section Total			$ -

Site Landscape

Item No.	Description	Unit	Quantity	Unit Cost	Cost
659	Seeding and Mulching (Lawn)	SY	6284		$ -
661	Canopy Tree, 2"	EA	4		$ -
661	Ornamental Tree, 1.5"	EA	9		$ -
661	Evergreen Tree, 6' Ht	EA	2		$ -
661	Evergreen Shrub	EA	18		$ -
Spec	Amended Planting Soil	CY	3		$ -
Spec	Mulch, Double Shredded Hardwood	CY	20		$ -
		Section Total			$ -

Playground Improvements (6MO-5YRS)

Item No.	Description	Unit	Quantity	Unit Cost	Cost
607	4' White Picket Fence Gate	EA	2		$ -
607	4' White Picket Fence	LF	170		$ -
Spec	Toddler Swing Frame	EA	2		$ -
Spec	Centre	EA	1		$ -
Spec	Bench	EA	2		$ -
Spec	Synthetic Turf (Fall Rated)	SF	2175		$ -
Spec	Concrete Playground Curb	LF	178		$ -
		Section Total			$ -

Playground Improvements (Swings)

Item No.	Description	Unit	Quantity	Unit Cost	Cost
Spec	Swings	LS	1		$ -
Spec	Engineered Wood Fiber	CY	90		$ -
Spec	Concrete Playground Ramp	EA	1		$ -
Spec	Concrete Playground Curb	LF	67		$ -
		Section Total			$ -

Playground Improvements (5YRS-12YRS)					
Item No.	*Description*	*Unit*	*Quantity*	*Unit Cost*	*Cost*
Spec	**Play Structure (5-12)**	LS	1		$ -
Spec	**Engineered Wood Fiber**	CY	95		$ -
Spec	**Concrete Playground Ramp**	EA	1		$ -
Spec	**Concrete Playground Curb**	LF	138		$ -
		Section Total			**$ -**
Playground Improvements (Nature Play)					
Item No.	*Description*	*Unit*	*Quantity*	*Unit Cost*	*Cost*
Spec	**48" Tunnel Slide**	LS	1		$ -
Spec	**Double Wave Slide**	Ls	1		$ -
Spec	**Synthetic Turf (Fall Rated)**	SF	675		$ -
Spec	**Oodle Swing**	LS	1		$ -
Spec	**Log Balance Beam**	LS	1		$ -
Spec	**Log Crawl Tunnel**	LS	1		$ -
Spec	**Engineered Wood Fiber**	CY	70		$ -
Spec	**Concrete Playground Ramp**	EA	2		$ -
Spec	**Concrete Playground Curb**	LF	140		$ -
		Section Total			**$ -**
Restroom/ Water Play / Picnic Area					
Item No.	*Description*	*Unit*	*Quantity*	*Unit Cost*	*Cost*
304	**4" Stabilized Crushed Aggregate**	CY	18		$ -
608	**4" Thick Concrete**	SF	1600		$ -
707	**6" Sanitary Line**	LF	184		$ -
Spec	**MDF 440 SMFA W/ Opt. Pet Fountain**	LS	1		$ -
Spec	**Water Line, 5/8"**	LF	542		$ -
Spec	**6" Yard Drain w/ Metal Grate**	EA	2		$ -
Spec	**4" Drainage Pipe**	LF	95		$ -
Spec	**Spray Canopy**	EA	2		$ -
Spec	**Picnic Pavilion**	EA	1		$ -
Spec	**Picnic Table**	EA	5		$ -
Spec	**Picnic Table (Accessible)**	EA	2		$ -
Spec	**Restroom**	LS	1		$ -
		Section Total			**$ -**
Parking					
Item No.	*Description*	*Unit*	*Quantity*	*Unit Cost*	*Cost*
204	**Subgrade Compaction**	SY	782		$ -
304	**6" Aggregate Base**	CY	133		$ -
304	**4" Stabilized Crushed Aggregate**	CY	101		$ -
441	**Asphalt Concrete Surface Course, Type 1 - 1.5"**	CY	33		$ -
441	**Asphalt Concrete Intermediate Course, Type 2 - 2.25"**	CY	7		$ -
608	**4" Thick Concrete Sidewalk**	SF	555		$ -
609	**Curb, 6" Straight**	LF	475		$ -
630	**Sign, Flat Sheet (stop sign)**	SF	8		$ -
630	**Ground Mounted Support, Pipe**	LF	24		$ -
630	**Sign Attachment Assembly**	EA	2		$ -
630	**Sign, Flat Sheet (ADA)**	SF	4		$ -
646	**Handicap Symbol Marking**	EA	2		$ -
646	**Parking Lot Stall Marking**	LF	296		$ -
646	**Stop Bar**	LF	20		$ -
		Section Total			**$ -**
				SUBTOTAL:	**$0.00**
Other Project Costs					
623	**Construction Layout Stakes**				$ -
624	**Mobilization**				$ -
Spec	**Permits/Fees**				$ -
Spec	**Contingency**				$ -
				CONSTRUCTION TOTAL	**$0.00**
ADD ALTERNATE 1 - Larger Restroom Building					
Item No.	*Description*	*Unit*	*Quantity*	*Unit Cost*	*Cost*
304	**4" Stabilized Crushed Aggregate**	CY	4		$ -
608	**4" Thick Concrete Sidewalk**	SF	323		$ -
659	**Seeding and Mulching (Lawn)**	SY	-36		$ -
Spec	**Larger restroom**	LS	1		$ -

Spec	**Smaller Restroom**	LS	-1		$ -
				ADD ALTERNATE 1 SUBTOTAL:	**$0.00**
Other Project Costs					
623	**Construction Layout Stakes**				$ -
624	**Mobilization**				$ -
Spec	**Permits/Fees**				$ -
Spec	**Contingency**				$ -
				ADD ALTERNATE 1 TOTAL	**$0.00**
ADD ALTERNATE 2 - Splash Pad Improvements					
Item No.	*Description*	*Unit*	*Quantity*	*Unit Cost*	*Cost*
203	**Excavation**	CY	150		$ -
203	**Embankment**	CY	-200		$ -
304	**4" Stabilized Crushed Aggregate**	CY	12		$ -
608	**4" Thick Concrete**	SF	46		$ -
608	**5" Thick Concrete**	SF	867		$ -
659	**Seeding and Mulching (Lawn)**	SY	-463		$ -
Spec	**Concrete Stain**	SF	867		$ -
Spec	**2" Water Line**	LF	217		$ -
Spec	**2" Water Meter**	EA	1		$ -
Spec	**Features**	LS	1		$ -
Spec	**Sprayground Mechanical**	LS	1		$ -
Spec	**Engineered Wood Fiber**	CY	14		$ -
Spec	**Seat Wall**	LF	40		$ -
Spec	**Bench**	EA	3		$ -
Spec	**Smaller Water Line**	LF	-217		$ -
Spec	**Concrete Playground Curb**	LF	-17		$ -
				ADD ALTERNATE 2 SUBTOTAL:	**$0.00**
Other Project Costs					
623	**Construction Layout Stakes**				$ -
624	**Mobilization**				$ -
Spec	**Permits/Fees**				$ -
Spec	**Contingency**				$ -
				ADD ALTERNATE 2 CONSTRUCTION TOTAL	**$0.00**
DEDUCT ALTERNATE 1 - Connect to Existing Sanitary (If Possible)					
707	**6" Sanitary Line**	LF	-102		$ -
DEDUCT ALTERNATE 2 - Connect to Existing Electric (If Possible)					
Spec	**Site Electrical - Conduit/Wire**	LF	-20		$ -

Note: Quantities listed and this excel file are provided for convenience only. The Contractor acknowledges and agrees that it is solely responsible for verifying all bid quantities necessary to complete construction prior to submission of its bid. Contractor shall independently review and confirm the accuracy and completeness of the quantities and formulas in the Unit Price Bid Form. By submitting a bid, the Contractor expressly acknowledges and accepts that any errors or omissions in the verification process are the sole responsibility of the Contractor. The Owner and its representatives shall not be held liable for any discrepancies between the bid quantities and the actual quantities required for the project.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)– Mary L. Cook Public Library Community Playscape

381 Old Stage Rd.
Waynesville, OH 45068

Prepared by:
Kimley-Horn and Associates, Inc.
7965 N. High Street, Suite 200
Columbus, OH 43235
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Phone: (720) 285-5000

Prepared on: August 20, 2025

Kimley»Horn

Mary L. Cook Public Library Community Playscape
Waynesville, Ohio

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

Prepared for:

Mary L. Cook Public Library
381 Old Stage Rd.
Waynesville, Ohio 45068

Prepared by:

KIMLEY-HORN AND ASSOCIATES, INC.
7965 N High Street, Suite 200
Columbus, OH 43235

SWPPP PREPARATION DATE: August 20. 2025
ESTIMATED PROJECT DATES:
START: 01/01/2026
END: 08/01/2026

KHA PROJECT NO. 190310000

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Appendix A – General Location Map
Appendix B – Site Maps
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Appendix O – Site Grading Plan/BMP Detail Sheets
Appendix P – Site Drainage Map

SECTION 1: SITE EVALUATION, ASSESSMENT, AND PLANNING

1.1 Project/Site Information
1.2 Contact Information/Responsible Parties
1.3 Nature and Sequence of Construction Activity
1.4 Existing Conditions, Soils, Slopes, Vegetation, and Current Drainage Patterns
1.5 Construction Site Estimates
1.6 Receiving Waters
1.7 Site Features and Sensitive Areas to be Protected
1.8 Potential Sources of Pollution
1.9 Applicable Federal, State, or Local Programs
1.10 Maps

1.1 Project/Site Information

Project/Site Name: Mary L. Cook Public Library Community Playspace
Project Street/Location: 381 Old stage Rd.
City: Waynesville State: Ohio ZIP Code: 45068
County or Similar Subdivision: Warren County

Latitude/Longitude (Use **one** of three possible formats, and specify method)
Latitude: 39° 32'17.69"N Longitude: 84° 05'04.38"W

Method for determining latitude/longitude:
☐ USGS topographic map locator (USGS website) ☐ EPA Web site ☐ GPS
☒ Other (please specify): Google Earth Pro

Is the project located in Indian country? ☐ Yes ☒ No
If yes, name of Reservation, or if not part of a Reservation, indicate "not applicable."

Is this project considered a federal facility? ☐ Yes ☒ No

NPDES project or permit tracking number*: Forthcoming

1.2 Contact Information/Responsable Parties

Operator(s):
Mary L. Cook Public Library
Kelly Maloney
381 Old Stage Rd.
Waynesville, OH 45068
maloneyke@marylcook.com

Project Manager(s) or Site Supervisor(s):
TBD

SWPPP Contact(s):
Kimley-Horn & Associates, Inc.
Chris Hice, PLA
7965 N. High Street, Suite 200
Columbus, OH 43235
(720) 285-5000
Chris.hice@kimley-horn.com

Subcontractor(s):
TBD

Emergency 24-Hour Contact:
Mary L. Cook Public Library
Kelly Maloney
381 Old Stage Rd.
Waynesville, OH 45068
maloneyke@marylcook.com

1.3 Nature and Sequence of Construction Activity

Describe the general scope of the work for the project, major phases of construction, etc:

Project Sequence:

1. Install silt fence and dandy bags on existing nearby storm structures
2. Install stabilized construction entrance
3. Clear and grub
4. Begin rough grading
5. Install utilities
6. Building construction
7. Final grading and install permanent seeding
8. Begin site hardscaping/paving
9. Reseed any disturbed areas and landscape site
10. Remove all temporary erosion and sediment controls after site is permanently stabilized

What is the function of the construction activity?

☐ Residential ☐ Commercial ☐ Industrial ☐ Road Construction ☐ Linear Utility

☒ Other (please specify): Public Park

Estimated Project Start Date: 01/01/26

Estimated Project Completion Date: 08/01/2026

1.4 Existing Conditions, Soils, Slopes, Vegetation, and Current Drainage Patterns

Existing Conditions:
The existing site is comprised of an open grass field which drains centrally to an existing local storm network, leading to the East (See appendix P for details). Historically, the site was open space located to the south of the project site and a single family home located to the north of the project site. Stormwater drained from this area to a local storm network which drains to the Little Miami River (See appendix P for details).

Soil type(s):
MmUC3 – Miamian-urban land complex, 6 to 12 percent slopes, severely eroded
RvUB – Russell-Miamian-Urban land complex, 2 to 6 percent slopes
WyUB2 – Wynn-Urban land complex, 2 to 6 percent slopes, eroded

Are any of these soil types highly erodible or unstable?
☐ ***Yes*** ☒ ***No***

If yes, describe location of these soils:

Slopes (describe current slopes and note any changes due to grading or fill activities):
0 to 12 percent slopes

Drainage Patterns (describe current drainage patterns and note any changes dues to grading or fill activities):
The existing parcel consists of a drainage area that flows from the perimeter of the parcel to the center towards two existing catch basins.

Vegetation:
The site contains short grass vegetation and sparse deciduous trees.

See Appendix B for soils map.

1.5 Construction Site Estimates

The following are estimates of the construction site:
Total project area: 1.85 AC
Construction site area to be disturbed: 1.82 AC

1.6 Receiving Waters

Description of receiving waters:
The existing site flows to the existing storm sewer system. This site is ultimately tributary to the Little Miami River.

Description of storm sewer systems:
The proposed storm system improvements will connect to the existing storm network on the parcel.

1.7 Site Features and Sensitive Areas to be Protected

There are no on-site or nearby streams, including riparian setbacks, on or immediately adjacent the parcel.

1.8 Potential Sources of Pollution

Instructions:

- Identify and list all potential sources of pollution, other than sediment, which may reasonably be expected to affect the quality of stormwater discharges from the construction site.
- For more information, see Appendix Q USEPA *SWPPP Guide*, Chapter 3.A.

Potential sources of sediment to stormwater runoff:
Soil disturbing activities include clearing and grubbing, grading, pavement placement, foundation placement, and utility installation.

Potential pollutants and sources, other than sediment, to stormwater runoff:

- Combined Staging Area—small fueling activities, minor equipment maintenance, sanitary facilities, and hazardous waste storage.
- Materials Storage Area—general building materials, solvents, adhesives, paving materials, paints, aggregates, trash, etc.
- Construction Activity—paving, curb/gutter installation, and concrete pouring
- Concrete washout area.
- Final Seeding – fertilizer

Trade Name Material	Stormwater Pollutants	Location
Fertilizer	Nitrogen, phosphorous	Newly seeded areas
Plaster	Calcium sulphate, calcium carbonate, sulfuric acid	Building construction
Cleaning solvents	Perchloroethylene, methylene chloride, trichloroethylene, petroleum distillates	No equipment cleaning allowed in project limits
Asphalt	Oil, petroleum distillates	Streets and roofing
Concrete	Limestone, sand, pH, chromium	Curb and gutter, building construction
Glue, adhesives	Polymers, epoxies	Building construction
Paints	Metal oxides, Stoddard solvent, talc,, calcium carbonate, arsenic	Building construction, striping
Curing compounds	Naphtha	Curb and gutter
Wood preservatives	Stoddard solvent, petroleum distillates, arsenic, copper, chromium	Timber pads and home construction
Hydraulic oil/fluids	Mineral oil	Leaks or broken hoses from equipment
Gasoline	Benzene, ethyl benzene, toluene, xylene, MTBE	Secondary containment/staging area
Diesel fuel	Petroleum distillate, oil & grease, naphthalene, xylenes	Secondary containment/staging area
Kerosene	Coal oil, petroleum distillates	Secondary containment/staging area
Antifreeze/coolant	Ethylene glycol, propylene glycol, heavy metals (copper, lead, zinc)	Leaks or broken hoses from equipment
Sanitary toilets	Bacteria, parasites, and viruses	Staging area

1.9 Applicable Federal, State or Local Programs

Instructions:

- Note other applicable federal, tribal, state or local soil and erosion control and stormwater management requirements that apply to your construction site.

Describe any federal, state, or local programs that apply to this project:
Rainwater and Land Development Manual—ODNR, and the most current requirements set forth by Delaware County, and the Ohio EPA.

1.10 Maps and Plans

Refer to Appendices A and B for the locations of major BMP structures, soil stabilization measures, and storm drain inlets.

Site Location Map.....Appendix A
Soil Map.....Appendix B
Site Drainage Map.....Appendix P
Site Grading Plan.....Appendix O

SECTION 2: EROSION AND SEDIMENT CONTROL BMPS

2.1 Minimize Disturbed Area and Protect Natural Features and Soil
2.2 Phase Construction Activity
2.3 Sediment Control
2.4 Temporary Runoff Control
2.5 Soil Stabilization
2.6 Permanent Runoff Control

Refer to Appendix P for detailed BMP information.

2.1 Minimize Disturbed Area and Protect Natural Features and Soil

Describe areas to be protected during construction:
Existing utilities which are not servicing demolished structures will be protected against damage. All private utilities will be removed and relocated. Storm drain inlets will be protected to capture some sediment and reduce the among of maintenance required to storm sewers.

Describe natural features to be preserved:
Trees and grass-covered areas beyond the limit of disturbance, as well as those noted in the construction plans to be protected, will be preserved to the best extent possible.

Disturbed areas must be stabilized within the timelines specified in tables below:

Temporary Stabilization	
Area requiring temporary stabilization	**Time frame to apply erosion controls**
Any disturbed areas within 50 feet of a surface water of the State and not at final grade	Within two days of the most recent disturbance if the area will remain idle for more than 14 days
For all construction activities, any disturbed areas that will be dormant for more than 14 days but less than one year, and not within 50 feet of a surface water of the State	Within seven days of the most recent disturbance within the area For residential subdivisions, disturbed areas must be stabilized at least seven days prior to transfer of permit coverage for the individual lot(s).
Disturbed areas that will be idle over winter	Prior to the onset of winter weather

Permanent Stabilization	
Area requiring permanent stabilization	**Time frame to apply erosion controls**
Any areas that will lie dormant for one year or more	Within seven days of the most recent disturbance
Any areas within 50 feet of a surface water of the State and at final grade	Within two days of reaching final grade
Any other areas at final grade	Within seven days of reaching final grade within that area

Operators shall undertake special measures to stabilize channels and outfalls and prevent erosive flows. Measures may include seeding, dormant seeding, mulching, erosion control matting, sodding, riprap, natural channel design with bioengineering techniques or coir wattle check dams.

This project shall incorporate measures which control the flow of runoff from disturbed areas so as to prevent erosion from occurring. Such practices may include coir wattle check dams, pipe slope drains, diversions to direct flow away from exposed soils and protective grading practices. These practices shall divert runoff away from disturbed areas and steep slopes where practicable. Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel to provide non-erosive flow velocity from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected.

Structural practices shall be used to control erosion and trap sediment from a site remaining disturbed for more than 14 days. Such practices may include, among others: silt fences or inlet protection. All sediment control practices must be capable of ponding runoff to be considered functional.

2.2 Phase Construction Activity

1. Install silt fence and dandy bags on existing nearby storm structures
2. Install stabilized construction entrance
3. Clear and grub
4. Begin rough grading
5. Install utilities
6. Building construction
7. Final grading and install permanent seeding
8. Begin site hardscaping/paving
9. Reseed any disturbed areas and landscape site
10. Remove all temporary erosion and sediment controls after site is permanently stabilized

2.3 Sediment Control

BMP Description: Silt Fence	
Included in project ☒ ***Yes*** ☐ ***No***	
Installation Schedule:	Silt fence shall be constructed before upslope land disturbance begins.
Maintenance and Inspection:	Silt Fence requires regular inspection and maintenance to insure its effectiveness. Silt fences must be inspected after each rainfall and at least daily during prolonged rainfall. Silt fence found damaged or improperly installed shall be replaced or repaired immediately. Sediment deposits shall be routinely removed when they reach approximately one-half the height of the silt fence.
Responsible Staff:	Site Operator

***BMP Description*:** Storm Drain Inlet Protection	
Included in project ☒ ***Yes*** ☐ ***No***	
***Installation Schedule*:**	Install at beginning of project, prior to any earthmoving activities.
***Maintenance and Inspection*:**	Effective storm drain inlet protection collects sediment and therefore must be cleaned regularly to prevent clogging and subsequent flooding conditions, piping, or overtopping of the control structures. Sediment barriers that sag, fall over, or are not properly secured, must be promptly repaired or replaced. Inlet protection shall be inspected weekly and after each rainfall event. Areas where there is active traffic shall be inspected daily. Repairs shall be made as needed to assure the practice is performing as intended. Sediment shall be removed when accumulation is one-half the height of the trap. Sediment shall not be washed into the inlet. Sediment shall be removed and placed in a location where it is stable and not subject to erosion. Once the contributing drainage area has been properly stabilized, all filter material collected sediment shall be removed and properly disposed.
***Responsible Staff*:**	Site Operator

2.4 Soil Stabilization

BMP Description: Clearing & Grubbing	
Included in project ☒ ***Yes*** ☐ ***No***	
Installation Schedule:	After completion of erosion control measures have been installed and prior to rough grading.
Maintenance and Inspection:	Land clearing itself requires no maintenance except maintenance of the equipment used in the land clearing

	operation. Tree protection that utilizes fencing and signage should be maintained throughout the clearing stages. It is also important to maintain all other temporary and permanent practices that are used in conjunction with the land clearing to prevent soil erosion and sedimentation.
Responsible Staff:	Site Operator

***BMP Description*:** Construction Entrance	
Included in project ☒ ***Yes*** ☐ ***No***	
***Installation Schedule*:**	The construction entrance shall be installed as soon as is practicable before major grading activities.
***Maintenance and Inspection*:**	The entrance shall be maintained in a condition that will prevent tracking or flow of mud onto public rights-of-way. This may require periodic top dressing with additional stone or the washing and reworking of existing stone as conditions demand and repair and/or cleanout of any structures used to trap sediment. All materials spilled, dropped, washed, or tracked from vehicles onto roadways or into storm drains must be removed immediately. The use of water trucks to remove materials dropped, washed, or tracked onto roadways will not be permitted under any circumstances.
***Responsible Staff*:**	Site Operator

***BMP Description*:** Dust Control	
Included in project ☒ ***Yes*** ☐ ***No***	
***Installation Schedule*:**	As needed during earth moving activities.
***Maintenance and Inspection*:**	Most dust control measures, such as applications of water or road treatments will require monitoring and repeat applications as needed to accomplish good control.
***Responsible Staff*:**	Site Operator

***BMP Description*:** Temporary Seeding	
Included in project ☒ ***Yes*** ☐ ***No***	
***Installation Schedule*:**	Temporary seed shall be applied between construction operations on soil that will not be graded or reworked for 14 days or greater. These idle areas shall be seeded within 7 days after grading.
***Maintenance and Inspection*:**	Areas failing to establish vegetative cover adequate to prevent erosion shall be reseeded as soon as such areas are identified. Seeding performed during hot and dry summer months shall be watered at a rate of 1inch per week.
***Responsible Staff*:**	Site Operator

***BMP Description*:** Mulching
Included in project ☒ ***Yes*** ☐ ***No***

***Installation Schedule*:**	Mulch and other appropriate vegetative practices shall be applied to disturbed areas within 7 days of grading if the area is to remain dormant (undisturbed) for more than 14 days or on areas and portions of the site which can be brought to final grade.
***Maintenance and Inspection*:**	Additional mulching is necessary to cover exposed soil conditions when observed during routine maintenance inspections.
***Responsible Staff*:**	Site Operator

***BMP Description*:** Permanent Seeding	
Included in project ☒ ***Yes*** ☐ ***No***	
***Installation Schedule*:**	Install in any disturbed areas or portions of the construction site at final grade or areas subject to grading activities but will remain dormant for a year or more. Permanent seeding should not be delayed on any one portion of the site at final grade while construction on another portion of the site is being completed. Permanent seeding shall be completed in phases, if necessary.
***Maintenance and Inspection*:**	1. Expect emergence within 4 to 28 days after seeding, with legumes typically following grasses. Check permanent seedlings within 4 to 6 weeks after planting. Look for: • Vigorous seedlings; • Uniform ground surface coverage with at least 30% growth density; • Uniformity with legumes and grasses well intermixed; • Green, not yellow, leaves. Perennials should remain green throughout the summer, at least at the plant bases. 2. Permanent seeding shall not be considered established for at least full year from the time of planting. Inspect the seeding for soil erosion or plant loss during this first year. Repair bare and sparse areas. Fill gullies. Re-fertilize, re-seed, and re-mulch if required. Consider no-till planting. A minimum of 70% growth density, based on a visual inspection, must exist for an adequate permanent vegetative planting. • If stand is inadequate or plant cover is patchy, identify the cause of failure and take corrective action: choice of plant materials, lime and fertilizer quantities, poor seedbed preparation, or weather. If vegetation fails to grow, have the soil tested to determine whether pH is in the correct range or nutrient deficiency is a problem.

	• Depending on stand conditions, repair with complete seedbed preparation, then over-seed or re-seed. • If it is the wrong time of year to plant desired species, over-seed with small grain cover crop to thicken the stand until timing is right to plant perennials or use temporary seeding. See Temporary Seeding standard. 3. Satisfactory establishment may require re-fertilizing the stand in the second growing season. • Do not fertilize cool season grasses in late May through July (i.e. Kentucky Bluegrass, Orchardgrass, Perennial Ryegrass, Smooth Brome, Fescues, Timothy, Reed Canarygrass and Garrison Grass) • Grass that looks yellow may be nitrogen deficient. In lieu of a soil test, an application of 50 lbs. of N-P-K per acre in early spring will help cool season grasses compete against weeds or grow more successfully. • Do not use nitrogen fertilizer if the stand contains more than 20 percent legumes. 4. Long-term maintenance fertilization rates shall be established by following soil test recommendations or by using the rates shown in Ohio Rainwater Land Development Manual. 5. Consider mowing after plants reach a height of 6 to 8 inches tall. Mow grasses tall, at least 3 inches in height and minimize compaction during the mowing process. Vegetation on structural practices such as embankments and grass-lined channels need to be mowed only to prevent woody plants from invading the stand.
***Responsible Staff*:**	Site Operator

SECTION 3: GOOD HOUSEKEEPING BMPS

3.1 Material Handling and Waste Management
3.2 Establish Proper Building Material Staging Areas
3.3 Designate Washout Areas
3.4 Establish Proper Equipment/Vehicle Fueling and Maintenance Practices
3.5 Allowable Non-Stormwater Discharges and Control Equipment/Vehicle Washing
3.6 Spill Prevention and Control Plan
3.7 Any Additional BMPs
3.8 Allowable Non-Stormwater Discharge Management

Refer to Appendix P for detailed BMP information.

3.1 Material Handling and Waste Management

BMP Description: Solid Waste Management	
Installation Schedule:	At the beginning of the project
Maintenance and Inspection:	• Onsite trash should be collected and disposed of on a regular basis. Sanitary systems should also be regularly serviced. • Repair trash containers and dumpsters on an as needed basis. Where possible provide cover for waste containers to prevent the entry of rainwater and loss of contents by wind. • Maintain a contingency plan in the case that hazardous or toxic materials are discovered onsite.
Responsible Staff:	Site Operator

3.2 Establish Proper Building Material Staging Areas

Instructions:

- Describe construction materials expected to be stored on-site and procedures for storage of materials to minimize exposure of the materials to stormwater. (For more information, see Appendix Q USEPA *SWPPP Guide*, Chapter 5, P2 Principle 2.)

BMP Description: To be completed by site contractor	
Installation Schedule:	
Maintenance and Inspection:	
Responsible Staff:	

BMP Description:	
Installation Schedule:	
Maintenance and Inspection:	
Responsible Staff:	

3.3 Designate Washout Areas

BMP Description: Designated Washdown Areas	
Installation Schedule:	At the beginning of the project
Maintenance and Inspection:	• Monitor on site concrete waste storage and disposal procedures at least weekly. • Monitor concrete working tasks, such as saw cutting, coring, grinding and grooving to ensure proper methods are employed.
Responsible Staff:	Site Operator

3.4 Establish Proper Equipment/Vehicle Fueling and Maintenance Practices

BMP Description: Equipment Maintenance Procedures	
Installation Schedule:	At the beginning of the project
Maintenance and Inspection:	• Maintain waste fluid containers in leak proof condition. • Vehicle and equipment maintenance areas should be inspected regularly. • Vehicles and equipment should be inspected on each day of use. Leaks should be repaired immediately or the problem vehicle(s) or equipment should be removed from the project site. • Inspect equipment for damaged hoses and leaky gaskets routinely. Repair or replace as needed.
Responsible Staff:	Site Operator

3.5 Control Equipment/Vehicle Washing

BMP Description: Vehicle Washing/Maintenance Area	
Installation Schedule:	At the beginning of the project
Maintenance and Inspection:	Inspect construction vehicles daily, and repair any leaks immediately. Dispose of all used oil, antifreeze, solvents and other automotive-related chemicals according to manufacturer instructions. These wastes require special handling and disposal. Used oil, antifreeze, and some solvents can be recycled at designated facilities, but other chemicals must be disposed of at a hazardous waste disposal site. Local government agencies can help identify such facilities. Designate special paved areas for vehicle repair. To direct washwater to sanitary sewer systems or other treatment facilities, ensure that vehicle washing areas are impervious and are bermed. Use blowers or vacuums instead of water to remove dry materials from vehicles if possible. Because water alone can remove most dirt adequately, use high-pressure water spray

	without detergents at vehicle washing areas. If you must use detergents, avoid phosphate- or organic-based cleansers to reduce nutrient enrichment and biological oxygen demand in wastewater. Use only biodegradable products that are free of halogenated solvents. Clearly mark all washing areas, and inform workers that all washing must occur in this area. Do not perform other activities, such as vehicle repairs, in the wash area.
Responsible Staff:	Site Operator

3.6 Spill Prevention and Control Plan

BMP Description: Chemical Management	
Installation Schedule:	At the beginning of the project
Maintenance and Inspection:	Various components of a Chemical Management program must be continually maintained and revised: Educating workers • Safety procedures for proper construction site chemical storage and management. • Identification of potential sources of chemical pollutants. • Spill prevention and response procedures. • Potential dangers to humans and the environment from chemical pollutants. • Establish a continuing education program to educate new employees. Quality Assurance • Foreman and/or construction supervisor should monitor onsite chemical storage and disposal procedures. • Educate and if necessary, retain and/or discipline workers who violate procedures. • Ensure the hazardous waste disposal contractor is reputable and licensed. Emergency Response Plan As specified by the local Fire Department, revisions may be necessary to the Protected Chemical and Materials Storage Area Plan during the course of construction based upon materials to be stored on site. If a spill occurs which equals or exceeds the reportable quantity (RQ) for a 24-hour period as defined by the EPA in 40 CFR Part 110, 40 CFR Part 117, and 40 CFR Part 302, then: • Report spill to the National Response Center, 1-800-424-8802, within 24 hours. Also notify the Ohio EPA's 24-hour spill

	hotline at 1-800-282-9378 or (614) 224-0946, and Delaware County. • Revise the Stormwater Pollution Prevention Plan (SWPPP) to show corrective actions. • Notify local EPA Regional office within 14 days.
Responsible Staff:	Site Operator

BMP Description: Spill Containment Plan	
Installation Schedule:	At the beginning of the project
Maintenance and Inspection:	• Comply with suggestions and requirements set by local fire department. • Verify weekly that spill control clean up materials are located near material storage, unloading, and use areas. Restock appropriate clean-up materials after a spill incident has occurred.
Responsible Staff:	Site Operator

3.7 Any Additional BMPs

Instructions:

- Describe any additional BMPs that do not fit into the above categories. Indicate the problem they are intended to address.

BMP Description: To be completed by site contractor	
Installation Schedule:	
Maintenance and Inspection:	
Responsible Staff:	

BMP Description:	
Installation Schedule:	
Maintenance and Inspection:	
Responsible Staff:	

3.8 Allowable Non-Stormwater Discharge Management

Instructions:

- Identify all allowable sources of non-stormwater discharges that are not identified. The allowable non-stormwater discharges identified might include the following (see your permit for an exact list):
  - ✓ Discharges from firefighting activities and fire hydrant flushing's.
  - ✓ Waters used to wash vehicles where detergents are not used
  - ✓ Water used to control dust
  - ✓ Potable water including uncontaminated water line flushings
  - ✓ Routine external building wash down that does not use detergents
  - ✓ Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used
  - ✓ Uncontaminated air conditioning or compressor condensate
  - ✓ Uncontaminated ground water or spring water
  - ✓ Foundation or footing drains where flows are not contaminated with process materials such as solvents
  - ✓ Uncontaminated excavation dewatering
  - ✓ Landscape irrigation
- Identify measures used to eliminate or reduce these discharges and the BMPs used to prevent them from becoming contaminated.
- For more information, see Appendix Q USEPA *SWPPP Guide,* Chapter 3.A.

List allowable non-stormwater discharges and the measures used to eliminate or reduce them and to prevent them from becoming contaminated:

BMP Description: To be completed by site contractor	
Installation Schedule:	
Maintenance and Inspection:	
Responsible Staff:	

BMP Description:	
Installation Schedule:	
Maintenance and Inspection:	
Responsible Staff:	

SECTION 4: POST-CONSTRUCTION BMPs

4.1 Post-Construction Stormwater BMPs
4.2 Water Quality Calculations
4.3 Post-Construction BMP Maintenance Schedule
4.4 Post-Construction BMP Maintenance Plan
4.5 Post-Construction BMP Maintenance Agreement

Refer to Appendix P for detailed BMP information.

4.1 Post-Construction Stormwater BMPs

***BMP Description*:** Underground Detention System – Pipe Storage	
Included in project ☐ ***Yes*** ☒ ***No***	
***Installation Schedule*:**	See table below
***Maintenance and Inspection*:**	See table below
***Responsible Staff*:**	Site Contractor

TABLE 1. Inspection Schedule

Inspection Item	Maintenance Procedures	Frequency of Inspection
Inlet/Outlet Structure & Side Slopes	• Remove accumulated sediment and debris from inlet and outlet structures	Monthly
Storm Sewer System	• Remove debris from the sewer system to ensure positive flow to the outfall structure	Every 6 months
Stormwater Pipes Sediment Accumulation	• System should be clean when an inspection reveals accumulated sediment or trash is clogging the discharge orifice. • Accumulated sediment and trash can typically be evacuated through the manhole over the outlet orifice.	Every 3 Months

4.2 Water Quality Calculations

The water quality for the proposed work on this site is accounted for in an existing detention basin located on the west side of the Meijer parcel to the north. See Appendix P for historical imagery of the proposed property.

4.3 Post-Construction BMP Maintenance Schedule

N/A

4.4 Post-Construction BMP Maintenance Log

Instructions:

– This log should have records of inspections made to the post-construction BMP. Inspections should be made on a monthly basis per the schedule described in section 4.5.

Refer to Appendix L for the Post-Construction BMP Maintenance Log.

4.5 Post-Construction BMP Maintenance Agreement

N/A.

SECTION 5: INSPECTIONS

5.1 Inspections
5.2 Delegation of Authority
5.3 Corrective Action Log

5.1 Inspections

Instructions:

- Identify the individual(s) responsible for conducting inspections and describe their qualifications. Reference or attach the inspection form that will be used.
- Describe the frequency that inspections will occur at your site including any correlations to storm frequency and intensity.
- Note that inspection details for particular BMPs should be included in Sections 2 and 3.
- You should also document the repairs and maintenance that you undertake as a result of your inspections. These actions can be documented in the corrective action log described in Part 5.3 below.
- For more on this topic, see Appendix Q USEPA *SWPPP Guide*, Chapters 6 and 8.
- Also, see suggested inspection form in Appendix Q USEPA *SWPPP Guide*.

1. Inspection Personnel: Identify the person(s) who will be responsible for conducting inspections and describe their qualifications:

Responsible Party: ***Contractor to complete this section.***

Qualifications:

2. Inspection Schedule and Procedures:

Stormwater controls on the site are to be inspected at least once every seven calendar days and within 24 hours after any storm event greater than one-half inch of rain per 24 hour period. The inspection frequency may be reduced to at least once every month if the entire site is temporarily stabilized or runoff is unlikely due to weather conditions (e.g., site is covered with snow, ice, or the ground is frozen). A waiver of inspection requirements is available until one month before thawing conditions are expected to result in a discharge if all of the following conditions are met: the project is located in an area where frozen conditions are anticipated to continue for extended periods of time (i.e., more than one month); land disturbance activities have been suspended; and the beginning and ending dates of the waiver period are documented in the SWP3. Once a definable area has been finally stabilized, you may mark this on your SWP3 and no further inspection requirements apply to that portion of the site. The permittee shall assign “qualified inspection personnel” to conduct these inspections to ensure that the control practices are functional and to evaluate whether the SWP3 is adequate and properly implemented in accordance with the schedule proposed in Part III.G.1.g of the OEPA General Construction Permit or whether additional control measures are required.

All Inspections shall be done by qualified personnel. “Qualified personnel” means a person (or personnel) knowledgeable in the principles and practice of erosion and sediment control BMPs, and who possesses the skills and abilities to assess conditions at the site that could impact stormwater quality and the effectiveness of the BMPs selected to control the quality of the Stormwater discharges. The inspector(s) name, title and a description of his/her

qualifications and a copy of his/her training certificate, if any, shall be included in the SWPPP before construction begins. Inspector information shall be updated whenever a new inspector is brought onto the project.

Following each inspection, a checklist must be completed and signed by the qualified inspection personnel representative. At a minimum, the inspection report must include: the inspection date:

i. names, titles, and qualifications of personnel making the inspection;
ii. weather information for the period since the last inspection (or since commencement of construction activity if the first inspection) including a best estimate of the beginning of each storm event, duration of each storm event, approximate amount of rainfall for each storm event (in inches), and whether any discharges occurred;
iii. weather information and a description of any discharges occurring at the time of the inspection;
iv. location(s) of discharges of sediment or other pollutants from the site;
v. location(s) of BMPs that need to be maintained;
vi. location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
vii. location(s) where additional BMPs are needed that did not exist at the time of inspection; and
viii. corrective action required including any changes to the SWP3 necessary and implementation dates.

Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of or the potential for pollutants entering the drainage system. Erosion and sediment control measures identified in the SWP3 shall be observed to ensure that those are operating correctly. Discharge locations shall be inspected to ascertain whether erosion and sediment control measures are effective in preventing significant impacts to the receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site vehicle tracking.

The inspector shall document all areas inspected, the presence and effectiveness of BMPs, and the conditions found at the time of inspection. All nonfunctional and underperforming BMPs shall be repaired, replaced or supplemented with functional BMPs. The inspector shall complete an inspection report for each inspection.

The permittee shall maintain for three years following the submittal of a notice of termination form, a record summarizing the results of the inspection, names(s) and qualifications of personnel making the inspection, the date(s)of the inspection, major observations relating to the implementation of the SWP3 and a certification as to whether the facility is in compliance with the SWP3 and the permit and identify any incidents of non-compliance. The record and certification shall be signed in accordance with Part V.G. of the OEPA general construction permit.

i. When practices require repair or maintenance. If the inspection reveals that a control practice is in need of repair or maintenance.

ii. When practices fail to provide their intended function. If the inspection reveals that a control practice fails to perform its intended function and that another, more appropriate control practice is required, the SWP3 must be amended and the new control practice must be installed within 10 days of the inspection.

iii. When practices depicted on the SWP3 are not installed. If the inspection reveals that a control practice has not been implemented in accordance with the schedule contained in Part III.G.1.g of this permit, the control practice must be implemented within 10 days from the date of the inspection. If the inspection reveals that the planned control practice is not needed, the record must contain a statement of explanation as to why the control practice is not needed.

A sample inspection report can be found in Appendix E.

5.2 Delegation of Authority

Instructions:

- Identify the individual(s) or specifically describe the position where the construction site operator has delegated authority for the purposes of signing inspection reports, certifications, or other information.
- Attach the delegation of authority form that will be used.
- For more on this topic, see *SWPPP Guide*, Chapter 7.

Refer to Appendix K for the Delegation of Authority Form.

5.3 Corrective Action Log

Instructions:

- Create here, or as an attachment, a corrective action log. This log should describe repair, replacement, and maintenance of BMPs undertaken as a result of the inspections and maintenance procedures described above. Actions related to the findings of inspections should reference the specific inspection report.
- This log should describe actions taken, date completed, and note the person that completed the work.

Refer to Appendix K for the Delegation of Authority Form.

SECTION 6: RECORDKEEPING AND TRAINING

6.1 Recordkeeping
6.2 Log of Changes to the SWPPP
6.3 Training

6.1 Recordkeeping

The permittee shall maintain for three years following the submittal of a notice of termination form, a record summarizing the results of the inspection, names(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the SWP3 and a certification as to whether the facility is in compliance with the SWP3 and the permit and identify any incidents of non-compliance. The record and certification shall be signed in accordance with Part V.G. of the OEPA General Construction Permit.

Refer to Appendix I for the Grading and Activities Log.

6.2 Log of Changes to the SWPPP

Instructions:

- Create a log here, or as an attachment, of changes and updates to the SWPPP. You should include additions of new BMPs, replacement of failed BMPs, significant changes in the activities or their timing on the project, changes in personnel, changes in inspection and maintenance procedures, updates to site maps, and so on.

Refer to Appendix G for the log of changes and updates to the SWPPP.

6.3 Training

Instructions:

- Training your staff and subcontractors is an effective BMP. As with the other steps you take to prevent stormwater problems at your site, you should document the training that you conduct for your staff, for those with specific stormwater responsibilities (e.g. installing, inspecting, and maintaining BMPs), and for subcontractors.
- Include dates, number of attendees, subjects covered, and length of training.
- For more on this subject, see Appendix Q USEPA *SWPPP Guide*, Chapter 8.

Refer to Appendix J for the training log.

SECTION 7: FINAL STABILIZATION

Final Site stabilization is considered achieved once the entire site has, at a minimum, 70% permanent ground cover and all temporary erosion and sediment control practices are removed and disposed of and all trapped sediment has been permanently stabilized to prevent further erosion.

All temporary erosion and sediment control measures will be disposed of after final site stabilization is achieved or after the temporary measures are no longer needed. Trapped sediment and other disturbed soil areas resulting from the disposition of temporary measures will be permanently stabilized to prevent erosion and sedimentation.

SECTION 8: CERTIFICATION AND NOTIFICATION

8.1 OEPA General Construction Permit Permittee Certification
8.2 Contractor/Sub-Contractor SWPPP Acknowledgement

8.1 OEPA General Construction Permit Permittee Certification

Instructions:

- The SWPPP should be signed and certified by the construction operator(s). A copy of the NOI and permit authorization letter received from the OEPA can be found in Appendix D.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____ Title: _____

Signature: _____ Date: _____

Repeat as needed for multiple construction operators at the site.

8.2 Contractor/Sub-Contractor SWPPP Acknowledgement

Instructions:

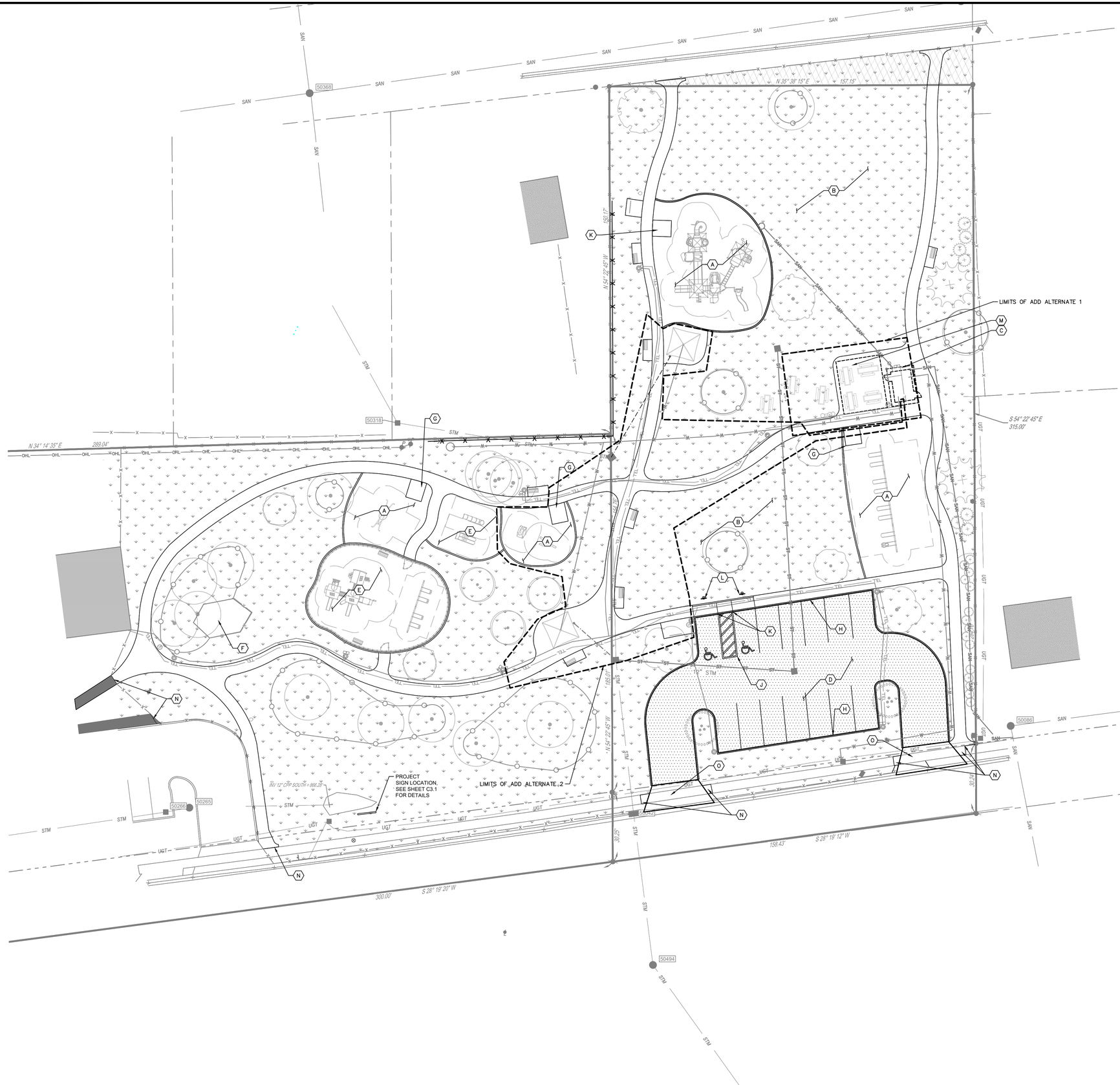
- The permittee SWPPP should be read and reviewed by all contractors and sub-contractors that will partake in signed and certified by the construction operator(s). A copy of the NOI and permit authorization letter received from the OEPA can be found in Appendix D.
- The permittee shall inform all contractors and subcontractors not otherwise defined as "operators" by Part VII of the general permit, who will be involved in the implementation of the SWPPP, of the terms and conditions of this general permit. The permittee shall maintain a written document containing the signatures of all contractors and subcontractors involved in the implementation of the SWPPP as proof acknowledging that they reviewed and understand the conditions and responsibilities of the SWPPP. The written document shall be created and signatures of each individual contractor shall be obtained prior to their commencement of work on the construction site. A copy of the OEPA general construction permit can be found in Appendix C

Refer to Appendix H for the contractor/sub-contractor certification agreement form.

SECTION 9: SWPPP APPENDICES

Appendix A – General Location Map
Appendix B – Site Maps
Appendix C – OEPA Construction General Permit
Appendix D – NOI and Acknowledgement Letter from EPA/State
Appendix E – Inspection Reports
Appendix F – Corrective Action Log
Appendix G – SWPPP Amendment Log
Appendix H – Subcontractor Certifications/Agreements
Appendix I – Grading and Stabilization Activities
Appendix J – Training Log
Appendix K – Delegation of Authority
Appendix L – Post-Construction Maintenance Log
Appendix M – OEPA Co-Permittee Form & Instructions
Appendix N – OEPA NOT Form & Instructions
Appendix O – Site Grading Plan/BMP Detail Sheets
Appendix P – Site Drainage Map

Appendix A – General Location Map



GRAPHIC SCALE IN FEET
0 10 20 40

KEY NOTES

A	PLAYGROUND AREA (C3.2)
B	GREEN SPACE
C	RESTROOM (SEE ADD ALTERNATE 1, C4.0) (SF1.4)
D	PROPOSED STANDARD DUTY ASPHALT - SEE DETAIL 5 ON SHEET C3.3
E	TURF PLAY AREA - SEE DETAIL 1 ON SHEET C3.3
F	EXISTING GAZEBO
G	PLAYGROUND RAMP - SEE DETAIL 4 ON SHEET C3.2
H	6" CURB - SEE DETAIL 7 ON SHEET C3.3
J	ADA AND ACCESSIBLE PAVEMENT MARKINGS - SEE DETAIL 4 ON SHEET C3.3
K	FLUSH CURB - SEE DETAIL 8 ON SHEET C3.3
L	ADA PARKING STALL SIGNAGE - SEE DETAIL 9 ON SHEET C3.3
M	PICNIC PAVILION - SEE DETAIL 6 ON SHEET SF1.1
N	SIDEWALK CONNECTION TO EXISTING PAVEMENT - SEE DETAIL 1 ON SHEET C3.1
O	DRIVE APRON AT SIDEWALK - SEE DETAIL 10 ON SHEET C3.3

NOTES

1. ALL QUANTITIES ARE APPROXIMATE, CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES PRIOR TO BID AND PROVIDING SUFFICIENT MATERIALS TO ACHIEVE THE DESIGN LAYOUT FOR ALL ELEMENTS AS SHOWN.

SITE DATA

4" CONCRETE PAVEMENT	± 9640 SF
ASPHALT PAVEMENT	± 81 CY
ENGINEERED WOOD FIBER	± 255 CY
HARDWOOD MULCH	± 20 CY
LAWN SEEDING	± 6284 SY
SYNTHETIC TURF	± 2850 SF

LEGEND

- EXISTING SIDEWALK
- TREE PROTECTION FENCE (SEE DETAIL 7, C3.1)
- EXISTING CONTOURS
- CONSTRUCTION FENCE (SEE DETAIL 1, SF3.1)
- AREA AFFECTED BY ADD ALTERNATES (SEE C4.0)

No.	REVISIONS	DATE	BY

Kimley»Horn

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7965 NORTH HIGH STREET, SUITE 200
COLUMBUS, OH 43235
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SCALE: AS NOTED | DESIGNED BY: KAP | DRAWN BY: KAP | CHECKED BY: CMH

STATE OF OHIO
CHRISTOPHER M. HICE
NO. 10274
REGISTERED LANDSCAPE ARCHITECT

MARY L. COOK COMMUNITY PLAYSCAPE

381 OLD STAGE RD.
WAYNESVILLE, OHIO 45068

SITE PLAN

ORIGINAL ISSUE: 01/17/2025

KHA PROJECT NO. 190310000

SHEET NUMBER

C3.0

Drawing name: K:\CLB_LA\190310000 - Mary L. Cook Library\2 Design\CAD\PlanSheets\SITE PLAN.dwg C3.0 SITE PLAN Sep 30, 2025 10:15am by: KeeganPauff
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Appendix B – NCRS Soils/Site Maps

Hydrologic Soil Group—Warren County, Ohio



Map Scale: 1:943 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 10 20 40 60

Feet
0 45 90 180 270

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Warren County, Ohio
Survey Area Data: Version 23, Aug 30, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 9, 2020—Nov 5, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
MmUC3	Miamian-Urban land complex, 6 to 12 percent slopes, severely eroded	C	0.5	19.0%
RvUB	Russell-Miamian-Urban land complex, 2 to 6 percent slopes	C	0.7	27.8%
WyUB2	Wynn-Urban land complex, 2 to 6 percent slopes, eroded	C	1.3	53.2%
Totals for Area of Interest			**2.4**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix C – OEPA Construction General Permit

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PART I. COVERAGE UNDER THIS PERMIT

A. Permit Area.

This permit covers the entire State of Ohio. Appendices A and B of this permit contain additional watershed specific requirements for construction activities located partially or fully within the Big Darby Creek Watershed and portions of the Olentangy River Watershed.

B. Eligibility.

1. Construction activities covered. Except for stormwater discharges identified under Part I.B.2, this permit may cover all new and existing discharges composed entirely of stormwater discharges associated with construction activity that enter surface waters of the state or a storm drain leading to surface waters of the state.

   For the purposes of this permit, construction activities include any clearing, grading, excavating, grubbing and/or filling activities that disturb one or more acres. Discharges from trench dewatering are also covered by this permit as long as the dewatering activity is carried out in accordance with the practices outlined in Part III.G.2.g.iv of this permit.

   Construction activities disturbing one or more acres of total land or will disturb less than one acre of land but are part of a larger common plan of development or sale that will ultimately disturb one or more acres of land are eligible for coverage under this permit. The threshold acreage includes the entire area disturbed in the larger common plan of development or sale.

   This permit also authorizes stormwater discharges from support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) provided:

   a. The support activity is directly related to a construction site that is required to have NPDES permit coverage for discharges of stormwater associated with construction activity;

   b. The support activity is not a commercial operation serving multiple unrelated construction projects and does not operate beyond the completion of the construction activity at the site it supports;

   c. Appropriate controls and measures are identified in a stormwater pollution prevention plan (SWP3) covering the discharges from the support activity; and

   d. The support activity is on or contiguous with the property defined in the NOI (offsite borrow pits and soil disposal areas, which serve only one project, do not have to be contiguous with the construction site).

2. Limitations on coverage. The following stormwater discharges associated with construction activity are not covered by this permit:

   a. Stormwater discharges that originate from the site after construction activities have ceased, including any temporary support activity, and the site has achieved final

stabilization. Industrial post-construction stormwater discharges may need to be covered by an NPDES permit;

b. Stormwater discharges associated with construction activity that the director has shown to be or may reasonably expect to be contributing to a violation of a water quality standard and such discharge would be a violation of this permit; and

c. Stormwater discharges authorized by an individual NPDES permit or another NPDES general permit.

3. Waivers. After March 10, 2003, sites whose larger common plan of development or sale have at least one, but less than five acres of land disturbance, which would otherwise require permit coverage for stormwater discharges associated with construction activities, may request that the director waive their permit requirement. Entities wishing to request such a waiver must certify in writing that the construction activity meets one of the two waiver conditions:

a. Rainfall Erosivity Waiver. For a construction site to qualify for the rainfall erosivity waiver, the cumulative rainfall erosivity over the project duration must be five or less and the site must be stabilized with a least a 70 percent vegetative cover or other permanent, non-erosive cover. The rainfall erosivity must be calculated according to the method in U.S. EPA Fact Sheet 3.1 Construction Rainfall Erosivity Waiver dated January 2001 and be found at: **https://epa.ohio.gov/divisions-and-offices/surface-water/permitting/stormwater-program**. If it is determined that a construction activity will take place during a time period where the rainfall erosivity factor is less than five, a written waiver certification must be submitted to Ohio EPA at least 21 days before construction activity is scheduled to begin. If the construction activity will extend beyond the dates specified in the waiver certification, the operator must either: (a) recalculate the waiver using the original start date with the new ending date (if the R factor is still less than five, a new waiver certification must be submitted) or (b) submit an NOI application form and fee for coverage under this general permit at least seven days prior to the end of the waiver period; or

b. TMDL (Total Maximum Daily Load) Waiver. Stormwater controls are not needed based on a TMDL approved or established by U.S. EPA that addresses the pollutant(s) of concern or, for non-impaired waters that do not require TMDLs, and equivalent analysis that determines allocations for small construction sites for the pollutant(s) of concern or that determines that such allocations are not needed to protect water quality based on consideration of existing in-stream concentrations, expected growth in pollutant contributions from all sources, and a margin of safety. The pollutant(s) of concern include sediment or a parameter that addresses sediment (such as total suspended solids, turbidity or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the construction activity. The operator must certify to the director of Ohio EPA that the construction activity will take place, and stormwater discharges will occur, within the drainage area addressed by the TMDL or equivalent analysis. A written waiver certification must be submitted to Ohio EPA at least 21 days before the construction activity is scheduled to begin.

4. Prohibition on non-stormwater discharges. All discharges covered by this permit must be composed entirely of stormwater with the exception of the following: discharges from firefighting activities; fire hydrant flushings; potable water sources including waterline flushings; irrigation drainage; lawn watering; routine external building washdown which does not use detergents; pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; springs; uncontaminated groundwater from trench or well point dewatering and foundation or footing drains where flows are not contaminated with process materials such as solvents. Dewatering activities must be done in compliance with Part II.C and Part III.G.2.g.iv of this permit. Discharges of material other than stormwater or the authorized non-stormwater discharges listed above must comply with an individual NPDES permit or an alternative NPDES general permit issued for the discharge.

   Except for flows from firefighting activities, sources of non-stormwater listed above that are combined with stormwater discharges associated with construction activity must be identified in the SWP3. The SWP3 must identify and ensure the implementation of appropriate pollution prevention measures for the non-stormwater component(s) of the discharge.

5. Spills and unintended releases (Releases in excess of Reportable Quantities). This permit does not relieve the permittee of the reporting requirements of Title 40 of the Code of Federal Regulations ("CFR") Part 117 and 40 CFR Part 302. In the event of a spill or other unintended release, the discharge of hazardous substances in the storm water discharge(s) from a construction site must be minimized in accordance with the applicable stormwater pollution prevention plan for the construction activity and in no case, during any 24-hour period, may the discharge(s) contain a hazardous substance equal to or in excess of reportable quantities.

   40 CFR Part 117 sets forth a determination of the reportable quantity for each substance designated as hazardous in 40 CFR Part 116. The regulation applies to quantities of designated substances equal to or greater than the reportable quantities, when discharged to surface waters of the state. 40 CFR Part 302 designates under section 102(a) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, those substances in the statutes referred to in section 101(14), identifies reportable quantities for these substances and sets forth the notification requirements for releases of these substances. This regulation also sets forth reportable quantities for hazardous substances designated under section 311(b)(2)(A) of the Clean Water Act (CWA).

C. Requiring an individual NPDES permit or an alternative NPDES general permit.

1. The director may require an alternative permit. The director may require any operator eligible for this permit to apply for and obtain either an individual NPDES permit or coverage under an alternative NPDES general permit in accordance with OAC Rule 3745-38-02. Any interested person may petition the director to take action under this paragraph.

   The director will send written notification that an alternative NPDES permit is required. This notice shall include a brief statement of the reasons for this decision, an application

form and a statement setting a deadline for the operator to file the application. If an operator fails to submit an application in a timely manner as required by the director under this paragraph, then coverage, if in effect, under this permit is automatically terminated at the end of the day specified for application submittal.

2. Operators may request an individual NPDES permit. Any owner or operator eligible for this permit may request to be excluded from the coverage of this permit by applying for an individual permit. The owner or operator shall submit an individual application with reasons supporting the request to the director in accordance with the requirements of 40 CFR 122.26. If the reasons adequately support the request, the director shall grant it by issuing an individual NPDES permit.

3. When an individual NPDES permit is issued to an owner or operator otherwise subject to this permit or the owner or operator is approved for coverage under an alternative NPDES general permit, the applicability of this permit to the individual NPDES permittee is automatically terminated on the effective date of the individual permit or the date of approval for coverage under the alternative general permit, whichever the case may be.

D. Permit requirements when portions of a site are sold

If an operator obtains a permit for a development, and then the operator (permittee) sells off lots or parcels within that development, permit coverage must be continued on those lots until a Notice of Termination (NOT) in accordance with Part IV.B is submitted. For developments which require the use of centralized sediment and erosion controls (i.e., controls that address stormwater runoff from one or more lots) for which the current permittee intends to terminate responsibilities under this permit for a lot after sale of the lot to a new owner and such termination will either prevent or impair the implementation of the controls and therefore jeopardize compliance with the terms and conditions of this permit, the permittee will be required to maintain responsibility for the implementation of those controls. For developments where this is not the case, it is the permittee's responsibility to temporarily stabilize all lots sold to individual lot owners unless an exception is approved in accordance with Part III.G.4. In cases where permit responsibilities for individual lot(s) will be terminated after sale of the lot, the permittee shall inform the individual lot owner of the obligations under this permit and ensure that the Individual Lot NOI application is submitted to Ohio EPA.

E. Authorization

1. Obtaining authorization to discharge. Operators that discharge stormwater associated with construction activity must submit an NOI application form and Stormwater Pollution Prevention Plan (SWP3) if located within the Big Darby Creek watershed or portions of the Olentangy watershed in accordance with the requirements of Part I.F of this permit to obtain authorization to discharge under this general permit. As required under OAC Rule 3745-38-02(E), the director, in response to the NOI submission, will notify the applicant in writing that he/she has or has not been granted general permit coverage to discharge stormwater associated with construction activity under the terms and conditions of this permit or that the applicant must apply for an individual NPDES permit or coverage under an alternate general NPDES permit as described in Part I.C.1.

2. No release from other requirements. No condition of this permit shall release the permittee from any responsibility or requirements under other environmental statutes or

regulations. Other permit requirements commonly associated with construction activities include, but are not limited to, section 401 water quality certifications, isolated wetland permits, permits to install sanitary sewers or other devices that discharge or convey polluted water, permits to install drinking water lines, single lot sanitary system permits and disturbance of land which was used to operate a solid or hazardous waste facility (i.e., coverage under this NPDES general permit does not satisfy the requirements of OAC Rule 3745-27-13 or ORC Section 3734.02(H)). The issuance of this permit is subject to resolution of an antidegradation review. This permit does not relieve the permittee of other responsibilities associated with construction activities such as contacting the Ohio Department of Natural Resources, Division of Water, to ensure proper well installation and abandonment of wells.

F. Notice of Intent Requirements

1. Deadlines for notification.

   a. Initial coverage: Operators who intend to obtain initial coverage for a stormwater discharge associated with construction activity under this general permit must submit a complete and accurate NOI application form, a completed Stormwater Pollution Prevention Plan (SWP3) for projects within the Big Darby Creek and portions of the Olentangy river watersheds and appropriate fee at least 21 days (or 45 days in the Big Darby Creek watershed and portions of the Olentangy watershed) prior to the commencement of construction activity. If more than one operator, as defined in Part VII of this general permit, will be engaged at a site, each operator shall seek coverage under this general permit prior to engaging in construction activities. Coverage under this permit is not effective until an approval letter granting coverage from the director of Ohio EPA is received by the applicant. Where one operator has already submitted an NOI prior to other operator(s) being identified, the additional operator shall request modification of coverage to become a co-permittee. In such instances, the co-permittees shall be covered under the same facility permit number. No additional permit fee is required.

   b. Individual lot transfer of coverage: Operators must each submit an individual lot notice of intent (Individual Lot NOI) application form (no fee required) to Ohio EPA at least seven days prior to the date that they intend to accept responsibility for permit requirements for their portion of the original permitted development from the previous permittee. Transfer of permit coverage is not granted until an approval letter from the director of Ohio EPA is received by the applicant.

2. Failure to notify. Operators who fail to notify the director of their intent to be covered and who discharge pollutants to surface waters of the state without an NPDES permit are in violation of ORC Chapter 6111. In such instances, Ohio EPA may bring an enforcement action for any discharges of stormwater associated with construction activity.

3. How to submit an NOI. Operators seeking coverage under this permit must submit a complete and accurate Notice of Intent (NOI) application using Ohio EPA's electronic application form which is available through the Ohio EPA eBusiness Center at: **https://ebiz.epa.ohio.gov/**. Submission through the Ohio EPA eBusiness Center will require establishing an Ohio EPA eBusiness Center account and obtaining a unique Personal Identification Number (PIN) for final submission of the NOI. Existing eBusiness

Center account holders can access the NOI form through their existing account and submit using their existing PIN. Please see the following link for guidance: **https://epa.ohio.gov/divisions-and-offices/surface-water/permitting/electronic-business-services-sub/streams**. Alternatively, if you are unable to access the NOI form through the agency eBusiness Center due to a demonstrated hardship, the NOI may be submitted on a paper NOI form provided by Ohio EPA. NOI information shall be typed on the form. Please contact Ohio EPA, Division of Surface Water at (614) 644-2001 if you wish to receive a paper NOI form.

4. Additional notification. NOIs and SWP3s are considered public documents and shall be made available to the public in accordance with Part III.C.2. The permittee shall make NOIs and SWP3s available upon request of the director of Ohio EPA, local agencies approving sediment and erosion control plans, grading plans or stormwater management plans, local governmental officials, or operators of municipal separate storm sewer systems (MS4s) receiving drainage from the permitted site. Each operator that discharges to an NPDES permitted MS4 shall provide a copy of its Ohio EPA NOI submission to the MS4 in accordance with the MS4's requirements, if applicable.

5. Re-notification. Existing permittees having coverage under the previous generation of this general permit shall have continuing coverage under OHC000006 with the submittal of a timely renewal application. Within 180 days from the effective date of this permit, existing permittees shall submit the completed renewal application expressing their intent for continued coverage. In accordance with Ohio Administrative Code (OAC) 3745-38-02(E)(2)(a)(ii), a renewal application fee will not apply to existing permittees having general permit coverage issued on or after April 22, 2022. Permit coverage will be terminated if Ohio EPA does not receive the renewal application within this 180-day period.

Part II. NON-NUMERIC EFFLUENT LIMITATIONS

You shall comply with the following non-numeric effluent limitations for discharges from your site and/or from construction support activities. Part III of this permit contains the specific design criteria to meet the objectives of the following non-numeric effluent limitations. You shall develop and implement the SWP3 in accordance with Part III of this permit to satisfy these non-numeric effluent limitations.

A. Erosion and Sediment Controls. You shall design, install and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, such controls shall be designed, installed and maintained to:

1. Control stormwater volume and velocity within the site to minimize soil and stream erosion;

2. Control stormwater discharges, including both peak flowrates and total stormwater volume, to minimize erosion at outlets and to minimize downstream channel and streambank erosion;

3. Minimize the amount of soil exposed during construction activity;

4. Minimize the disturbance of steep slopes;

5. Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls shall address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site;

6. If feasible, provide and maintain a 50-foot undisturbed natural buffer around surface waters of the state, direct stormwater to vegetated areas to increase sediment removal and maximize stormwater infiltration. If it is infeasible to provide and maintain an undisturbed 50-foot natural buffer, you shall comply with the stabilization requirements found in Part II.B for areas within 50 feet of a surface water; and

7. Minimize soil compaction and, unless infeasible, preserve topsoil.

B. Soil Stabilization. Stabilization of disturbed areas shall, at a minimum, be initiated in accordance with the time frames specified in the following tables.

Table 1: Permanent Stabilization

Area requiring permanent stabilization	Time frame to apply erosion controls
Any areas that will lie dormant for one year or more	Within seven days of the most recent disturbance
Any areas within 50 feet of a surface water of the state and at final grade	Within two days of reaching final grade
Other areas at final grade	Within seven days of reaching final grade within that area

Table 2: Temporary Stabilization

Area requiring temporary stabilization	Time frame to apply erosion controls
Any disturbed areas within 50 feet of a surface water of the state and not at final grade	Within two days of the most recent disturbance if the area will remain idle for more than 14 days
Any disturbed areas that will be dormant for more than 14 days but less than one year, and not within 50 feet of a surface water of the state	Within seven days of the most recent disturbance within the area For residential subdivisions, disturbed areas must be stabilized at least seven days prior to transfer of permit coverage for the individual lot(s).
Disturbed areas that will be idle over winter	Prior to the onset of winter weather

Where vegetative stabilization techniques may cause structural instability or are otherwise unobtainable, alternative stabilization techniques must be employed. Permanent and temporary stabilization are defined in Part VII.

C. Dewatering. Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited unless managed by appropriate controls.

D. Pollution Prevention Measures. Design, install, implement and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented and maintained to:

1. Minimize the discharge of pollutants from equipment and vehicle washing, wheel washwater, and other washwaters. Washwaters shall be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;

2. Minimize the exposure of construction materials, products, and wastes; landscape materials, fertilizers, pesticides, and herbicides; detergents, sanitary waste and other materials present on the site to precipitation and to stormwater; and

3. Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.

E. Prohibited Discharges. The following discharges are prohibited:

1. Wastewater from washout of concrete, unless managed by an appropriate control;

2. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

3. Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and

4. Soaps or solvents used in vehicle and equipment washing or all other waste water streams which could be subject to an individual NPDES permit (Part III.G.2.g).

F. Surface Outlets. When discharging from sediment basins utilize outlet structures that withdraw water from the surface, unless infeasible. (Note: Ohio EPA believes that the circumstances in which it is infeasible to design outlet structures in this manner are rare. Exceptions may include time periods with extended cold weather during winter months. If you have determined that it is infeasible to meet this requirement, you shall provide documentation in your SWP3 to support your determination.)

G. Post-Construction Stormwater Management Controls. So that receiving stream's physical, chemical and biological characteristics are protected, and stream functions are maintained, post-construction stormwater practices shall provide long-term management of runoff quality and quantity.

PART III. STORMWATER POLLUTION PREVENTION PLAN (SWP3)

A. Stormwater Pollution Prevention Plans.

A SWP3 shall be developed for each site covered by this permit. For a multi-phase construction project, a separate NOI shall be submitted when a separate SWP3 will be prepared for subsequent phases. SWP3s shall be prepared in accordance with sound engineering and/or conservation practices by a professional experienced in the design and implementation of standard erosion and sediment controls and stormwater management practices addressing all phases of construction. The SWP3 shall clearly identify all activities which are required to be

authorized under Section 401 and subject to an antidegradation review. The SWP3 shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges associated with construction activities. The SWP3 shall be a comprehensive, stand-alone document, which is not complete unless it contains the information required by Part III.G of this permit. In addition, the SWP3 shall describe and ensure the implementation of best management practices (BMPs) that reduce the pollutants and impact of stormwater discharges during construction and pollutants associated with the post-construction land use to ensure compliance with ORC Section 6111.04, OAC Chapter 3745-1 and the terms and conditions of this permit.

B. Timing.

An acceptable SWP3 shall be completed and submitted to the applicable regulated MS4 entity (for projects constructed entirely within a regulated MS4 area) prior to the timely submittal of an NOI. Projects within the Big Darby Creek and portions of the Olentangy watersheds must submit a SWP3 with the NOI. The SWP3 shall be updated in accordance with Part III.D. Submission of a SWP3 does not constitute review and approval on the part of Ohio EPA. Upon request and good cause shown, the director may waive the requirement to have a SWP3 completed at the time of NOI submission. If a waiver has been granted, the SWP3 must be completed prior to the initiation of construction activities. The SWP3 must be implemented upon initiation of construction activities.

In order to continue coverage from the previous generations of this permit, the permittee shall review and update the SWP3 to ensure that this permit's requirements are addressed within 180 days after the effective date of this permit. If it is infeasible for you to comply with a specific requirement in this permit because (1) the provision was not part of the permit you were previously covered under, and (2) because you are prevented from compliance due to the nature or location of earth disturbances that commenced prior to the effective date of this permit, you shall include documentation within your SWP3 of the reasons why it is infeasible for you to meet the specific requirement.

Examples of OHC000006 permit conditions that would be infeasible for permittees renewing coverage to comply with include:

- OHC000006 post-construction requirements, for projects that obtained NPDES construction stormwater coverage and started construction activities prior to the effective date of this permit;

- OHC000006 post-construction requirements, for multi-phase development projects with an existing regional post-construction BMP issued under previous NPDES post-construction requirements. This only applies to construction sites authorized under Ohio EPA's Construction Stormwater Permits issued after April 20, 2003; or

- Case-by-case situations approved by the Director.

C. SWP3 Signature and Review.

1. Plan Signature and Retention On-Site. The SWP3 shall include the certification in Part V.H, be signed in accordance with Part V.G., and be retained on site during working hours.

2. Plan Availability

   a. On-site: The plan shall be made available immediately upon request of the director or his authorized representative and MS4 operators or their authorized representative during working hours. A copy of the NOI and letter granting permit coverage under this general permit also shall be made available at the site. The NOI and letter granting permit coverage may be maintained electronically under the condition that they can be immediately produced on-site upon request. The SWP3 may be prepared, signed, and kept electronically, rather than in paper form, if the records are: (a) in a format that can be read in a similar manner as a paper record; (b) legally dependable with no less evidentiary value than their paper equivalent; and (c) immediately accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be, if the records were stored in paper form. For additional guidance on the proper practices to follow for the electronic retention of inspection report records, refer to this general permit's Fact Sheet at https://epa.ohio.gov/divisions-and-offices/surface-water/permitting/storm-water-discharges-from-small-and-large-construction-activities--general-permit

   b. By written request: The permittee must provide the most recent copy of the SWP3 within 7 days upon written request by any of the following:

      i. The director or the director's authorized representative;

      ii. A local agency approving sediment and erosion plans, grading plans or stormwater management plans; or

      iii. In the case of a stormwater discharge associated with construction activity which discharges through a municipal separate storm sewer system with an NPDES permit, to the operator of the system.

   c. To the public: All NOIs, general permit approval for coverage letters, and SWP3s are considered reports that shall be available to the public in accordance with the Ohio Public Records law. The permittee shall make documents available to the public upon request or provide a copy at public expense, at cost, in a timely manner. However, the permittee may claim to Ohio EPA any portion of an SWP3 as confidential in accordance with Ohio law.

3. Plan Revision. The director or authorized representative may notify the permittee at any time that the SWP3 does not meet one or more of the minimum requirements of this part. Within 10 days after such notification from the director or authorized representative (or as otherwise provided in the notification), the permittee shall make the required changes to the SWP3 and shall submit to Ohio EPA the revised SWP3 or a written certification that the requested changes have been made.

D. Amendments.

The permittee shall amend the SWP3 whenever there is a change in design, construction, operation or maintenance, which has a significant effect on the potential for the discharge of pollutants to surface waters of the state or if the SWP3 proves to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges associated with

construction activity. Amendments to the SWP3 may be reviewed by Ohio EPA in the same manner as Part III.C.

E. Duty to inform contractors and subcontractors.

The permittee shall inform all contractors and subcontractors not otherwise defined as "operators" in Part VII of this general permit who will be involved in the implementation of the SWP3 of the terms and conditions of this general permit. The permittee shall maintain a written document containing the signatures of all contractors and subcontractors involved in the implementation of the SWP3 as proof acknowledging that they reviewed and understand the conditions and responsibilities of the SWP3. For contactors and subcontractors which do not meet the definition of an operator, the written document shall be created and signatures shall be obtained prior to commencement of each contractors/subcontractors work.

F. Total Maximum Daily Load (TMDL) allocations.

If a TMDL is approved for any waterbody into which the permittee's site discharges and requires specific BMPs for construction sites, the director may require the permittee to revise his/her SWP3. Specific conditions have been provided in Appendix A (for the Big Darby Creek Watershed) and Appendix B (for portions of the Olentangy river watershed).

G. SWP3 Requirements.

Operations that discharge stormwater from construction activities are subject to the following requirements and the SWP3 shall include the following items:

1. Site description. Each SWP3 shall provide:

    a. A description of the nature and type of the construction activity (e.g., low density residential, shopping mall, highway, etc.);

    b. Total area of the site and the area of the site that is expected to be disturbed (i.e., grubbing, clearing, excavation, filling or grading, including off-site borrow areas);

    c. A measure of the impervious area and percent imperviousness created by the construction activity (existing, new and total impervious area after construction);

    d. Stormwater calculations, including the volumetric runoff coefficients for both the pre-construction and post- construction site conditions, and resulting water quality volume; design details for post-construction stormwater facilities and pretreatment practices such as contributing drainage areas, capacities, elevations, outlet details and drain times shall be included in the SWP3; and if applicable, explanation of the use of existing post-construction facilities. Ohio EPA recommends the use of data sheets (see Ohio's Rainwater and Land Development manual and Ohio EPA resources for examples);

    e. Existing data describing the soil and, if available, the quality of any discharge from the site;

f. A description of prior land uses at the site;

g. A description of the condition of any on-site streams (e.g. prior channelization, bed instability or headcuts, channels on public maintenance, or natural channels);

h. A BMP implementation schedule which describes the sequence of major construction operations (i.e., designation of vegetative preservation areas, grubbing, excavating, grading, utilities, infrastructure installation and others) and the implementation of erosion, sediment and stormwater management practices or facilities to be employed during each operation of the sequence;

i. The name and/or location of the immediate receiving stream or surface water(s) and the first subsequent named receiving water(s) and the areal extent and description of wetlands or other special aquatic sites at or near the site which will be disturbed, or which will receive discharges from disturbed areas of the project. For discharges to an MS4, the point of discharge to the MS4 and the location where the MS4 ultimately discharges to a stream or surface water of the state shall be indicated;

j. For subdivided developments, a detail drawing of individual parcels with their erosion, sediment or stormwater control practices and/or a typical individual lot showing standard individual lot erosion and sediment control practices.

   A typical individual lot drawing does not remove the responsibility to designate specific erosion and sediment control practices in the SWP3 for critical areas such as steep slopes, stream banks, drainage ways and riparian zones;

k. Location and description of any stormwater discharges associated with dedicated asphalt and dedicated concrete plants covered by this permit and the best management practices to address pollutants in these stormwater discharges;

l. A cover page or title identifying the name and location of the site, the name and contact information of all construction site operators, the name and contact information for the person responsible for authorizing and amending the SWP3, preparation date, and the estimated dates that construction will start and be complete;

m. A log documenting grading and stabilization activities as well as amendments to the SWP3, which occur after construction activities commence; and

n. Site map showing:

   i. Limits of earth-disturbing activity of the site including associated off-site borrow or spoil areas that are not addressed by a separate NOI and associated SWP3;

   ii. Soils types for all areas of the site, including locations of unstable or highly erodible and/or known contaminated soils;

iii. Existing and proposed contours. A delineation of drainage watersheds expected during and after major grading activities as well as the size of each drainage watershed, in acres;

iv. The location of any delineated boundary for required riparian setbacks;

v. Conservation easements or areas designated as open space, preserved vegetation or otherwise protected from earth disturbing activities. A description of any associated temporary or permanent fencing or signage;

vi. Surface water locations including springs, wetlands, streams, lakes, water wells, etc., on or within 200 feet of the site, including the boundaries of wetlands or stream channels and first subsequent named receiving water(s) the permittee intends to fill or relocate for which the permittee is seeking approval from the Army Corps of Engineers and/or Ohio EPA;

vii. Existing and planned locations of buildings, roads, parking facilities and utilities;

viii. The location of all erosion and sediment control practices, including the location of areas likely to require temporary stabilization during site development;

ix. Sediment traps and basins noting their sediment storage and dewatering (detention) volume and contributing drainage area. Ohio EPA recommends the use of data sheets (see Ohio EPA's Rainwater and Land Development manual and website for examples) to provide data for all sediment traps and basins noting important inputs to design and resulting parameters such as their contributing drainage area, disturbed area, detention volume, sediment storage volume, practice surface area, dewatering time, outlet type and dimensions;

x. The location of permanent stormwater management practices (new and existing) including pretreatment practices to be used to control pollutants in stormwater after construction operations have been completed along with the location of existing and planned drainage features including catch basins, culverts, ditches, swales, surface inlets and outlet structures;

xi. Areas designated for the storage or disposal of solid, sanitary and toxic wastes, including dumpster areas, areas designated for cement truck washout, and vehicle fueling;

xii. The location of designated construction entrances where the vehicles will access the construction site; and

xiii. The location of any areas of proposed floodplain fill, floodplain excavation, stream restoration or known temporary or permanent stream crossings.

2. Controls. In accordance with Part II.A, the SWP3 shall contain a description of the controls appropriate for each construction operation covered by this permit and the operator(s) shall implement such controls. The SWP3 shall clearly describe for each major construction activity identified in Part III.G.1.h: (a) appropriate control measures and the general timing (or sequence) during the construction process that the measures will be implemented; and (b) which contractor is responsible for implementation (e.g., contractor A will clear land and install perimeter controls and contractor B will maintain perimeter controls until final stabilization). The SWP3 shall identify the subcontractors engaged in activities that could impact stormwater runoff. The SWP3 shall contain signatures from all of the identified subcontractors indicating that they have been informed and understand their roles and responsibilities in complying with the SWP3. Ohio EPA recommends that the primary site operator review the SWP3 with the primary contractor prior to commencement of construction activities and keep a SWP3 training log to demonstrate that this review has occurred.

   Ohio EPA recommends that the erosion, sediment, and stormwater management practices used to satisfy the conditions of this permit should meet the standards and specifications in the most current edition of Ohio's Rainwater and Land Development (see definitions) manual or other standards acceptable to Ohio EPA. The controls shall include the following minimum components:

   a. Preservation Methods. The SWP3 shall make use of practices which preserve the existing natural condition as much as feasible. Such practices may include: preserving existing vegetation, vegetative buffer strips, and existing soil profile and topsoil; phasing of construction operations to minimize the amount of disturbed land at any one time; and designation of tree preservation areas or other protective clearing or grubbing practices. For all construction activities immediately adjacent to surface waters of the state, the permittee shall comply with the buffer non-numeric effluent limitation in Part II.A.6, as measured from the ordinary high water mark of the surface water. Ohio EPA strongly recommends that 50-foot buffers be maintained around surface waters, including wetlands.

   b. Erosion Control Practices. The SWP3 shall make use of erosion controls that provide cover over disturbed soils unless an exception is approved in accordance with Part III.G.4. A description of control practices designed to re-establish vegetation or suitable cover on disturbed areas after grading shall be included in the SWP3. The SWP3 shall provide specifications for stabilization of all disturbed areas of the site and provide guidance as to which method of stabilization will be employed for any time of the year. Such practices may include: temporary seeding, permanent seeding, mulching, matting, sod stabilization, vegetative buffer strips, phasing of construction operations, use of construction entrances and the use of alternative ground cover.

      i. **Stabilization.** Disturbed areas shall be stabilized in accordance with Table 1 (Permanent Stabilization) and Table 2 (Temporary Stabilization) in Part II.B of this permit.

      ii. **Permanent stabilization of conveyance channels**. Operators shall undertake special measures to stabilize channels and outfalls and prevent erosive flows. Measures may include seeding, dormant seeding

(as defined in the most current edition of the Rainwater and Land Development manual), mulching, erosion control matting, sodding, riprap, natural channel design with bioengineering techniques or rock check dams.

c. Runoff Control Practices. The SWP3 shall incorporate measures which control the flow of runoff from disturbed areas so as to prevent erosion from occurring. Such practices may include rock check dams, pipe slope drains, diversions to direct flow away from exposed soils and protective grading practices. These practices shall divert runoff away from disturbed areas and steep slopes where practicable. Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel to provide non-erosive flow velocity from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected.

d. Sediment Control Practices. The plan shall include a description of structural practices that shall store runoff allowing sediments to settle and/or divert flows away from exposed soils or otherwise limit runoff from exposed areas. Structural practices shall be used to control erosion and trap sediment from a site remaining disturbed for more than 14 days. Such practices may include, among others: sediment settling ponds, sediment barriers, earth diversion dikes or channels which direct runoff to a sediment settling pond and storm drain inlet protection. All sediment control practices must be capable of ponding runoff in order to be considered functional. Earth diversion dikes or channels alone are not considered a sediment control practice unless those are used in conjunction with a sediment settling pond.

The SWP3 shall contain detail drawings for all structural practices.

i. **Timing.** Sediment control structures shall be functional throughout the course of earth disturbing activity. Sediment basins and perimeter sediment barriers shall be implemented prior to grading and within seven days from the start of grubbing. They shall continue to function until the upslope development area is stabilized with permanent cover. As construction progresses and the topography is altered, appropriate controls shall be constructed, or existing controls altered to address the changing drainage patterns.

ii. **Sediment settling ponds.** A sediment settling pond is required for any one of the following conditions:

- Concentrated or collected stormwater runoff (e.g., storm sewer or ditch);
- Runoff from drainage areas, which exceed the design capacity of silt fence or other sediment barriers; or
- Runoff from drainage areas that exceed the design capacity of inlet protection.

The permittee may request approval from Ohio EPA to use alternative controls if the permittee can demonstrate the alternative controls are equivalent in effectiveness to a sediment settling pond.

In accordance with Part II.F, if feasible, sediment settling ponds shall be dewatered at the pond surface using a skimmer or equivalent device. The sediment settling pond volume consists of both a dewatering zone and a sediment storage zone. The volume of the dewatering zone shall be a minimum of 1800 cubic feet (ft^3) per acre of drainage (67 yd^3/acre) with a minimum 48-hour drain time. The volume of the sediment storage zone shall be calculated by one of the following methods:

Method 1: The volume of the sediment storage zone shall be 1000 ft^3 per disturbed acre within the watershed of the basin. OR

Method 2: The volume of the sediment storage zone shall be the volume necessary to store the sediment as calculated with RUSLE or a similar generally accepted erosion prediction model.

Accumulated sediment shall be removed from the sediment storage zone once it exceeds 50 percent of the minimum required sediment storage design capacity and prior to the conversion to the post-construction practice unless suitable storage is demonstrated based upon over-design. When determining the total contributing drainage area, off-site areas and areas which remain undisturbed by construction activity shall be included unless runoff from these areas is diverted away from the sediment settling pond and is not co-mingled with sediment-laden runoff. The depth of the dewatering zone shall be less than or equal to five feet. The configuration between inlets and the outlet of the basin shall provide at least two units of length for each one unit of width (≥ 2:1 length:width ratio); however, a length to width ratio of 4:1 is recommended. When designing sediment settling ponds, the permittee shall consider public safety, especially as it relates to children, as a design factor for the sediment basin and alternative sediment controls shall be used where site limitations would preclude a safe design. Combining multiple sediment and erosion control measures in order to maximize pollutant removal is encouraged.

iii. **Sediment Barriers and Diversions.** Sheet flow runoff from denuded areas shall be intercepted by sediment barriers or diverted to a sediment pond to protect adjacent properties and water resources from sediment transported via sheet flow. Where intended to provide sediment control, sediment barriers shall be placed on a level contour downslope of the disturbed area. For most applications, standard silt fence or a 12-inch diameter tubular filter may be used as a sediment barrier. The relationship between the maximum drainage area to sediment barrier for a particular slope range is shown in the following table:

Table 3 Sediment Barrier Maximum Drainage Area Based on Slope

Maximum drainage area (in acres) to 100 linear feet of sediment barrier	Range of slope for a particular drainage area (in percent)
0.5	< 2%
0.25	≥ 2% but < 20%
0.125	≥ 20% but < 50%

Placing sediment barriers in a parallel series does not extend the size of the drainage area. Stormwater diversion practices shall be used to keep runoff away from disturbed areas and steep slopes where practicable. Diversion practices, which include swales, dikes or berms, may receive stormwater runoff from areas up to 10 acres.

iv. **Inlet Protection.** Other erosion and sediment control practices shall minimize sediment laden water entering active storm drain systems. All inlets receiving runoff from drainage areas of one or more acres will require a sediment settling pond.

v. **Surface Waters of the State Protection.** If construction activities disturb areas adjacent to surface waters of the state, structural practices shall be designed and implemented on site to protect all adjacent surface waters of the state from the impacts of sediment runoff. No structural sediment controls (e.g., the installation of silt fence or a sediment settling pond) shall be used in a surface water of the state. For all construction activities immediately adjacent to surface waters of the state, the permittee shall comply with the buffer non-numeric effluent limitation in Part II.A.6, as measured from the ordinary high water mark of the surface water. Where impacts within this buffer area are unavoidable, due to the nature of the construction (e.g., stream crossings for roads or utilities), the project shall be designed such that the number of stream crossings and the width of the disturbance within the buffer area are minimized.

vi. **Modifying Controls.** If periodic inspections or other information indicates a control has been used inappropriately or incorrectly, the permittee shall replace or modify the control for site conditions.

e. Post-Construction Stormwater Management Requirements. So that receiving stream's physical, chemical and biological characteristics are protected, and stream functions are maintained, post-construction stormwater practices shall provide long-term management of runoff quality and quantity. To meet the post-construction requirements of this permit, the SWP3 shall contain a description of the post-construction BMPs that will be installed during construction for the site and the rationale for their selection. The rationale shall address the anticipated impacts on the channel and floodplain morphology, hydrology, and water quality. Post-construction BMPs cannot be installed within a surface water of the state (e.g., wetland or stream) unless it is authorized by a CWA 401 water quality certification, CWA 404 permit, or Ohio EPA non-jurisdictional wetland/stream program approval. Note: local jurisdictions may have more stringent post-construction requirements.

i. Operation and Maintenance Plans. Detail drawings and maintenance plans shall be provided for all post-construction BMPs in the SWP3. Maintenance plans shall be provided by the permittee to the post-construction operator of the site (including homeowner associations) upon completion of construction activities (prior to termination of permit coverage). Maintenance plans shall ensure that pollutants collected within structural post-construction practices are disposed of in accordance with

local, state, and federal regulations. To ensure that stormwater management systems function as designed and constructed, the post-construction operation and maintenance plan shall be a stand-alone document which contains:

1) a designated entity for stormwater inspection and maintenance responsibilities;
2) the routine and non-routine maintenance tasks to be undertaken;
3) a schedule for inspection and maintenance;
4) any necessary legally binding maintenance easements and agreements;
5) construction drawings or excerpts showing the plan view, profile and details of the outlet(s);
6) a map showing all access and maintenance easements; and
7) for table 4a/4b practices, provide relevant elevations and associated volumes that dictate when removal of accumulated sediments must occur.

Permittees are responsible for assuring all post-construction practices meet plan specifications and intended post-construction conditions have been met (e.g., sediment removed from, and sediment storage restored to, permanent pools, sediment control outlets removed and replaced with permanent post-construction discharge structures, and all slopes and drainageways permanently stabilized), but are not responsible under this permit for operation and maintenance of post-construction practices once coverage under this permit is terminated.

ii. Point Source Dischargers. Post-construction stormwater BMPs that discharge pollutants from point sources once construction is completed may in themselves need authorization under a separate NPDES permit (one example is stormwater discharges from regulated industrial sites).

iii. No Impervious Surface. Construction activities that do not include the installation of any impervious surface (e.g., park lands), abandoned mine land reclamation activities regulated by the Ohio Department of Natural Resources, stream and wetland restoration activities, and wetland mitigation activities are not required to comply with the conditions of Part III.G.2.e of this permit. Linear construction projects (e.g., pipeline or utility line installation) which do not result in the installation of additional impervious surface are not required to comply with the conditions of Part III.G.2.e of this permit. However, linear construction projects shall be designed to minimize the number of stream crossings and the width of disturbance, and to achieve final stabilization of the disturbed area as defined in Part VII.M.1.

iv. Post-Construction BMPs. For all construction activities that will disturb two or more acres of land or will disturb less than two acres that are part of a larger common plan of development or sale which will disturb two or more acres of land, the post construction BMP(s) chosen shall be able to manage stormwater runoff for protection of stream channels, stream stability, and water quality. The BMP(s) chosen must be compatible with

site and soil conditions. Structural post-construction stormwater treatment practices shall be incorporated into the permanent drainage system for the site. The BMP(s) chosen must be sized to treat the water quality volume (WQ_v) and ensure compliance with Ohio's Water Quality Standards in OAC Chapter 3745-1. The WQ_v shall be equivalent to the volume of runoff from a 0.90-inch rainfall and shall be determined using the following equations:

$$WQ_v = Rv * P * A / 12 \qquad \text{(Equation 1)}$$

where:
WQ_v = water quality volume in acre-feet
Rv = the volumetric runoff coefficient calculated using equation 2
P = 0.90 inch precipitation depth
A = area draining into the BMP in acres

$$Rv = 0.05 + 0.9i \qquad \text{(Equation 2)}$$

where i = fraction of post-construction impervious surface

Ohio EPA recommends BMPs be designed according to the methodology described in the most current edition of the Rainwater and Land Development manual or in another design manual acceptable for use by Ohio EPA and in accordance with ORC Chapter 4733.

The BMPs listed in Tables 4a and 4b below are considered standard BMPs approved for general use. However, communities with a regulated MS4 may limit the use of some of these BMPs. BMPs shall be designed such that the drain time is long enough to provide treatment but short enough to provide storage for successive rainfall events and avoid the creation of nuisance conditions. The outlet structure for the post-construction BMP shall not discharge more than the first half of the WQv in less than one-third of the minimum drain time listed in Table 4a. The WQv is the volume of stormwater runoff that must be detained by a post-construction practice as specified by the most recent edition of the Rainwater and Land Development manual.

Post-construction practices shall be sized to treat 100% of the WQv associated with their contributing drainage area. If there is an existing post-construction BMP that treats runoff from the disturbed area and the BMP meets the post-construction requirements of this permit, no additional post-construction BMP will be required. A regional stormwater BMP may be used to meet the post-construction requirement if: (1) the BMP meets the design requirements for treating the WQv; and (2) a legal agreement is established through which the regional BMP owner or operator agrees to provide this service in the long term. Design information for such facilities such as contributing drainage areas, capacities, elevations, outlet details and drain times shall be included in the SWP3.

Table 4a Extended Detention Post-Construction Practices with Minimum Drain Times

Extended Detention Practices	Minimum Drain Time of WQv
Wet Extended Detention Basin[1,2,3]	24 hours
Extended Detention Constructed Wetland[1, 3]	24 hours
Dry Extended Detention Basin with Forebay and Micropool[1,3,4]	48 hours
Permeable Pavement – Extended Detention[1]	24 hours
Underground Storage Facility– Extended Detention[1,5]	24 hours
Sand Filter - Extended Detention[1, 6]	24 hours

Notes:
1. The outlet structure shall not discharge more than the first half of the WQv in less than one-third of the minimum drain time.
2. Provide a permanent pool with a minimum volume equal to the WQv and an extended detention volume above the permanent pool equal to the WQv.
3. An additional volume equal to 20 percent of the WQ_v shall be incorporated into the BMP for sediment storage.
4. Dry extended detention basins must include a forebay and a micropool each sized at a minimum of 0.1 x WQv and a protected outlet, or include acceptable pretreatment and a protected outlet.
5. Underground storage must have pretreatment for removal of suspended sediments included in the design and documented in the SWP3. This pretreatment shall concentrate sediment in a location where it can be readily removed. For non-infiltrating, underground extended detention systems, pretreatment shall be at least 50% effective at capturing total suspended solids according to the testing protocol established in the Alternative Post-Construction BMP Testing Protocol.
6. The WQv ponding area shall completely empty between 24 and 72 hours.

Table 4b Infiltration Post-Construction Practices with Maximum Drain Times

Infiltration Practices	Maximum Drain Time of WQv
Bioretention [1,2,3]	24 hours
Infiltration Basin[2,3]	24 hours
Infiltration Trench[3,4]	48 hours
Permeable Pavement – Infiltration[3]	48 hours
Underground Storage Facility – Infiltration[3,4,5]	48 hours

Notes:
1. Bioretention soil media shall have a permeability of approximately 1 – 5 in/hr. Meeting the soil media specifications in the Rainwater and Land Development manual is considered compliant with this requirement. Bioretention cells must have underdrains unless in-situ conditions allow for the WQv (surface ponding) plus the bioretention soil (to a depth of 24 inches) to drain completely within 48 hours.
2. Infiltrating practices with the WQv stored aboveground (bioretention, infiltration basin) shall fully drain the WQv within 24 hours to minimize nuisance effects of standing water and to promote vigorous communities of appropriate vegetation.
3. The SWP3 shall demonstrate the design infiltration rate values are derived from site-specific measurements obtained through field tests of the in-situ soil for practices designed to infiltrate the WQv.
4. Subsurface practices designed to fully infiltrate the WQv (infiltration trench, permeable pavement with infiltration, underground storage with infiltration) shall empty within 48 hours to recover storage for subsequent storm events.
5. Underground storage systems with infiltration must have adequate pretreatment of suspended sediments included in the design and documented in the SWP3 in order to minimize clogging of the infiltrating surface. Pretreatment shall concentrate sediment in a location where it can be readily removed. Examples include media filters situated

upstream of the storage or other suitable alternative approved by Ohio EPA. For infiltrating underground systems, pretreatment shall be at least 80% effective at capturing total suspended solids according to the testing protocol established in the Alternative Post-Construction BMP Testing Protocol.

v. Small Construction Activities. For all construction activities authorized under this permit which result in a disturbance less than 2 acres, a post-construction practice shall be used to treat stormwater runoff for pollutants and to reduce adverse impacts on receiving waters. The applicant must provide a justification in the SWP3 why the use of table 4a and 4b practices or runoff reduction practice are not feasible. The justification must address limiting factors which would prohibit the project going forward should table 4a and 4b practices be required. Please note that practices selected will require approval from the regulated MS4.

vi. Transportation Projects. The construction of new roads and roadway improvement projects by public entities (i.e., the state, counties, townships, cities, or villages) and the construction of publicly accessible, non-vehicular (i.e., pedestrian or shared-use) paths by public entities or non-governmental, non-profit organizations may implement post-construction BMPs in compliance with the current version (as of the effective date of this permit) of the Ohio Department of Transportation's "Location and Design Manual, Volume Two Drainage Design" that has been accepted by Ohio EPA as an alternative to the conditions of this permit.

vii. Offsite Mitigation of Post-Construction. Ohio EPA may authorize the offsite mitigation of the post-construction requirements of Part III.G.2.e of this permit on a case by case basis provided the permittee clearly demonstrates the BMPs listed in Tables 4a and 4b are not feasible and the following criteria are met: (1) a maintenance agreement or policy is established to ensure operations and treatment long-term; (2) the offsite location discharges to the same HUC-12 watershed unit; and (3) the mitigation ratio of the WQv is 1.5 to 1 or the WQv at the point of retrofit, whichever is greater. Requests for offsite mitigation must be received prior to receipt of the NOI application.

viii. Previously Developed Areas. Ohio EPA encourages the redevelopment of untreated impervious areas through a reduction of the WQv treatment requirement. For an untreated previously developed area, one or a combination of the following two conditions shall be met:

- A 20 percent net reduction of the site's volumetric runoff coefficient through impervious area reduction with soil restoration or replacing impervious roof area with green roof area (for these purposes green roofs shall be considered pervious surface) or
- Treatment of a portion of the site using a practice meeting Table 4a/4b criteria for which the WQv (see Equation 1) equals or exceeds the WQv_R determined with the following equation:

$$WQv_R = P * A * [(Rv_1*0.2) + (Rv_2 - Rv_1)] / 12 \quad \text{(Equation 3)}$$

where

WQv_R = Redevelopment Water Quality Volume in acre-feet
P = 0.90 inches
A = disturbed area in acres
Rv_1 = volumetric runoff coefficient for existing (current site) conditions within the disturbed area
Rv_2 = volumetric runoff coefficient for proposed (post-construction site) conditions within the disturbed area

and is located to treat impervious areas most likely to generate the highest pollutant load, such as parking lots or roadways.

This section does not apply to previous development that was obligated to obtain CGP coverage and provide management of the WQv under previous generations of this general permit (i.e., after April 21, 2003).

ix. Runoff Reduction Practices. The size of structural post-construction practices used to capture and treat the WQv can be reduced by incorporating runoff reducing practices into the design of the site's drainage system. The approach to calculate and document runoff reduction is detailed in the Rainwater and Land Development Manual. BMP-specific runoff reduction volumes are set by specifications in the Rainwater and Land Development Manual for the following practices:

- Impervious surface disconnection
- Rainwater harvesting
- Bioretention
- Infiltration basin
- Infiltration trench
- Permeable pavement with infiltration
- Underground storage with infiltration
- Grass swale
- Sheet flow to filter strip
- Sheet flow to conservation area

A runoff reduction approach may be used to meet the groundwater recharge requirements in the Big Darby Creek Watershed. The runoff reduction practices used for groundwater recharge may be used to reduce the WQv requirement, see appendix A for details on groundwater recharge requirements.

In order to promote the implementation of green infrastructure, the Director may consider the use of runoff reducing practices to demonstrate compliance with Part III.G.2.e of this permit for areas of the site not draining into a common drainage system of the site, e.g., sheet flow from

perimeter areas such as the rear yards of residential lots, low density development scenarios, or where the permittee can demonstrate that the intent of pollutant removal and stream protection, as required in Part III.G.2.e of this permit is being addressed through non-structural post-construction BMPs based upon review and approval by Ohio EPA.

x. Use of Alternative Post-Construction BMPs. This permit does not preclude the use of innovative or experimental post-construction stormwater management technologies. Permittees shall request approval from Ohio EPA to use alternative post-construction BMPs on a case-by-case basis. The permittee shall submit an application (form maintained on the Ohio EPA Website) to Ohio EPA for any proposed alternative post-construction BMP and secure any approval from Ohio EPA before permittees submit an NOI for permit coverage. Where the development project is located within a regulated municipal separate storm sewer system (MS4) community, the use of an alternative practice requires pre-approval by the MS4 before submittal of the application to Ohio EPA. Ohio EPA requires that approvals for alternative post-construction BMPs are finalized.

To use an alternative post-construction BMP, the permittee must demonstrate that use of a BMP listed in Tables 4a and 4b is not feasible and the proposed alternative post-construction BMP meets the following three criteria:

a. Alternative post-construction BMPs must be capable of providing sustained, long-term treatment of stormwater. It must be durable and maintainable in accordance with industry standards.

b. Alternative post-construction BMPs shall previously have been tested to confirm stormwater treatment efficacy equivalent to those BMPs listed in Tables 4a and 4b using the protocol described in this permit. BMP testing may include laboratory testing, field testing, or both. For an alternative BMP to be acceptable, the test results must demonstrate that the minimum treatment rate is 80% TSS removal at the design flow rate for laboratory tested BMP. Field test results must demonstrate the minimum treatment rate is 80% TSS removal for influent concentrations equal to or greater than 100 mg/L TSS. If the influent concentration to the proposed alternative BMP is less than 100 mg/L TSS in the field, then the BMP must achieve an average effluent concentration less than or equal to 20 mg/L TSS.

c. The discharge rate from the proposed alternative practice shall be reduced to prevent stream bed erosion and protect the physical and biological stream integrity unless there will be negligible hydrological impact to the receiving surface water of the state. Discharge rate is considered to have a negligible impact if the permittee can demonstrate that the entire WQv is recharged to groundwater, the larger common plan of development or sale will create less than one acre of impervious surface or the stormwater drainage system of the

development discharges directly into a large river with drainage area equal to 100 square miles or larger upstream of the development site or to a lake where the development area is less than 5 percent of the watershed area, unless a TMDL has identified water quality problems into the receiving surface waters of the state. If the conditions above that minimize the potential for hydrological impact to the receiving surface water of the state do not exist, then the alternative post-construction BMP must prevent stream erosion by reducing the flow rate from the WQV. In such cases, discharge of the WQV must be controlled. A second stormwater BMP that provides extended detention of the WQv may be needed to meet the post-construction criteria.

Alternative BMPs that utilize treatment processes such as filtering or centrifugal separation, rather than a detention and settling volume, must be designed to ensure treatment of 90 percent of the average annual runoff volume. For the design of these BMPs, the water quality flow rate (WQF) shall be determined utilizing the Rational Method (Equation 4) with an intensity (i) appropriate for the water quality precipitation event. This intensity shall be calculated using the table given in Appendix C.

$$WQF = C * i * A \qquad \text{(Equation 4)}$$

Where

WQF = water quality flow rate in cubic feet per second (cfs)
C = rational method runoff coefficient
i = intensity (in/hr)
A = area draining to the BMP (acres)

xi. Alternative Post-Construction BMP Testing Protocol. For laboratory testing, the alternative BMP shall be tested using sediment with a specific gravity of 2.65, a particle size distribution closely matching the distribution shown in Table 5, and total suspended sediment (TSS) concentrations within 10% of 200 mg/L (180 mg/L – 220 mg/L TSS).

Table 5 Particle Size Distribution for Testing Alternative Post-Construction BMPs

Particle Size (microns)	Percent Finer (%)
1,000	100
500	95
250	90
150	75
100	60
75	50
50	45
20	35
8	20
5	10
2	5

- For field testing, the alternative BMP shall be tested using stormwater runoff from the field, not altered by adding aggregate or subjecting to unusually high sediment loads such as those from unstabilized construction disturbance. The stormwater runoff used for field testing shall be representative of runoff from the proposed installation site for the alternative BMP after all construction activities have ceased and the ground has been stabilized. The influent and effluent TSS concentrations of stormwater runoff must be collected in the field.

- Testing of alternative post-construction BMPs shall be performed or overseen by a qualified independent, third-party testing organization;

- Testing shall demonstrate the maximum flow rate at which the alternative post-construction BMP can achieve the necessary treatment efficacy, including consideration for the potential of sediment resuspension;

- Testing shall demonstrate the maximum volume of sediment and floatables that can be collected in the alternative post-construction BMP before pollutants must be removed to maintain 80% treatment efficacy;

- Testing shall indicate the recommended maintenance frequency and maintenance protocol to ensure ongoing performance of the alternative post-construction BMP.

The alternative post-construction BMP testing protocol described in this section is similar to testing requirements specified by the New Jersey Department of Environmental Protection (NJDEP) for stormwater Manufactured Treatment Devices (MTD) and therefore testing results certified by NJDEP shall be accepted by Ohio EPA. For a list of BMPs that have been certified by NJDEP, see the website: **www.njstormwater.org**.

Another nationally recognized stormwater product testing procedure is the Technology Assessment Protocol – Ecology (TAPE) administered by the State of Washington, Department of Ecology. Testing results for a proposed alternative post-construction BMPcertified by TAPE under their general use designation and basic treatment category shall be accepted by Ohio EPA. The State of Washington, Department of Ecology website is **https://ecology.wa.gov/**.

Alternative post-construction BMPs may include, but are not limited to: vegetated swales, vegetated filter strips, hydrodynamic separators, high-flow media filters, cartridge filters, membrane filters, subsurface flow wetlands, multi-chamber treatment trains, road shoulder media filter drains, wetland channels, rain barrels, green roofs, and rain gardens. The Director may also consider non-structural post-construction approaches.

f. Surface Water Protection. If the project site contains any streams, rivers, lakes, wetlands or other surface waters, certain construction activities at the site may be regulated under the CWA and/or state isolated wetland permit requirements. Sections 404 and 401 of the Act regulate the discharge of dredged or fill material into surface waters and the impacts of such activities on water quality, respectively. Construction activities in surface waters which may be subject to CWA regulation and/or state isolated wetland permit requirements include, but are not limited to: sewer line crossings, grading, backfilling or culverting streams, filling wetlands, road and utility line construction, bridge installation and installation of flow control structures. If the project contains streams, rivers, lakes or wetlands or possible wetlands, the permittee shall contact the appropriate U.S. Army Corps of Engineers District Office. (CAUTION: Any area of seasonally wet hydric soil is a potential wetland - please consult the Soil Survey and list of hydric soils for your County, available at your county's Soil and Water Conservation District. If you have any questions about Section 401 water quality certification, please contact the Ohio Environmental Protection Agency, Section 401 Coordinator.)

U.S. Army Corps of Engineers (Section 404 regulation):

- Huntington, WV District (304) 399-5210 (Muskingum River, Hocking River, Scioto River, Little Miami River, and Great Miami River Basins)
- Buffalo, NY District (716) 879-4330 (Lake Erie Basin)
- Pittsburgh, PA District (412) 395-7155 (Mahoning River Basin)
- Louisville, KY District (502) 315-6686 (Ohio River)

Ohio EPA 401/404 and non-jurisdictional stream/wetland coordinator can be contacted at (614) 644-2001 (all of Ohio)

Concentrated stormwater runoff from BMPs to natural wetlands shall be converted to diffuse flow before the runoff enters the wetlands. The flow should be released such that no erosion occurs downslope. Level spreaders may need to be placed in series, particularly on steep sloped sites, to ensure non-erosive velocities. Other structural BMPs may be used between stormwater features and natural wetlands, in order to protect the natural hydrology, hydroperiod, and wetland flora. If the applicant proposes to discharge to natural wetlands, a hydrologic analysis shall be performed. The applicant shall attempt to match the pre-development hydroperiods and hydrodynamics that support the wetland. The applicant shall assess whether their construction activity will adversely impact the hydrologic flora and fauna of the wetland. Practices such as vegetative buffers, infiltration basins, conservation of forest cover, and the preservation of intermittent streams, depressions, and drainage corridors may be used to maintain wetland hydrology.

g. Other controls.

i. **Non-Sediment Pollutant Controls.** In accordance with Part II.E, no solid (other than sediment) or liquid waste, including building materials, shall be discharged in stormwater runoff. The permittee must implement all necessary BMPs to prevent the discharge of non-sediment pollutants to the drainage system of the site or surface waters of the state or an

MS4. Under no circumstance shall wastewater from the washout of concrete trucks, stucco, paint, form release oils, curing compounds, and other construction materials be discharged directly into a drainage channel, storm sewer or surface waters of the state. Also, no pollutants from vehicle fuel, oils, or other vehicle fluids can be discharged to surface waters of the state. No exposure of stormwater to waste materials is recommended. The SWP3 must include methods to minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, and sanitary waste to precipitation, stormwater runoff, and snow melt. In accordance with Part II.D.3, the SWP3 shall include measures to prevent and respond to chemical spills and leaks. You may also reference the existence of other plans (i.e., Spill Prevention Control and Countermeasure (SPCC) plans, spill control programs, Safety Response Plans, etc.) provided that such plan addresses conditions of this permit condition and a copy of such plan is maintained on site.

ii. **Off-site traffic.** Off-site vehicle tracking of sediments and dust generation shall be minimized. In accordance with Part II.D.1, the SWP3 shall include methods to minimize the discharge of pollutants from equipment and vehicle washing, wheel washwater, and other washwaters. No detergents may be used to wash vehicles. Washwaters shall be treated in a sediment basin or alternative control that provides equivalent treatment prior to discharge.

iii. **Compliance with other requirements.** The SWP3 shall be consistent with applicable State and/or local waste disposal, sanitary sewer or septic system regulations, including provisions prohibiting waste disposal by open burning and shall provide for the proper disposal of contaminated soils to the extent these are located within the permitted area.

iv. **Trench and ground water control**. In accordance with Part II.C, there shall be no turbid discharges to surface waters of the state resulting from dewatering activities. If trench or ground water contains sediment, it shall pass through a sediment settling pond or other equally effective sediment control device, prior to being discharged from the construction site. Alternatively, sediment may be removed by settling in place or by dewatering into a sump pit, filter bag or comparable practice. Ground water which does not contain sediment or other pollutants is not required to be treated prior to discharge. However, care must be taken when discharging ground water to ensure that it does not become pollutant-laden by traversing over disturbed soils or other pollutant sources.

v. **Contaminated Sediment.** Where construction activities are to occur on sites with contamination from previous activities, operators shall be aware that concentrations of materials that meet other criteria (is not considered a Hazardous Waste, meeting VAP standards, etc.) may still result in stormwater discharges in excess of Ohio Water Quality Standards. Such discharges are not authorized by this permit. Appropriate BMPs include, but are not limited to:

- The use of berms, trenches, and pits to collect contaminated runoff and prevent discharges;
- Pumping runoff into a sanitary sewer (with prior approval of the sanitary sewer operator) or into a container for transport to an appropriate treatment/disposal facility; and
- Covering areas of contamination with tarps or other methods that prevent stormwater from coming into contact with the material.

Operators should consult with Ohio EPA Division of Surface Water prior to seeking permit coverage.

h. Maintenance. All temporary and permanent control practices shall be maintained and repaired as needed to ensure continued performance of their intended function. All sediment control practices must be maintained in a functional condition until all up-slope areas they control are permanently stabilized. The SWP3 shall be designed to minimize maintenance requirements. The applicant shall provide a description of maintenance procedures needed to ensure the continued performance of control practices.

i. Inspections. The permittee shall assign "qualified inspection personnel" to conduct inspections to ensure that the control practices are functional and to evaluate whether the SWP3 is adequate and properly implemented in accordance with the schedule proposed in Part III.G.1.h of this permit or whether additional control measures are required. At a minimum, procedures in a SWP3 shall provide that all controls on the site are inspected:

- after any storm event greater than one-half inch of rain per 24-hour period by the end of the next calendar day, excluding weekends and holidays unless work is scheduled; and
- once every seven calendar days.

The inspection frequency may be reduced to at least once every month for dormant sites if:

- the entire site is temporarily stabilized or
- runoff is unlikely due to weather conditions for extended periods of time (e.g., site is covered with snow, ice, or the ground is frozen).

The beginning and ending dates of any reduced inspection frequency shall be documented in the SWP3. Once a definable area has achieved final stabilization, the area may be marked on the SWP3 and no further inspection requirements shall apply to that portion of the site.

Following each inspection, a checklist must be completed and signed by the qualified inspection personnel representative. Inspection reports may be prepared, signed, and kept electronically, rather than in paper form, if the records are: (a) in a format that can be read in a similar manner as a paper record; (b) legally dependable with no less evidentiary value than their paper equivalent; and (c) immediately accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be, if the records were stored in

paper form. For additional guidance on the proper practices to follow for the electronic retention of inspection report records, refer to this general permit's Fact Sheet at **https://epa.ohio.gov/divisions-and-offices/surface-water/permitting/storm-water-discharges-from-small-and-large-construction-activities--general-permit**. At a minimum, the inspection report shall include:

i. the inspection date;
ii. names, titles, and qualifications of personnel making the inspection;
iii. weather information for the period since the last inspection (or since commencement of construction activity if the first inspection) including a best estimate of the beginning of each storm event, duration of each storm event, approximate amount of rainfall for each storm event (in inches), and whether any discharges occurred;
iv. weather information and a description of any discharges occurring at the time of the inspection;
v. location(s) of discharges of sediment or other pollutants from the site;
vi. location(s) of BMPs that need to be maintained;
vii. location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
viii. location(s) where additional BMPs are needed that did not exist at the time of inspection; and
ix. corrective action required including any changes to the SWP3 necessary and implementation dates.

Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of or the potential for pollutants entering the drainage system. Erosion and sediment control measures identified in the SWP3 shall be observed to ensure that those are operating correctly. Discharge locations shall be inspected to ascertain whether erosion and sediment control measures are effective in preventing significant impacts to the receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site vehicle tracking.

The permittee shall maintain for three years following the submittal of a notice of termination form, a record summarizing the results of the inspection, names(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the SWP3 and a certification as to whether the facility is in compliance with the SWP3 and the permit and identify any incidents of non-compliance. The record and certification shall be signed in accordance with Part V.G. of this permit.

i. **When practices require repair or maintenance.** If the inspection reveals that a control practice is in need of repair or maintenance, with the exception of a sediment settling pond, it shall be repaired or maintained within 3 days of the inspection. Sediment settling ponds shall be repaired or maintained within 10 days of the inspection.

ii. **When practices fail to provide their intended function.** If the inspection reveals that a control practice fails to perform its intended

function and that another, more appropriate control practice is required, the SWP3 shall be amended and the new control practice shall be installed within 10 days of the inspection.

iii. **When practices depicted on the SWP3 are not installed.** If the inspection reveals that a control practice has not been implemented in accordance with the schedule contained in Part III.G.1.h of this permit, the control practice shall be implemented within 10 days from the date of the inspection. If the inspection reveals that the planned control practice is not needed, the record shall contain a statement of explanation as to why the control practice is not needed.

3. Approved State or local plans. All dischargers regulated under this general permit must comply, except those exempted under state law, with the lawful requirements of municipalities, counties and other local agencies regarding discharges of stormwater from construction activities. All erosion and sediment control plans and stormwater management plans approved by local officials shall be retained with the SWP3 prepared in accordance with this permit. Applicable requirements for erosion and sediment control and stormwater management approved by local officials are, upon submittal of a NOI form, incorporated by reference and enforceable under this permit even if they are not specifically included in an SWP3 required under this permit. When the project is located within the jurisdiction of a regulated municipal separate storm sewer system (MS4), the permittee shall certify that the SWP3 complies with the requirements of the stormwater management program of the MS4 operator.

4. Exceptions. If specific site conditions prohibit the implementation of any of the erosion and sediment control practices contained in this permit or site-specific conditions are such that implementation of any erosion and sediment control practices contained in this permit will result in no environmental benefit, then the permittee shall provide justification for rejecting each practice based on site conditions. Exceptions from implementing the erosion and sediment control standards contained in this permit will be approved or denied on a case-by-case basis.

   The permittee may request approval from Ohio EPA to use alternative methods to satisfy conditions in this permit if the permittee can demonstrate that the alternative methods are sufficient to protect the overall integrity of receiving streams and the watershed. Alternative methods will be approved or denied on a case-by-case basis.

PART IV. NOTICE OF TERMINATION REQUIREMENTS

A. Failure to notify.

The terms and conditions of this permit shall remain in effect until a signed Notice of Termination (NOT) form is submitted and permit coverage is terminated by Ohio EPA. Failure to submit an NOT constitutes a violation of this permit and may affect the ability of the permittee to obtain general permit coverage in the future.

B. When to submit an NOT.

1. Permittees wishing to terminate coverage under this permit shall submit an NOT form in accordance with Part V.G. of this permit. Compliance with this permit is required until an NOT form is submitted and permit coverage is terminated by Ohio EPA. Prior to submitting the NOT form, the permittee shall conduct a site inspection in accordance with Part III.G.2.i of this permit and have a maintenance plan in place to ensure all post-construction BMPs will be maintained in perpetuity.

2. All permittees shall submit an NOT form within 45 days of completing all permit requirements. Enforcement actions may be taken if a permittee submits an NOT form without meeting one or more of the following conditions:

    a. Final stabilization (see definition in Part VII) has been achieved on all portions of the site for which the permittee is responsible (including, if applicable, returning agricultural land to its pre-construction agricultural use);

    b. Another operator(s) has assumed control over all areas of the site that have not been finally stabilized;

    c. A maintenance plan is in place to ensure all post construction BMPs are adequately maintained in the long-term;

    d. For non-residential developments, all elements of the stormwater pollution prevention plan have been completed, the disturbed soil at the identified facility have been stabilized and temporary erosion and sediment control measures have been removed at the appropriate time, or all stormwater discharges associated with construction activity from the identified facility that are authorized by the above referenced NPDES general permit have otherwise been eliminated. (i)For residential developments only, temporary stabilization has been completed and the lot, which includes a home, has been transferred to the homeowner; (ii) final stabilization has been completed and the lot, which does not include a home, has been transferred to the property owner; (iii) no stabilization has been implemented on a lot, which includes a home, and the lot has been transferred to the homeowner; or

    e. An exception has been granted under Part III.G.4.

C. How to submit an NOT.

To terminate permit coverage, the permitee shall submit a complete and accurate Notice of Termination (NOT) form using Ohio EPA's electronic application form which is available through the Ohio EPA eBusiness Center at: https://ebiz.epa.ohio.gov/. Submission through the Ohio EPA eBusiness Center will require establishing an Ohio EPA eBusiness Center account and obtaining a unique Personal Identification Number (PIN) for final submission of the NOT. Existing eBusiness Center account holders can access the NOT form through their existing account and submit using their existing PIN. Please see the following link for guidance: **https://epa.ohio.gov/divisions-and-offices/surface-water/permitting/electronic-business-services-sub/streams.** Alternatively, if you are unable to access the NOT form through the agency eBusiness Center due to a demonstrated hardship, the NOT may be submitted on paper NOT forms provided by Ohio EPA. NOT information shall be typed on the form. Please contact

Ohio EPA, Division of Surface Water at (614) 644-2001 if you wish to receive a paper NOT form.

PART V. STANDARD PERMIT CONDITIONS.

A. Duty to comply.

The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of ORC Chapter 6111 and is grounds for enforcement action.

Ohio law imposes penalties and fines for persons who knowingly make false statements or knowingly swear or affirm the truth of a false statement previously made.

B. Continuation of an expired general permit.

An expired general permit continues in force and effect until a new general permit is issued.

C. Need to halt or reduce activity not a defense.

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to mitigate.

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. Duty to provide information.

The permittee shall furnish to the director, within 10 days of written request, any information which the director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the director upon request copies of records required to be kept by this permit.

F. Other information.

When the permittee becomes aware that he or she failed to submit any relevant facts or submitted incorrect information in the NOI, SWP3, NOT or in any other report to the director, he or she shall promptly submit such facts or information.

G. Signatory requirements.

All NOIs, NOTs, SWP3s, reports, certifications or information either submitted to the director or that this permit requires to be maintained by the permittee, shall be signed.

1. These items shall be signed as follows:

a. For a corporation: By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

   i. A president, secretary, treasurer or vice-president of the corporation in charge of a principal business function or any other person who performs similar policy or decision-making functions for the corporation; or

   ii. The manager of one or more manufacturing, production or operating facilities, provided, the manager is authorized to make management decisions that govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal or other public agency: By either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes (1) the chief executive officer of the agency or (2) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA).

2. All reports required by the permits and other information requested by the director shall be signed by a person described in Part V.G.1 of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

   a. The authorization is made in writing by a person described in Part V.G.1 of this permit and submitted to the director;

   b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, operator of a well or well field, superintendent, position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

   c. The written authorization is submitted to the director.

3. Changes to authorization. If an authorization under Part V.G.2 of this permit is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Part V.G.2 of

this permit must be submitted to the director prior to or together with any reports, information or applications to be signed by an authorized representative.

H. Certification.

Any person signing documents under this section shall make the following certification:

> *"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*

I. Oil and hazardous substance liability.

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject under section 311 of the CWA or 40 CFR Part 112. 40 CFR Part 112 establishes procedures, methods and equipment and other requirements for equipment to prevent the discharge of oil from non-transportation-related onshore and offshore facilities into or upon the navigable surface waters of the state or adjoining shorelines.

J. Property rights.

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

K. Severability.

The provisions of this permit are severable and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

L. Transfers.

Ohio NPDES general permit coverage is transferable. Ohio EPA must be notified in writing sixty days prior to any proposed transfer of coverage under an Ohio NPDES general permit. The transferee must inform Ohio EPA it will assume the responsibilities of the original permittee transferor.

M. Environmental laws.

No condition of this permit shall release the permittee from any responsibility or requirements under other environmental statutes or regulations.

N. Proper operation and maintenance.

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit and with the requirements of SWP3s. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by a permittee only when necessary to achieve compliance with the conditions of the permit.

O. Inspection and entry.

The permittee shall allow the director or an authorized representative of Ohio EPA, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit;

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment); and

4. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

P. Duty to Reapply.

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.

Q. Permit Actions.

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

R. Bypass.

The provisions of 40 CFR Section 122.41(m), relating to “Bypass,” are specifically incorporated herein by reference in their entirety. For definition of “Bypass,” see Part VII.C.

S. Upset.

The provisions of 40 CFR Section 122.41(n), relating to “Upset,” are specifically incorporated herein by reference in their entirety. For definition of “Upset,” see Part VII.GG.

T. Monitoring and Records.

The provisions of 40 CFR Section 122.41(j), relating to "Monitoring and Records," are specifically incorporated herein by reference in their entirety.

U. Reporting Requirements.

The provisions of 40 CFR Section 122.41(l), relating to "Reporting Requirements," are specifically incorporated herein by reference in their entirety.

V. General Effluent Limitation

The effluent shall, at all times, be free of substances:

1. In amounts that will settle to form putrescent, or otherwise objectionable, sludge deposits; or that will adversely affect aquatic life or waterfowl;
2. Of an oily, greasy, or surface-active nature, and of other floating debris, in amounts that will form noticeable accumulations of scum, foam, or sheen;
3. In amounts that will alter the natural color or odor of the receiving water to such degree as to create a nuisance;
4. In amounts that either singly or in combination with other substances are toxic to human, animal, or aquatic life;
5. In amounts that are conducive to the growth of aquatic weeds or algae to the extent that such growth become inimical to more desirable forms of aquatic life, or create conditions that are unsightly, or constitute a nuisance in any other fashion;
6. In amounts that will impair designated instream or downstream water uses.

PART VI. REOPENER CLAUSE

If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with construction activity covered by this permit, the permittee of such discharge may be required to obtain coverage under an individual permit or an alternative general permit in accordance with Part I.C of this permit or the permit may be modified to include different limitations and/or requirements.

Permit modification or revocation will be conducted according to ORC Chapter 6111.

PART VII. DEFINITIONS

A. "Act" means Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub. L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, Pub. L. 97-117 and Pub. L. 100-4, 33 U.S.C. 1251 et. seq.

B. "Bankfull channel" means a channel flowing at channel capacity and conveying the bankfull discharge. Delineated by the highest water level that has been maintained for a sufficient period of time to leave evidence on the landscape, such as the point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial or the point at which the clearly scoured substrate of the stream ends and terrestrial vegetation begins.

C. "Bankfull discharge" means the streamflow that fills the main channel and just begins to spill onto the floodplain; it is the discharge most effective at moving sediment and forming the channel.

D. "Best management practices (BMPs)" means schedules of activities, prohibitions of practices, maintenance procedures and other management practices (both structural and non-structural) to prevent or reduce the pollution of surface waters of the state. BMP's also include treatment requirements, operating procedures and practices to control plant and/or construction site runoff, spillage or leaks, sludge or waste disposal or drainage from raw material storage.

E. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

F. "Channelized stream" means the definition set forth in Section 6111.01 (M) of the ORC.

G. "Commencement of construction" means the initial disturbance of soils associated with clearing, grubbing, grading, placement of fill, or excavating activities or other construction activities.

H. "Concentrated stormwater runoff" means any stormwater runoff which flows through a drainage pipe, ditch, diversion or other discrete conveyance channel.

I. "Director" means the director of the Ohio Environmental Protection Agency.

J. "Discharge" means the addition of any pollutant to the surface waters of the state from a point source.

K. "Disturbance" means any clearing, grading, excavating, filling, or other alteration of land surface where natural or man-made cover is destroyed in a manner that exposes the underlying soils.

L. "Drainage watershed" means for purposes of this permit the total contributing drainage area to a BMP, i.e., the "watershed" directed to the practice. This would also include any off-site drainage.

M. "Final stabilization" means that either:

1. All soil disturbing activities at the site are complete and a uniform perennial vegetative cover (e.g., evenly distributed, without large bare areas) with a density of at least 70 percent cover for the area has been established on all unpaved areas and areas not covered by permanent structures or equivalent stabilization measures (such as the use of mulches, rip-rap, gabions or geotextiles) have been employed. In addition, all temporary erosion and sediment control practices are removed and disposed of and all trapped sediment is permanently stabilized to prevent further erosion; or

2. For individual lots in residential construction by either:

    a. The homebuilder completing final stabilization as specified above or

b. The homebuilder establishing temporary stabilization including perimeter controls for an individual lot prior to occupation of the home by the homeowner and informing the homeowner of the need for and benefits of, final stabilization. (Homeowners typically have an incentive to put in the landscaping functionally equivalent to final stabilization as quick as possible to keep mud out of their homes and off sidewalks and driveways.); or

3. For construction projects on land used for agricultural purposes (e.g., pipelines across crop or range land), final stabilization may be accomplished by returning the disturbed land to its pre-construction agricultural use. Areas disturbed that were previously used for agricultural activities, such as buffer strips immediately adjacent to surface waters of the state and which are not being returned to their pre-construction agricultural use, must meet the final stabilization criteria in (1) or (2) above.

N. "General contractor" – for the purposes of this permit, the primary individual or company solely accountable to perform a contract. The general contractor typically supervises activities, coordinates the use of subcontractors, and is authorized to direct workers at a site to carry out activities required by the permit.

O. "Individual lot NOI" means a Notice of Intent for an individual lot to be covered by this permit (see Part I of this permit).

P. "Larger common plan of development or sale"- means a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan.

Q. "MS4" means municipal separate storm sewer system which means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains) that are:

1. Owned or operated by the federal government, state, municipality, township, county, district(s) or other public body (created by or pursuant to state or federal law) including special district under state law such as a sewer district, flood control district or drainage districts or similar entity or a designated and approved management agency under section 208 of the act that discharges into surface waters of the state; and
2. Designed or used for collecting or conveying solely stormwater,
3. Which is not a combined sewer and
4. Which is not a part of a publicly owned treatment works.

R. "National Pollutant Discharge Elimination System (NPDES)" means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits and enforcing pretreatment requirements, under sections 307, 402, 318 and 405 of the CWA. The term includes an "approved program."

S. "Natural channel design" means an engineering technique that uses knowledge of the natural process of a stream to create a stable stream that will maintain its form and function over time.

T. "NOI" means notice of intent to be covered by this permit.

U. "NOT" means notice of termination.

V. "Operator" means any party associated with a construction project that meets either of the following two criteria:

1. The party has day-to-day operational control of all activities at a project which are necessary to ensure compliance with a SWP3 for the site and all permit conditions including the ability to authorize modifications to the SWP3, construction plans and site specification to ensure compliance with the General Permit, or

2. Property owner meets the definition of operator should the party which has day to day operational control require additional authorization from the owner for modifications to the SWP3, construction plans, and/or site specification to ensure compliance with the permit or refuses to accept all responsibilities as listed above (Part VII.V.1).

Subcontractors generally are not considered operators for the purposes of this permit. As set forth in Part I.F.1, there can be more than one operator at a site and under these circumstances, the operators shall be co-permittees.

W. "Ordinary high water mark" means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

X. "Owner or operator" means the owner or operator of any "facility or activity" subject to regulation under the NPDES program.

Y. "Permanent stabilization" means the establishment of permanent vegetation, decorative landscape mulching, matting, sod, rip rap and landscaping techniques to provide permanent erosion control on areas where construction operations are complete or where no further disturbance is expected for at least one year.

Z. "Percent imperviousness" means the impervious area created divided by the total area of the project site.

AA. "Point source" means any discernible, confined and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or the floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

BB. "Qualified inspection personnel" means a person knowledgeable in the principles and practice of erosion and sediment controls, who possesses the skills to assess all conditions at the construction site that could impact stormwater quality and to assess

the effectiveness of any sediment and erosion control measures selected to control the quality of stormwater discharges from the construction activity.

CC. "Rainwater and Land Development" is a manual describing construction and post-construction best management practices and associated specifications. A copy of the manual is maintained on the Ohio EPA website.

DD. "Riparian area" means the transition area between flowing water and terrestrial (land) ecosystems composed of trees, shrubs and surrounding vegetation which serve to stabilize erodible soil, improve both surface and ground water quality, increase stream shading and enhance wildlife habitat.

EE. "Runoff coefficient" means the fraction of total rainfall that will appear at the conveyance as runoff.

FF. "Sediment settling pond" means a sediment trap, sediment basin or permanent basin that has been temporarily modified for sediment control, as described in the latest edition of the Rainwater and Land Development manual.

GG. "State isolated wetland permit requirements" means the requirements set forth in Sections 6111.02 through 6111.029 of the ORC.

HH. "Stormwater" means stormwater runoff, snow melt and surface runoff and drainage.

II. "Steep slopes" means slopes that are 15 percent or greater in grade. Where a local government or industry technical manual has defined what is to be considered a "steep slope," this permit's definition automatically adopts that definition.

JJ. "Stream edge" means the ordinary high water mark.

KK. "Subcontractor" – for the purposes of this permit, an individual or company that takes a portion of a contract from the general contractor or from another subcontractor.

LL. "Surface waters of the state" or "water bodies" means all streams, lakes, reservoirs, ponds, marshes, wetlands or other waterways which are situated wholly or partially within the boundaries of the state, except those private waters which do not combine or effect a junction with natural surface or underground waters. Waters defined as sewerage systems, treatment works or disposal systems in Section 6111.01 of the ORC are not included.

MM. "SWP3" means stormwater pollution prevention plan.

NN. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

OO. "Temporary stabilization" means the establishment of temporary vegetation, mulching, geotextiles, sod, preservation of existing vegetation and other techniques capable of quickly establishing cover over disturbed areas to provide erosion control between construction operations.

PP. "Water Quality Volume (WQ_v)" means the volume of stormwater runoff which must be captured and treated prior to discharge from the developed site after construction is complete.

APPENDICES

Appendix A
Big Darby Creek Watershed

CONTENTS OF THIS APPENDIX

A.1 Permit Area
A.2 TMDL Conditions
A.3 Sediment Settling Ponds and Sampling
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A.7 Groundwater Recharge Requirements
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Attachment A-B: Stream Assessment and Restoration

A.1 Permit Area.

This appendix to Permit OHC00006 applies to the entire Big Darby Creek Watershed located within the State of Ohio. Please see Attachment A for permit area boundaries.

A.2 TMDL Conditions.

This general permit requires control measures/BMPs for construction sites that reflect recommendations set forth in the U.S. EPA approved Big Darby Creek TMDL.

A.3 Sediment Settling Ponds and Sampling

Sediment settling ponds additional conditions. The sediment settling pond shall be sized to provide a minimum dewatering volume of 134 cubic yards per acre of drainage area and maintain a target discharge performance standard of 45 mg/l Total Suspended Solids (TSS) or 50 Nephelometric Turbidity Units (NTUs) up to a 0.75-inch rainfall event within a 24-hour period. Unless infeasible, sediment settling ponds must be dewatered at the pond surface using a skimmer or equivalent device. The depth of the sediment settling pond must be less than or equal to five feet. Sediment must be removed from the sediment settling pond when the design capacity has been reduced by 40 percent (This is typically reached when sediment occupies one-half of the basin depth).

Silt Fence and Diversions. For sites five or more acres in size, the use of sediment barriers as a primary sediment control is prohibited. Centralized sediment basins shall be used for sites 5 or more acres in size. Diversions shall direct all stormwater runoff from the disturbed areas to the impoundment intended for sediment control. The sediment basins and associated diversions shall be implemented prior to the major earth disturbing activity.

The permittee shall sample in accordance with sampling procedures outlined in 40 CFR 136. Sampling shall occur as follows:

i. Occur at the outfall of each sediment settling pond associated with the site. Each associated outfall shall be identified by a three-digit number (001, 002, etc.);

ii. The applicable rainfall event for sampling to occur shall be a rainfall event of 0.25-inch to a 0.75-inch rainfall event to occur within a 24-hour period. Grab sampling shall be initiated at a site within 14 days, or the first applicable rainfall event thereafter, once upslope disturbance of each sampling location is initiated and shall continue on a quarterly basis. Quarterly periods shall be represented as January - March, April - June, July - September and October - December. Sampling results shall be retained on site and available for inspection.

If any sample is greater than the performance standard of 45 mg/l TSS or 50 NTUs, the permittee shall modify the SWP3 and install/implement new control practice(s) within 10 days to ensure the performance standard is maintained. Within 3 days of improvement(s), or the first applicable rainfall event thereafter, the permittee shall resample to ensure SWP3 modifications maintain the performance standard target.

For each sample taken, the permittee shall record the following information:

- the outfall and date of sampling;
- the person(s) who performed the sampling;
- the date the analyses were performed on those samples;
- the person(s) who performed the analyses;
- the analytical techniques or methods used; and
- the results of all analyses.

Both quarterly and sampling results following a discharge target exceedance shall be retained on site and available for inspection.

A.4 Post-Construction Stormwater Management Selection.

For all construction activities authorized under this permit that fall within the watershed of the Big Darby Creek, a Table 4b practice shall be used to treat stormwater runoff for pollutants, to reduce adverse impacts on receiving waters, and to further support groundwater recharge if feasible. The applicant must provide a justification in the SWP3 why the use of table 4b practices are not feasible. The justification must address limiting factors which would prohibit the project going forward should Table 4b practices be required. Please note that practices selected will require approval from the regulated MS4.

A.5 Riparian Setback Requirements.

The SWP3 shall clearly delineate the boundary of required stream setback distances. No construction activity shall occur, without appropriate mitigation, within the delineated setback boundary except activities associated with restoration or recovery of natural floodplain and channel form characteristics as described in Attachment B, stormwater conveyances from permanent treatment practices and approvable utility crossings. Such conveyances must be designed to minimize the width of disturbance. If intrusion within the delineated setback boundary is necessary to accomplish the purposes of a project, then mitigation shall be required in accordance with Appendix A.6 of this permit. Streams requiring protection under this section are defined as perennial, intermittent or jurisdictional ephemeral streams with a defined bed, bank or channel. National Resources Conservation Service (NRCS) soil survey maps should be used as one

reference and the presence of a stream requiring protection should also be confirmed in the field. Any required setback distances shall be clearly displayed in the field prior to any construction related activity.

Riparian setbacks distance shall be delineated based upon one of the following two methods:

i. The setback distance shall be sized as the greater of the following:

1. The regulatory 100-year floodplain based on FEMA mapping;

2. A minimum of 100 feet from the top of the streambank on each side; or

3. A distance calculated using the following equation:

$$W = 133DA^{0.43}$$ (Equation 1, Appendix A)

where:
DA = drainage area (mi^2)
W = total width of riparian setback (ft)

W shall be centered over the meander pattern of the stream such that a line representing the setback width would evenly intersect equal elevation lines on either side of the stream.

If the DA remains relatively constant throughout the stretch of interest, then the DA of the downstream edge of the stretch should be used. Where there is a significant increase in the DA from the upstream edge to The downstream edge of the area of interest, the setback width shall increase accordingly.

ii. **Stream Restoration with 100 feet (each side) Riparian Setback**. Each stream segment within the proposed site boundaries can be assessed in accordance with Attachment B, Part 1. In the event the stream segment is classified as a "Previously Modified Low Gradient Headwater Stream", the permittee has the option to restore the stream segment in accordance with Attachment B and include a 100-foot water quality setback distance from the top of the streambank on each side. In the event the stream segment exceeds the minimum criteria in Attachment B to be classified as a "Previously Modified Low Gradient Headwater Stream," this Appendix A, Attachment B may be considered on a case-by-case basis.

No structural sediment controls (e.g., the installation of sediment barriers or a sediment settling pond) or structural post-construction controls shall be used in a surface water of the State or the delineated setback corridor.

Previously developed projects (as defined in Part III.G.2.e.) located within the delineated setback boundary are exempt from Riparian Setback Mitigation (A.6) provided the proposed project does not further intrude into the delineated setback boundary.

Linear transportation projects which are caused solely by correcting safety related issues, mandates of modern design requirements and/or resulting from other mitigation activities are exempt from Riparian Setback Mitigation (Appendix A, A.6) if less than one acre of total new right-of-way is associated with the project.**A.6 Riparian Setback Mitigation.**

The mitigation required for intrusion into the riparian setback shall be determined by the horizontal distance the intrusion is from the stream. Up to three zones will be used in determining the required mitigation. Zone 1 extends from 0 to 25 feet from the stream edge. Zone 2 extends from 25 to 100 feet from the stream edge, and Zone 3 extends from 100 feet to the outer edge of the setback corridor. Intrusion into these zones will require the following mitigation within the same Watershed Assessment Unit (12-digit HUC scale):

i. Four times the total area disturbed in the stream and within Zone 1 of the site being developed shall be mitigated within Zone 1 of the mitigation location.

ii. Three times the area disturbed within Zone 2 of the site being developed shall be mitigated within Zones 1 and/or 2 of the mitigation location.

iii. Two times the area disturbed within Zone 3 of the site being developed shall be mitigated within any zone of the mitigation location.

In lieu of mitigation ratios found within in this section, linear transportation projects which result in total new right-of-way greater than one acre and less than two acres, which are caused solely by correcting safety related issues, mandates of modern design requirements and/or resulting from other mitigation activities, shall provide Riparian Setback Mitigation at a ratio of 1.5 to 1.

All mitigation shall, at a minimum, include conserved or restored setback zone and should be designed to maximize the ecological function of the mitigation. Including mitigation at the stream edge along with associated setback areas is one way to maximize ecological function. Mitigation shall be protected in perpetuity by binding conservation easements or environmental covenants which must be recorded within 6 months of receiving permit authorization. Granting of binding conservation easements or environmental covenants protected in perpetuity for land outside of disturbed area but within a required riparian setback counts towards required mitigation.

Mitigation may also be satisfied by approved pooled mitigation areas and in-lieu fee sponsored mitigation areas. Mitigation resulting from State or Federal environmental regulations may be adjusted in recognition of these requirements.

A.7 Groundwater Recharge Requirements.

The SWP3 shall ensure that the overall site post-development groundwater recharge equals or exceeds the pre-development groundwater recharge. The SWP3 shall describe the conservation development strategies, BMPs and other practices deemed necessary by the permittee to maintain or improve pre-development rates of

groundwater recharge. Pre-development and post-development groundwater recharge shall be calculated using the following equation:

i. $Vre_x = A_x * Dre_x / 12$ (Equation 2, Appendix A)

where:
X = represents a land use and hydrologic soil group pair
Vre_x = volume of total annual recharge from land use-soil group X (in acre-ft)
Dre_x = depth of total annual recharge associated with land use-soil group X from Tables 1 or 2 (in inches)
A_x = area of land use-soil group X (in acres)

Table A-1 values should be used for land where the underlying geology indicates a potential for downward migration of groundwater. Table A-1 values represent the combined total groundwater recharge potential including groundwater contribution to stream baseflow and to the underlying bedrock aquifer. The potential for downward migration can be determined from a comparison of the potentiometric maps for the glacial and bedrock aquifers. Use Table A-2 when this potential is unlikely to exist. See attachment B for a map of Table A-1 and A-2 areas. Detailed potentiometric maps for the Franklin county portion of the Darby watershed, and coarse potentiometric maps for the Darby watershed outside of Franklin County and hydrologic soil group data are available at:
https://epa.ohio.gov/divisions-and-offices/surface-water/permitting/stormwater-program.

Table A-1 (Appendix A) Annual Average Expected Total Groundwater Recharge[3]

	Density (DU[1]/acre)	% Impervious	Recharge (inches) by Hydrologic Soil Group2			
			A	B	C	D
Apply the following land covers when calculating an area-weighted average value for the site.[4]						
Woods / Forest	-	-	17.0	16.6	15.6	14.6
Brush	-	-	17.0	16.6	15.6	14.6
Meadow	-	-	17.0	16.5	15.4	14.4
Managed Wood	-	-	16.9	16.0	14.7	13.4
Pasture	-	-	16.5	15.9	14.4	13.0
Row Crop	-	-	15.8	14.2	11.9	8.1
Urban Grasses	-	-	15.7	15.7	14.2	12.7
Impervious	-	-	0.0	0.0	0.0	0.0
Alternatively, the following land use average values may be applied to the site as a whole.[5]						
Low Density Residential	0.5	12%	15.7	15.7	14.2	12.7
Low Density Residential	1	20%	14.8	14.8	13.7	12.2
Medium Density Residential	2	25%	11.5	11.5	11.5	11.5
Medium Density Residential	3	30%	11.2	11.2	11.2	11.2
Medium Density Residential	4	38%	9.6	9.6	9.6	9.6
High Density Residential	≥5	65%	7.3	7.3	7.3	7.3
Commercial & Road Right-of-Way[4]	-	90%	4.3	4.3	4.3	4.3

[1] DU = Dwelling Units
[2] Hydrologic soil group designations of A/D, B/D, and C/D should be considered as D soils for this application.
[3] These values apply when recharge of the aquifer is expected; recharge to the bedrock aquifer can be expected when the potentiometric head of the glacial aquifer is greater than the bedrock aquifer.

[4]). These values may be used where total pervious and impervious areas within the development are tabulated separately..
[5] These values may only be used for an area as a whole (includes impervious and pervious areas).

Table A-2 (Appendix A) Annual Average Expected Baseflow Recharge[3]

	Density (DU[1]/acre)	% Impervious	Recharge (inches) by Hydrologic Soil Group2			
			A	B	C	D
Apply the following land covers when calculating an area-weighted average value for the site.[4]						
Woods / Forest	-	-	11.8	11.4	10.7	9.9
Brush	-	-	11.7	11.4	10.7	9.9
Meadow	-	-	11.8	11.3	10.6	9.8
Managed Wood	-	-	11.7	11.0	10.0	9.1
Pasture	-	-	11.3	11.0	9.9	8.9
Row Crop	-	-	11.1	10.1	9.0	6.2
Urban Grasses	-	-	11.2	11.2	10.3	9.3
Impervious	-	-	0.0	0.0	0.0	0.0
Alternatively, the following land use average values may be applied to the site as a whole.[5]						
Low Density Residential	0.5	12%	11.2	11.2	10.3	9.3
Low Density Residential	1	20%	9.5	9.5	9.0	8.6
Medium Density Residential	2	25%	7.8	7.8	7.8	7.8
Medium Density Residential	3	30%	7.6	7.6	7.6	7.6
Medium Density Residential	4	38%	6.5	6.5	6.5	6.5
High Density Residential	≥5	65%	5.0	5.0	5.0	5.0
Commercial & Road Right-of-Way[4]	-	90%	2.9	2.9	2.9	2.9

[1] DU = Dwelling Units
[2] Hydrologic soil group designations of A/D, B/D, and C/D should be considered as D soils for this application.
[3] These values apply when no recharge of the aquifer is expected.
[4] These values may be used where total impervious and pervious areas are tabulated separately.
[5] These values may only be used for an area as a whole (includes impervious and pervious areas).

Table A-3 (Appendix A) Land Use Definitions

Land Use	Definition
Woods / Forest	Areas dominated by trees. Woods are protected from grazing and litter and brush adequately cover the soil.
Brush	Brush, weeds, grass mixture where brush is the major element and more than 75% of the ground is covered.
Meadow	Continuous grass, protected from grazing, generally mowed for hay.
Managed Wood	Orchards, tree farms, and other areas planted or maintained for the production of fruits, nuts, berries, or ornamentals.
Pasture	Pasture, grassland, or range where at least 50% of the ground is covered and the area is not heavily grazed.
Row Crop	Areas used to produce crops, such as corn, soybeans, vegetables, tobacco, and cotton.
Urban Grasses	Vegetation (primarily grasses) planted in developed settings for recreation, erosion control, or aesthetic purposes. Examples include parks, lawns, golf courses, airport grasses, and industrial site grasses.
Residential	Areas with a mixture of constructed materials and vegetation; the average % imperviousness and number of dwelling units per acre to determine the appropriate density is specified.
Commercial	Includes infrastructure (e.g. roads, railroads, etc.) and all highly developed areas not classified as High Intensity Residential.

ii. The pre-development ground water recharge volume shall be calculated by determining the area of each land use-soil type pairing on the site of interest. The recharge associated with each such pairing multiplied by the area will give the pre-development volume of total groundwater recharge. The same shall be done for the post-development land use-soil type pairings.

Any activity that is expected to produce stormwater runoff with elevated concentrations of carcinogens, hydrocarbons, metals, or toxics is prohibited from infiltrating untreated stormwater from the area affected by the activity. The groundwater recharge mitigation requirement for areas affected by such activities must be met by methods which do not present a risk of groundwater contamination. The following land uses and activities are typically deemed stormwater hotspots:

Vehicle salvage yards and recycling facilities

- vehicle service and maintenance facilities (i.e. truck stops, gas stations)
- fleet storage areas (i.e. bus, truck)
- industrial sites subject to industrial stormwater permitting requirements
- bulk terminals
- marinas
- facilities that generate or store hazardous materials
- other land uses and activities as designated by individual review

The following land uses and activities are not normally considered hotspots:

- residential streets and rural highways
- residential development
- institutional development
- commercial and office developments
- non-industrial rooftops
- pervious areas, except golf courses and nurseries

The applicant may use structural BMPs within drinking water source protection areas for community public water systems only to the extent that the structural BMP(s) does not cause contaminants in the recharge waters to impact the ground water quality at levels that would cause an exceedance of the drinking water Maximum Contaminant Levels (OAC Section 3745-81 and 3745-82). To obtain a map of drinking water source protection areas for community public water systems contact Ohio EPA's Division of Drinking and Ground Waters at (614) 644-2752.

Linear transportation projects which are caused solely by correcting safety related issues, mandates of modern design requirements and/or resulting from other mitigation activities are exempt from Groundwater Recharge Mitigation (Appendix B, A.8) if less than one acre of total new right-of-way is associated with the project.

Protection of open space (infiltration areas) shall be by binding conservation easements that identify a third-party management agency, such as a

homeowners' association/condominium association, political jurisdiction or third-party land trust.

A.8 Groundwater Recharge Mitigation.

If the post-development recharge volume is less than the pre-development recharge volume, then mitigation will be required. Two options are available for most applications:

i. The preferred method is to convert additional land to land use with higher recharge potential. The difference in groundwater recharge between the existing and converted land use recharge is the amount which can be used as recharge credit. Off-site Groundwater Recharge Mitigation shall occur within the same Watershed Assessment Unit (12-digit HUC scale) as the permitted site and preferably up-gradient and within a 2-mile radius.

Mitigation shall be protected in perpetuity by binding conservation easements or environmental covenants which must be recorded within 6 months of receiving permit authorization. Granting of binding conservation easements or environmental covenants protected in perpetuity for land outside of the disturbed area, but within a required riparian setback counts towards required mitigation. Mitigation may also be satisfied by approved pooled mitigation areas and in-lieu fee sponsored mitigation areas.

ii. On-site structural and non-structural practices may also be used to achieve groundwater mitigation requirements by retaining and infiltrating on-site a minimum volume of stormwater runoff based on the area and hydrologic soil groups of disturbed soils. If these infiltrating practices are incorporated upstream of the water quality volume treatment practice, the volume of groundwater being infiltrated may be subtracted from the water quality volume for the purpose of meeting post-construction requirements. The on-site retention requirement is determined by the following formula:

$$V_{retention} = A_{HSG\text{-}A}*0.90\text{ in} + A_{HSG\text{-}B}*0.75\text{ in} + A_{HSG\text{-}C}*0.50\text{ in} + A_{HSG\text{-}D}*0.25\text{ in}$$

(Equation 3, Appendix A)

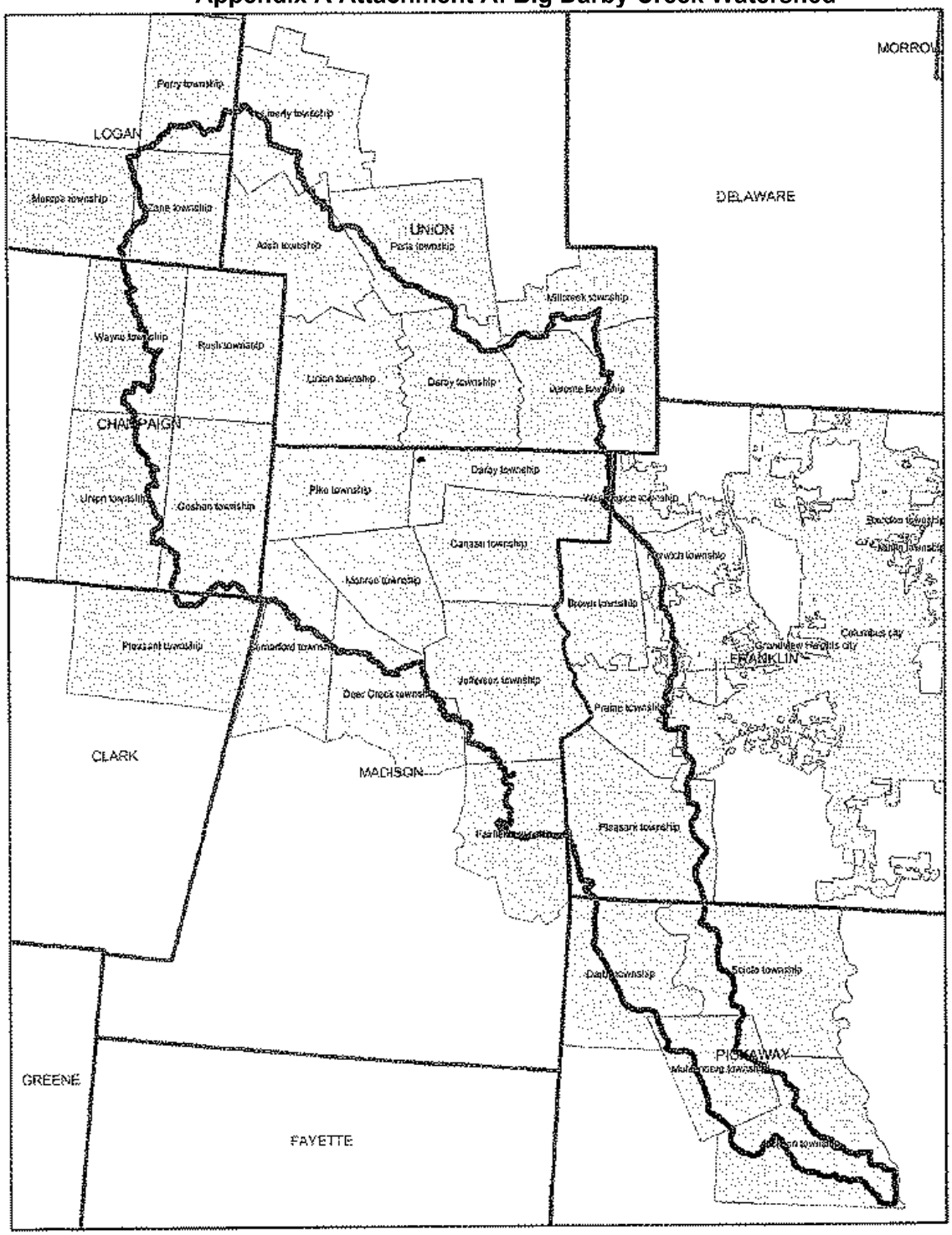
Where,
$V_{retention}$ = volume of runoff retained onsite using an approved infiltration practice
$A_{HSG\text{-}x}$ = area of each hydrologic soil group within the disturbed area

Table A-4: Hydrologic Soil Groups and On-site Retention Depth per Acre

Hydrologic Soil Group	HSG A	HSG B	HSG C	HSG D
Retention Depth (inches)	0.90	0.75	0.50	0.25

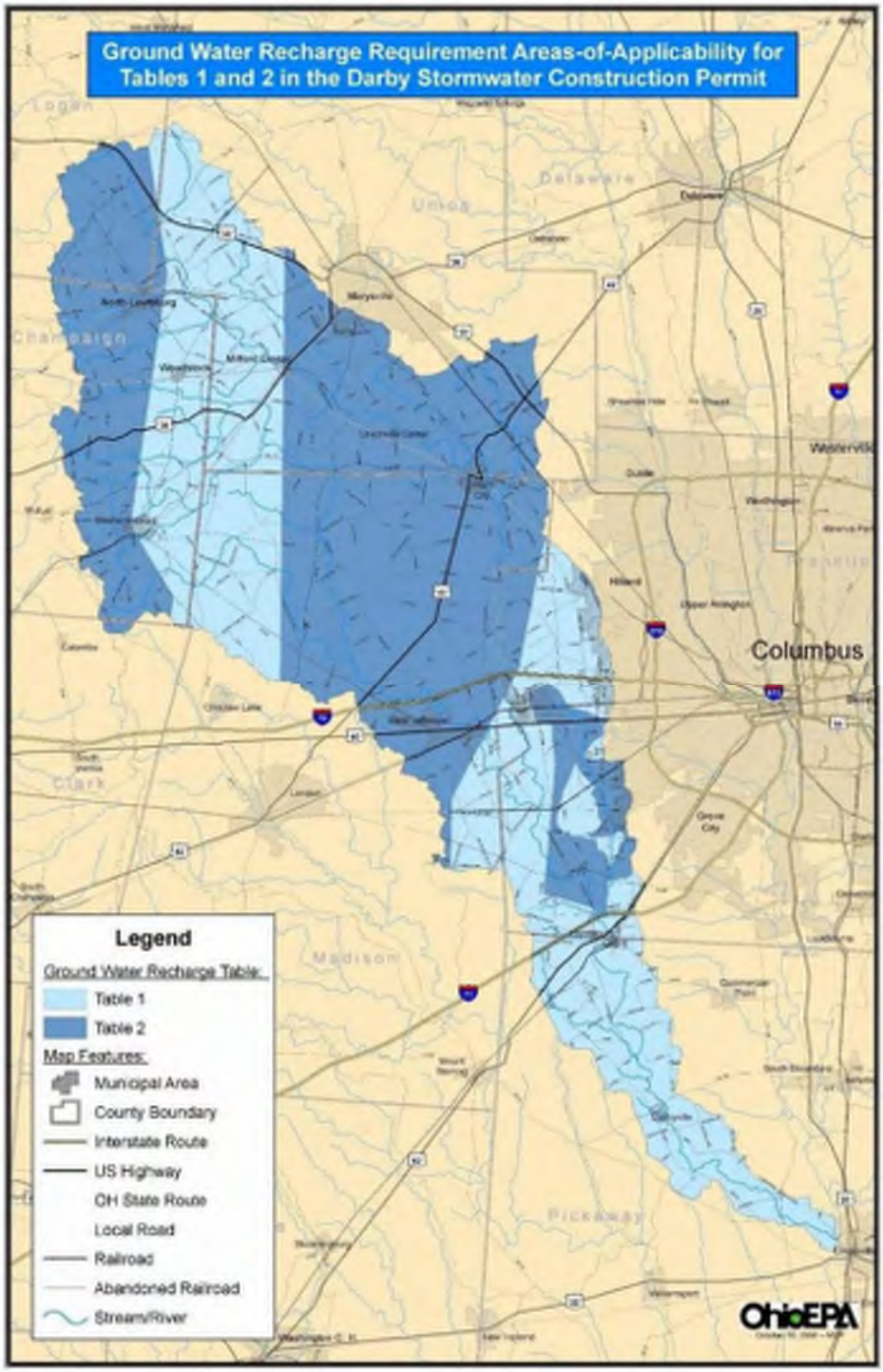
Retention volume ($V_{retention}$) provided by selected practices shall be determined using the runoff reduction method criteria as outlined in Part III.G.2.e, Ohio EPA's Runoff Reduction spreadsheet and supporting documentation in the Rainwater and Land Development manual. Hydrologic soil group (HSG) areas are to be determined by using the current version of SURRGO or Web Soil Survey soils information.

Appendix A Attachment A: Big Darby Creek Watershed



A more detailed map can be viewed at:
https://epa.ohio.gov/divisions-and-offices/surface-water/permitting/stormwater-program

Appendix A Attachment B: Groundwater Recharge Areas



A more detailed map can be viewed at:
https://epa.ohio.gov/divisions-and-offices/surface-water/permitting/stormwater-program

Appendix A Attachment B

Part 1 Stream Assessment

This assessment will determine if a stream is considered a previously channelized, low-gradient headwater stream (a drainage ditch may be a natural stream that has been channelized and can be restored) which would be applicable for stream restoration in lieu of protecting a setback as per Appendix A. A.5.i and ii.

In the event the assessment of the stream, meets all the criteria listed below, restoration (provided 401/404 permits are authorized) as depicted in Part 2 of this attachment, may be a means of reducing the setback distance required by A.5.i. (Appendix A).

Previously Channelized Low-Gradient Headwater Streams, shall for the purposes of this permit, be defined as having all of the following characteristics:

- Less than 10 square miles of drainage area
- Low gradient and low stream power such that despite their straightened and entrenched condition incision (down-cutting) is not evident
- Entrenched, entrenchment ratio < 2.2
- Straight, sinuosity of the bankfull channel < 1.02

Part 2 Restoration

Restoration shall be accomplished by any natural channel design approach that will lead to a self-maintaining reach able to provide both local habitat and watershed services (e.g. self-purification and valley floodwater storage).

a. Construction of a floodplain, channel and habitat via natural channel design;
b. Floodplain excavation necessary to promote interaction between stream and floodplain;
c. Include a water quality setback of 100 feet from top of the streambank on each side.

The primary target regardless of design approach shall be the frequently flooded width, which shall be maximized, at 10 times the channel's self-forming width. Five times the self-forming channel width may still be acceptable particularly on portions of the site if greater widths are achieved elsewhere.

Appendix B
Olentangy River Watershed

CONTENTS OF THIS APPENDIX

B.1 Permit Area
B.2 TMDL Conditions
B.3 Riparian Setback Requirements
B.4 Riparian Setback Mitigation
Attachment B-A: Area of Applicability for the Olentangy Watershed (Map)
Attachment B-B: Stream Assessment and Restoration

B.1 Permit Area.

This appendix to Permit OHC00006 applies to specific portions of the Olentangy River Watershed located within the State of Ohio. The permit area includes the following 12-digit Hydrologic Unit Codes (HUC-12) within the Olentangy River Watershed:

12-Digit Hydrologic Unit Codes

12-Digit Hydrologic Unit Codes (HUC)	Narrative Description of Sub-Watershed
05060001 09 01	Shaw Creek
05060001 09 02	Headwaters Whetstone Creek
05060001 09 03	Claypool Run-Whetstone Creek
05060001 10 07	Delaware Run-Olentangy River
05060001 11 01	Deep Run-Olentangy River
05060001 11 02 (Only portion as depicted in Attachment A)	Rush Run-Olentangy River

Please see Attachment A (Appendix B) for permit area boundaries. An electronic version of Attachment A can be viewed at ***https://epa.ohio.gov/divisions-and-offices/surface-water/permitting/stormwater-program***

B.2 TMDL Conditions.

This general permit requires control measures/BMPs for construction sites that reflect recommendations set forth in the U.S. EPA approved Olentangy TMDL.

B.3 Riparian Setback Requirements.

The permittee shall comply with the riparian setback requirements of this permit or alternative riparian setback requirements established by a regulated MS4 and approved by Ohio EPA. The SWP3 shall clearly delineate the boundary of required stream setback distances. The stream setback shall consist of a streamside buffer and an outer buffer. No construction activity shall occur, without appropriate mitigation, within the streamside buffer except activities associated with stormwater conveyances from permanent treatment practices, approvable utility crossings and restoration or recovery of floodplain and channel form characteristics as described in Attachment B. Stormwater conveyances must be designed to minimize the width of disturbance. Construction activities requiring mitigation for intrusions within the outer buffer for the Olentangy River mainstem and perennial streams are described in Appendix B.4.

If intrusion within the delineated setback boundary is necessary to accomplish the purposes of a project, then mitigation shall be required in accordance with Appendix B.3. of this permit. Streams requiring protection under this section have a defined bed and bank or channel and are defined as follows:

- The Olentangy River mainstem;
- Perennial streams have continuous flow on either the surface of the stream bed or under the surface of the stream bed;
- Intermittent streams flow for extended periods of time seasonally of a typical climate year; and
- Jurisdictional Ephemeral streams are normally dry and only flow during and after precipitation runoff (episodic flow).

National Resources Conservation Service (NRCS) soil survey maps should be used as one reference and the presence of a stream requiring protection should also be confirmed in the field. Any required setback distances shall be clearly displayed in the field prior to any construction related activity.

Riparian setbacks shall be delineated based upon one of the following two methods:

i. The required setback distances shall vary with stream type as follows:

a. The setback distances associated with the mainstem of the Olentangy River shall consist of:

(1) A streamside buffer width of 100 feet as measured horizontally from the ordinary high water mark per side; and

(2) An outer buffer width sized to the regulatory 100-year floodplain based on FEMA mapping. No impervious surfaces shall be constructed without appropriate mitigation and moderate to substantial fill activities with no impervious surface may require appropriate mitigation pending an individual approval by Ohio EPA.

b. The setback distance associated with perennial streams, other than the Olentangy mainstem, shall consist of:

(1) A streamside buffer width of 80 feet per side measured horizontally from the ordinary high water mark; and

(2) An outer buffer width sized to the regulatory 100-year floodplain based on FEMA mapping. In the event the regulatory 100-year floodplain is not established, the outer buffer width shall be calculated using the following equation and measured horizontally from the ordinary high water mark. No impervious surfaces, structure, fill, or activity that would impair the floodplain or stream stabilizing ability of the outer buffer shall occur without appropriate mitigation:

$W = 143DA^{0.41}$ (Equation 1 Appendix B)

where:
DA = drainage area (mi^2)
W = total width of riparian setback (ft)

W shall be centered over the meander pattern of the stream such that a line representing the setback width would evenly intersect equal elevation lines on either side of the stream.

If the DA remains relatively constant throughout the stretch of interest, then the DA of the downstream edge of the stretch should be used. Where there is a significant increase in the DA from the upstream edge to the downstream edge of the area of interest, the setback width shall increase accordingly.

c. The setback distance associated with intermittent streams and jurisdictional ephemeral streams shall be a streamside buffer width of 30 feet per side measured horizontally from the centerline of the stream. No outer buffer is required for intermittent and ephemeral streams.

ii. Stream Restoration with 100 feet (each side) Riparian Setback. Each stream segment within the proposed site boundaries can be assessed in accordance with Attachment B. In the event the stream segment is classified as a "Previously Modified Low Gradient Headwater Stream", the permittee has the option to restore the stream segment in accordance with Attachment B and include a 100 feet water quality setback distance from the top of the streambank on each side. In the event the stream segment exceeds the minimum criteria in Attachment B to be classified as a "Previously Modified Low Gradient Headwater Stream", this may be considered on a case-by-case basis.

No structural sediment controls (e.g., the installation of sediment barriers or a sediment settling pond) or structural post-construction controls shall be used in a stream or the streamside buffer. Activities and controls that would not impair the floodplain or stream stabilizing ability of the outer buffer can be considered.

Redevelopment projects (i.e., developments on previously developed property) located within the delineated setback boundary is exempt from Riparian Setback Mitigation (B.3) provided the proposed project does not further intrude the delineated setback boundary.

B.4 Riparian Setback Mitigation.

The mitigation required for intrusion into the riparian setback of the **Olentangy River mainstem or perennial streams** shall be determined by the horizontal distance the intrusion is from the stream. Up to three zones will be used in determining the required mitigation. Zone 1 extends from 0 to 30 feet from the stream edge. Zone 2 extends from 30 feet to the outer edge of the streamside buffer. Zone 3 extends from the outer edge of the streamside buffer to the outer edge of the outer buffer. Intrusion into these zones will require the following mitigation within the same Watershed Assessment Unit

(12-digit HUC scale). Alternative mitigation, within the permit area, may be considered on a case-by-case basis:

1. Four (4) times the total area disturbed in the stream within Zone 1 of the site being developed shall be mitigated; or, two (2) times the total area disturbed in the stream within Zone 1 shall be mitigated within the watershed of the immediate receiving stream, and the entire required setback of the site shall be protected by binding conservation easements or environmental covenants.

2. Three (3) times the area disturbed within Zone 2 of the site being developed shall be mitigated within Zones 1 and/or 2 of the mitigation location; or, one and one-half (1.5) times the total area disturbed within Zone 2 shall be mitigated within the watershed of the immediate receiving stream, and the entire required setback of the site shall be protected in perpetuity by binding conservation easements or environmental covenants.

3. Two (2) times the area to be mitigated within Zone 3 of the site being developed shall be mitigated within any Zone of the mitigation location; or, one (1) times the total area to be mitigated within any zone shall be mitigated within the watershed of the immediate receiving stream, and the entire required setback of the site shall be protected in perpetuity by binding conservation easements or environmental covenants.

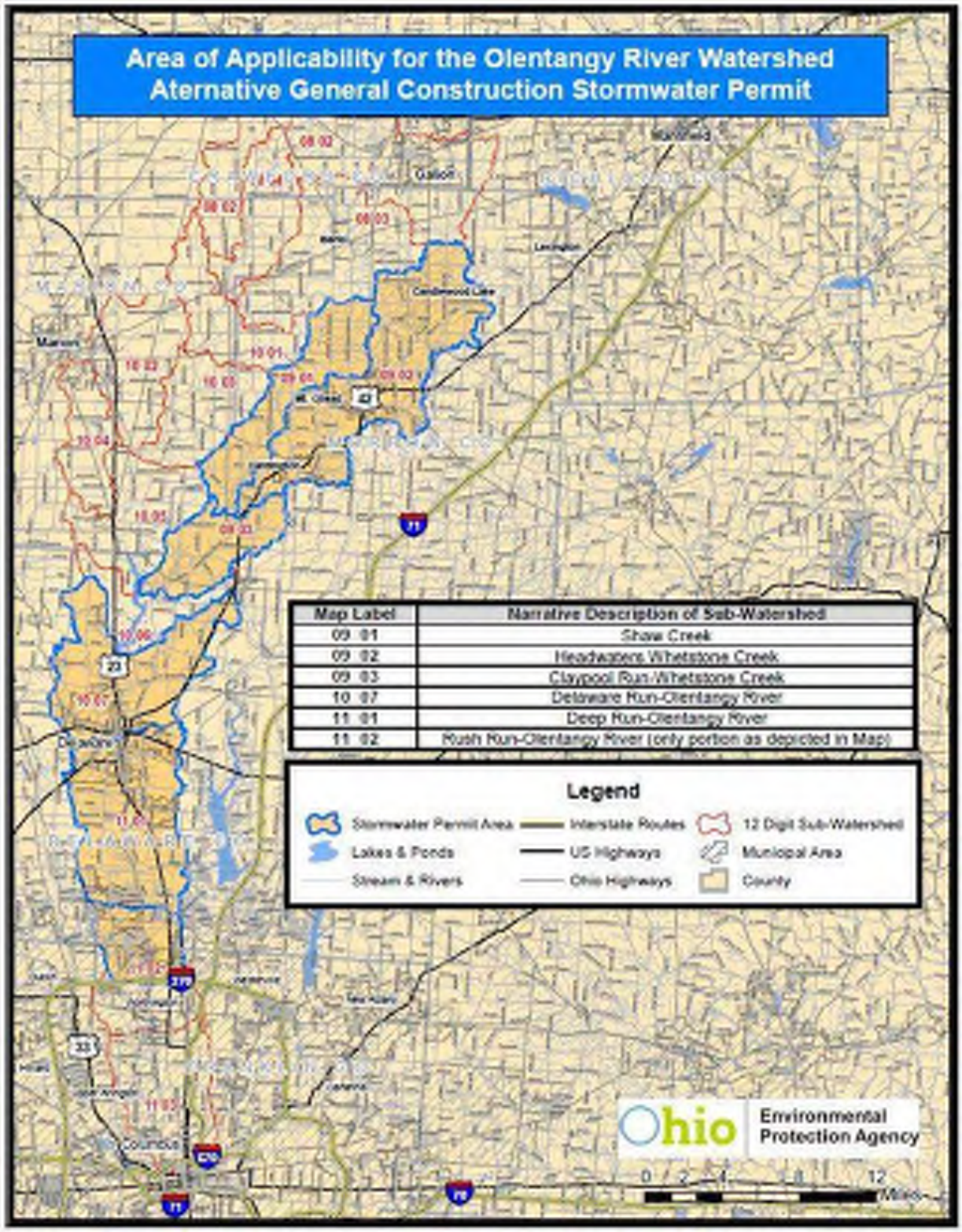
The mitigation required for intrusion into the riparian setback of an **intermittent stream** shall be four (4) times the total area disturbed within the riparian setback of the site being developed shall be mitigated; or two (2) times the total area disturbed within the riparian setback shall be mitigated within the watershed of the immediate receiving stream, and the entire required setback of the site shall be protected in perpetuity by binding conservation easements or environmental covenants.

The mitigation required for intrusion into the streamside buffer of a **jurisdictional ephemeral stream** shall be two (2) times the total area disturbed within the riparian setback of the site being developed shall be mitigated; or one (1) times the total area disturbed within the riparian setback shall be mitigated within the watershed of the immediate receiving stream, and the entire required setback of the site shall be protected in perpetuity by binding conservation easements or environmental covenants.

All mitigation shall, at a minimum, include conserved or restored setback zone, and should be designed to maximize the ecological function of the mitigation. Including mitigation at the stream edge along with associated setback areas is one way to maximize ecological function. Mitigation shall be protected in perpetuity by binding conservation easements or environmental covenants which must be recorded within 6 months of permit authorization. Granting of binding conservation easements or environmental covenants protected for land outside of disturbed area, but within a required riparian setback counts towards required mitigation.

Mitigation may also be satisfied by approved pooled mitigation areas and in-lieu fee sponsored mitigation areas. Mitigation resulting from State or Federal environmental regulations may be adjusted in recognition of these requirements.

Appendix B Attachment A Applicable Portions of the Olentangy Watershed



A more detailed map can be viewed at:
https://epa.ohio.gov/divisions-and-offices/surface-water/permitting/stormwater-program

Appendix B Attachment B

Part 1 Stream Assessment

This assessment will determine if a stream is considered a previously channelized, low-gradient headwater stream (a drainage ditch may be a natural stream that has been channelized and can be restored) which would be applicable for stream restoration in lieu of protecting an outer 'no build' setback as per Appendix B B.2i. and ii.

In the event the assessment of the stream meets all the criteria listed below, restoration as depicted in Part 2 of this attachment or natural channel design could be performed, provided 401/404 permits are authorized, and may be a means of reducing the setback distance required by B.2.i. (Appendix B).

Previously Modified, Low-Gradient Headwater Streams shall, for the purposes of this permit, be defined as having all of the following characteristics:

- Less than 10 square miles of drainage area;
- Low gradient and low stream power such that incision (down-cutting) is not evident;
- Entrenched such that the ratio of the frequently flooded width to the bankfull width is less than 2.2; and
- Straight with little or no sinuosity present such that the ratio of the bankfull channel length to the straight-line distance between two points is less than 1.02.

Part 2 Restoration

Restoration shall be accomplished by any natural channel design approach that will lead to a self-maintaining reach able to provide both local habitat and watershed services (e.g. self-purification and valley floodwater storage).

a. Construction of a floodplain, channel and habitat via natural channel design;
b. Floodplain excavation necessary to promote interaction between stream and floodplain;
c. Include a water quality setback of 100 feet from top of the streambank on each side.

The primary target shall be a frequently flooded width of 10 times the channel's self-forming width. Five times the self-forming channel width may be acceptable if sufficient elements of natural channel design are included in the restoration project.

Appendix C. Rainfall Intensity for Calculation of Water Quality Flow (WQF)

DURATION t_c (minutes)	WATER QUALITY INTENSITY [i_{wq}] (inches/hour)
5	2.37
6	2.26
7	2.15
8	2.04
9	1.94
10	1.85
11	1.76
12	1.68
13	1.62
14	1.56
15	1.51
16	1.46
17	1.41
18	1.37
19	1.33
20	1.29
21	1.26
22	1.22
23	1.19
24	1.16
25	1.13
26	1.10
27	1.07
28	1.05
29	1.03
30	1.01
31	0.99
32	0.97

DURATION t_c (minutes)	WATER QUALITY INTENSITY [i_{wq}] (inches/hour)
33	0.95
34	0.93
35	0.92
36	0.90
37	0.88
38	0.86
39	0.85
40	0.83
41	0.82
42	0.80
43	0.78
44	0.77
45	0.76
46	0.75
47	0.74
48	0.73
49	0.72
50	0.71
51	0.69
52	0.68
53	0.67
54	0.66
55	0.66
56	0.65
57	0.64
58	0.64
59	0.63
60	0.62

Note: For t_c < 5 minutes, use i = 2.37 in/hr; for t_c > 60 minutes, use i = 0.62 in/hr. For all other t_c, use the appropriate value from this table.

Appendix D – NOI and Acknowledgement Letter from EPA/State

Appendix E – Inspection Reports

Project Name: _____
NPDES ID Number: _____

Section A – General Information (If necessary, complete additional inspection reports for each separate inspection location.)	
Inspector Information	
Inspector Name:	**Title:**
Company Name:	**Email:**
Address:	**Phone Number:**
Inspection Details	
Inspection Date:	**Inspection Location:**
Inspection Start Time:	**Inspection End Time:**
Current Phase of Construction:	**Weather Conditions During Inspection:**

Did you determine that any portion of your site was unsafe for inspection per CGP Part 4.5? ☐ Yes ☐ No

If "Yes," provide the following information:

Location of unsafe conditions:

The conditions that prevented you inspecting this location:

Indicate the required inspection frequency: (Check all that apply. You may be subject to different inspection frequencies in different areas of the site.)

Standard Frequency (CGP Part 4.2):

☐ At least once every 7 calendar days; **OR**

☐ Once every 14 calendar days *and* within 24 hours of the occurrence of either:

- A storm event that produces 0.25 inches or more of rain within a 24-hour period, or
- A snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period

Increased Frequency (CGP Part 4.3.1) (If site discharges to sediment or nutrient-impaired waters or to waters designated as Tier 2, Tier 2.5, or Tier 3):

☐ Once every 7 calendar days *and* within 24 hours of the occurrence of either:

- A storm event that produces 0.25 inches or more of rain within a 24-hour period, or
- A snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period

Reduced Frequency (CGP Part 4.4):

☐ For stabilized areas: Twice during first month, no more than 14 calendar days apart; then once per month after first month until permit coverage is terminated

☐ For stabilized areas on "linear construction sites": Twice during first month, no more than 14 calendar days apart; then once more within 24 hours of the occurrence of either:

- A storm event that produces 0.25 inches or more of rain within a 24-hour period, or
- A snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period

☐ For arid, semi-arid, or drought-stricken areas during seasonally dry periods or during drought: Once per month and within 24 hours of the occurrence of either:

- A storm event that produces 0.25 inches or more of rain within a 24-hour period, or
- A snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period

☐ For frozen conditions where construction activities are being conducted: Once per month

Was this inspection triggered by a storm event producing 0.25 inches or more of rain within a 24-hour period? ☐ Yes ☐ No

If "Yes," how did you determine whether the storm produced 0.25 inches or more of rain?

☐ On-site rain gauge
☐ Weather station representative of site.
Weather station location:

Total rainfall amount that triggered the inspection (inches):

Was this inspection triggered by a snowmelt discharge from a storm event producing 3.25 inches or more of snow within a 24-hour period? ☐ Yes ☐ No

If "Yes," how did you determine whether the storm produced 3.25 inches or more of snow?

☐ On-site rain gauge
☐ Weather station representative of site.
Weather station location:

Total snowfall amount that triggered the inspection (inches):

Section B – Condition and Effectiveness of Erosion and Sediment (E&S) Controls (CGP Part 2.2) (Insert additional rows if needed)					
Type and Location of E&S Control	**Conditions Requiring Routine Maintenance?[1]**	**If "Yes," How Many Times (Including This Occurrence) Has This Condition Been Identified?**	**Conditions Requiring Corrective Action?[2, 3]**	**Date on Which Condition First Observed (If Applicable)?**	**Description of Conditions Observed**
1.	☐ Yes ☐ No		☐ Yes ☐ No		
2.	☐ Yes ☐ No		☐ Yes ☐ No		
3.	☐ Yes ☐ No		☐ Yes ☐ No		
4.	☐ Yes ☐ No		☐ Yes ☐ No		
5.	☐ Yes ☐ No		☐ Yes ☐ No		
If the same routine maintenance was found to be necessary three or more times for the same control at the same location (including this occurrence), follow the corrective action requirements and record the required information in your corrective action log, or describe here why you believe the specific condition should still be addressed as routine maintenance:					

[1] Routine maintenance includes minor repairs or other upkeep performed to ensure that the site's stormwater controls remain in effective operating condition, not including significant repairs or the need to install a new or replacement control. Routine maintenance is also required for specific conditions: (1) for perimeter controls, whenever sediment has accumulated to half or more the above-ground height of the control (CGP Part 2.2.3.c.i); (2) where sediment has been tracked-out from the site onto paved roads, sidewalks, or other paved areas (CGP Part 2.2.4.d); (3) for inlet protection measures, when sediment accumulates, the filter becomes clogged, and/or performance is compromised (CGP Part 2.2.10.b); and (4) for sediment basins, as necessary to maintain at least half of the design capacity of the basin (CGP Part 2.2.12.f)

[2] Corrective actions are triggered only for specific conditions (CGP Part 5.1):

1. A stormwater control needs a significant repair or a new or replacement control is needed, or, in accordance with Part 2.1.4.c, you find it necessary to repeatedly (i.e., three (3) or more times) conduct the same routine maintenance fix to the same control at the same location (unless you document in your inspection report under Part 4.7.1.c that the specific reoccurrence of this same problem should still be addressed as a routine maintenance fix under 2.1.4); or
2. A stormwater control necessary to comply with the requirements of this permit was never installed, or was installed incorrectly; or
3. Your discharges are not meeting applicable water quality standards; or
4. A prohibited discharge has occurred (see CGP Part 1.3); or
5. During the discharge from site dewatering activities:
   a. The weekly average of your turbidity monitoring results exceeds the 50 NTU benchmark (or alternate benchmark if approved by EPA pursuant to Part 3.3.2.b); or
   b. You observe or you are informed by EPA, State, or local authorities of the presence of the conditions specified in Part 4.6.3.e.

[3] If a condition on your site requires a corrective action, you must also fill out a corrective action log found at https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates. See CGP Part 5.4 for more information.

Project Name: _____
NPDES ID Number: _____

Section C – Condition and Effectiveness of Pollution Prevention (P2) Practices and Controls (CGP Part 2.3) (Insert additional rows if needed)					
Type and Location of P2 Practices and Controls	**Conditions Requiring Routine Maintenance?[1]**	**If "Yes," How Many Times (Including This Occurrence) Has This Condition Been Identified?**	**Conditions Requiring Corrective Action?[2, 3]**	**Date on Which Condition First Observed (If Applicable)?**	**Description of Conditions Observed**
1.	☐ Yes ☐ No		☐ Yes ☐ No		
2.	☐ Yes ☐ No		☐ Yes ☐ No		
3.	☐ Yes ☐ No		☐ Yes ☐ No		
4.	☐ Yes ☐ No		☐ Yes ☐ No		
5.	☐ Yes ☐ No		☐ Yes ☐ No		
If the same routine maintenance was found to be necessary three or more times for the same control at the same location (including this occurrence), follow the corrective action requirements and record the required information in your corrective action log, or describe here why you believe the specific condition should still be addressed as routine maintenance:					

Section D – Stabilization of Exposed Soil (CGP Part 2.2.14) (Insert additional rows if needed)					
Specific Location That Has Been or Will Be Stabilized	**Stabilization Method and Applicable Deadline**	**Stabilization Initiated?**	**Final Stabilization Criteria Met?**	**Final Stabilization Photos Taken?**	**Notes**
1.		☐ Yes ☐ No If "Yes," date initiated:	☐ Yes ☐ No If "Yes," date criteria met:	☐ Yes ☐ No	
2.		☐ Yes ☐ No If "Yes," date initiated:	☐ Yes ☐ No If "Yes," date criteria met:	☐ Yes ☐ No	
3.		☐ Yes ☐ No If "Yes," date initiated:	☐ Yes ☐ No If "Yes," date criteria met:	☐ Yes ☐ No	
4.		☐ Yes ☐ No If "Yes," date initiated:	☐ Yes ☐ No If "Yes," date criteria met:	☐ Yes ☐ No	
5.		☐ Yes ☐ No If "Yes," date initiated:	☐ Yes ☐ No If "Yes," date criteria met:	☐ Yes ☐ No	

Section E – Description of Discharges (CGP Part 4.6.2) (Insert additional rows if needed)	
Was a discharge (not including dewatering) occurring from any part of your site at the time of the inspection?[4] ☐ Yes ☐ No **If "Yes," for each point of discharge, document the following:** • The visual quality of the discharge. • The characteristics of the discharge, including color; odor; floating, settled, or suspended solids; foam; oil sheen; and other indicators of stormwater pollutants. • Signs of the above pollutant characteristics that are visible from your site and attributable to your discharge in receiving waters or in other constructed or natural site drainage features.	
Discharge Location	**Observations**
1.	
2.	
3.	
4.	
5.	

[4] If a dewatering discharge was occurring, you must conduct a dewatering inspection pursuant to CGP Part 4.3.2 and complete a separate dewatering inspection report.

Section F – Signature and Certification (CGP Part 4.7.2)	
"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information contained therein. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."	
MANDATORY: Signature of Operator or "Duly Authorized Representative:"	
Signature:	**Date:**
Printed Name:	**Affiliation:**
OPTIONAL: Signature of Contractor or Subcontractor	
Signature:	**Date:**
Printed Name:	**Affiliation:**

General Tips for Using This Template

This Site Inspection Report Template is provided to assist you in preparing site inspection reports for EPA's 2022 Construction General Permit (CGP). If you are covered under the 2022 CGP, you can use this template to create a site inspection report form that is customized to the specific circumstances of your site and that complies with the minimum reporting requirements of Part 4.7 of the permit. Note that the use of this form is optional; you may use your own site inspection report form provided it includes the minimum information required in Part 4.7 of the CGP.

This template does not address the CGP's inspection reporting requirements related to dewatering activities. A separate inspection template has been developed specifically for dewatering activities and is available at https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates.

Keep in mind that this document is a template and not an "off-the-shelf" inspection report that is ready to use without some modification. You must first customize this form to include the specifics of your project in order for it to be useable for your inspection reports. Once you have entered all of your site-specific information into the blank fields, you may use this form to complete inspection reports.

The following tips for using this template will help you ensure that the minimum permit requirements are met:

- **Review the inspection requirements.** Before you start developing your inspection report form, read the CGP's Part 4 inspection requirements. This will ensure that you have a working understanding of the permit's underlying inspection requirements.
- **Complete all required blank fields.** Fill out all blank fields. Only by filling out all fields will the template be compliant with the requirements of the permit. (Note: Where you do not need the number of rows provided in the template form for your inspection, you may delete these or cross them off as you see fit. Or, if you need more space to document your findings, you may insert additional rows in the electronic version of this form or use the bottom of the page in the field version of this form.)
- **Use your site map to document inspection findings.** In several places in the template, you are directed to specify the location of certain features of your site, including where stormwater controls are installed and where you will be stabilizing exposed soil. You are also asked to fill in location information for unsafe conditions and the locations of any discharges occurring during your inspections. Where you are asked for location information, EPA encourages you to reference the point on your SWPPP site map that corresponds to the requested location on the inspection form. Using the site map as a tool in this way will help you conduct efficient inspections, will assist you in evaluating problems found, and will ensure proper documentation.
- **Complete the inspection report within 24 hours of completing a site inspection.** You must complete an inspection report in accordance with Part 4.7.1 of the CGP.
- **Include the inspection form with your SWPPP.** Once your form is complete, make sure to include a copy of the inspection form in your SWPPP in accordance with Part 7.2.7.e of the CGP.
- **Retain copies of all inspection reports with your records.** You must also retain in your records copies of all inspection reports in accordance with the requirements in Part 4.7.3 of the CGP. These reports must be retained for at least 3 years from the date your permit coverage expires or is terminated in accordance with the requirements in Part 4.7.4 of the CGP.

Instructions for Section A

Inspector Name

Enter the name of the person that conducted the inspection. Include the person's contact information (title, affiliated company name, address, email, and phone number).

Inspection Date and Time

Enter the date you performed the inspection and the time you started and ended the inspection.

Weather Conditions During Inspection

Enter the weather conditions occurring during the inspection, e.g., sunny, overcast, light rain, heavy rain, snowing, icy, windy.

Current Phase of Construction
If this project is being completed in more than one phase, indicate which phase it is currently in.

Inspection Location
If your project has multiple locations where you conduct separate inspections, specify the location where this inspection is being conducted. If only one inspection is conducted for your entire project, enter "Entire Site." If necessary, complete additional inspection report forms for each separate inspection location.

Unsafe Conditions for Inspection (CGP Part 4.5.7)
Inspections are not required where a portion of the site or the entire site is subject to unsafe conditions. These conditions should not regularly occur and should not be consistently present on a site. Generally, unsafe conditions are those that render the site (or a portion of it) inaccessible or that would pose a significant probability of injury to applicable personnel. Examples could include severe storm or flood conditions, high winds, and downed electrical wires.

If your site, or a portion of it, is affected by unsafe conditions during the time of your inspection, provide a description of the conditions that prevented you from conducting the inspection and what parts of the site were affected. If the entire site was considered unsafe, specify the location as "Entire Site."

Inspection Frequency
Check all the inspection frequencies that apply to your project. Note that you may be subject to different inspection frequencies in different areas of your site.

Inspection Triggered by a Storm Event
If you were required to conduct this inspection because of a storm event that produced 0.25 inches or more of rain within a 24-hour period, indicate whether you relied on an on-site rain gauge or a nearby weather station (and where the weather station is located). Also, specify the total amount of rainfall for this specific storm event.

If you were required to conduct this inspection because of a snowmelt discharge from a storm event that produced 3.25 inches or more of snow within a 24-hour period, then indicate whether you relied on an on-site measurement or a nearby weather station (and where the weather station is located). Also, specify the total amount of snowfall for this specific storm event.

Instructions for Section B

Type and Location of Erosion and Sediment (E&S) Controls
Provide a list of all erosion and sediment (E&S) controls that your SWPPP indicates will be installed and implemented at your site. This list must include at a minimum all E&S controls required by CGP Part 2.2. Include also any natural buffers established under CGP Part 2.2.1. Buffer requirements apply if your project's earth-disturbing activities will occur within 50 feet of a discharge to receiving water. You may group your E&S controls on your form if you have several of the same type of controls (e.g., you may group "Inlet Protection Measures," "Perimeter Controls," and "Stockpile Controls" together on one line), but if there are any problems with a specific control, you must separately identify the location of the control, whether routine maintenance or corrective action is necessary, and in the notes section you must describe the specifics about the problem you observed.

Conditions Requiring Routine Maintenance?
Answer "Yes" if the E&S control requires routine maintenance as defined in footnote 1 of this template. Note that in many cases, "Yes" answers are expected and indicate a project with an active operation and maintenance program. You should also answer "Yes" if work to fix the problem is still ongoing from the previous inspection, though necessary work must be initiated immediately and completed by the end of the next business day or within seven calendar days if documented in accordance with CGP Part 2.1.4.b.

If "Yes," How Many Times (Including this Occurrence) Has this Condition Been Identified?
Indicate how many times the routine maintenance has been required for the same control at the same location.

Conditions Requiring Corrective Action?
Answer "Yes" if you found any of the conditions listed in footnote 2 in this template to be present during your inspection (CGP Part 5.1). If you answer "Yes," you must take corrective action and complete a corrective action log, found at https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates. You should also answer "Yes" if work to fix the problem from a previous inspection is still ongoing, though the operator must comply with the corrective action deadlines in CGP Part 5.2.

Date on Which Condition First Observed (If Applicable)?
Provide the date on which the condition that triggered the need for routine maintenance or corrective action was first identified. If the condition was just discovered during this inspection, enter the inspection date. If the condition is a carryover from a previous inspection, enter the original date of the condition's discovery.

Description of Conditions Observed
For each E&S control and the area immediately surrounding it, describe whether the control is properly installed and whether it appears to be working to minimize sediment discharge. Indicate also whether a new or modified control is necessary to comply with the permit. Describe any problem condition(s) you observed such as the following:

1. Failure to install or to properly install a required E&S control
2. Damage or destruction to an E&S control caused by vehicles, equipment, or personnel, a storm event, or other event
3. Mud or sediment deposits found downslope from E&S controls, including in receiving waters, or on nearby streets, curbs, or open conveyance channels
4. Sediment tracked out onto paved areas by vehicles leaving construction site
5. Noticeable erosion or sedimentation at discharge outlets or at adjacent streambanks or channels
6. Erosion of the site's sloped areas (e.g., formation of rills or gullies)
7. E&S control is no longer working due to lack of maintenance
8. Other incidents of noncompliance

Describe also why you think the problem condition(s) occurred as well as actions (e.g., routine maintenance or corrective action) you will take or have taken to fix the problem.

For buffer areas, make note of whether they are marked off as required, whether there are signs of construction disturbance within the buffer, which is prohibited under the CGP, and whether there are visible signs of erosion resulting from discharges through the area.

If routine maintenance or corrective action is required, briefly note the reason. If routine maintenance or corrective action has been completed, make a note of the date it was completed and what was done. *If corrective action is required, note that you will need to complete a separate corrective action log describing the condition and your work to fix the problem*.

Routine Maintenance Need Has Been Found to be Necessary Three (3) or More Times for the Same Control at the Same Location (Including this Occurrence)
If routine maintenance has been required three (3) or more times for the same control at the same location, the permit requires (CGP Part 2.1.4.c) you to fix the problem using the corrective action procedures in CGP Part 5 or to document why you believe the reoccurring problem can be addressed as a routine maintenance fix. If you believe the problem can continue to be fixed as routine maintenance, describe why you believe the specific condition should still be addressed as routine maintenance.

Instructions for Section C

Type and Location of Pollution Prevention (P2) Practices and Controls
Provide a list of all pollution prevention (P2) practices and controls that are implemented at your site. This list must include all P2 practices and controls required by CGP Part 2.3 and those that are described in your SWPPP.

Conditions Requiring Routine Maintenance?
Answer "Yes" if the P2 practice or control requires routine maintenance as defined in footnote 1of this template. Note that in many cases, "Yes" answers are expected and indicate a project with an active operation and maintenance program. You should also answer "Yes" if work to fix the problem is still ongoing

from the previous inspection, though necessary work must be initiated immediately and completed by the end of the next business day or within seven calendar days if documented in accordance with CGP Part 2.1.4.b.

If "Yes," How Many Times (Including this Occurrence) Has this Condition Been Identified?
Indicate how many times the routine maintenance has been required for the same practice or control at the same location.

Conditions Requiring Corrective Action?
Answer "Yes" if you found any of the conditions listed in footnote 2 in this template to be present during your inspection (CGP Part 5.1). If you answer "Yes," you must take corrective action and complete a corrective action log, found at https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates. You should also answer "Yes" if work to fix the problem from a previous inspection is still ongoing, though the operator must comply with the corrective action deadlines in CGP Part 5.2.

Date on Which Condition First Observed (If Applicable)?
Provide the date on which the condition that triggered the need for maintenance or corrective action was first identified. If the condition was just discovered during this inspection, enter the inspection date. If the condition is a carryover from a previous inspection, enter the original date of the condition's discovery.

Description of Conditions Observed
For each P2 control and the area immediately surrounding it, describe whether the control is properly installed, and whether it appears to be working to minimize or eliminate pollutant discharges. Indicate also whether a new or modified control is necessary to comply with the permit. Describe any problem condition(s) you observed such as the following:

1. Failure to install or to properly install a required P2 control
2. Damage or destruction to a P2 control caused by vehicles, equipment, or personnel, or a storm event
3. Evidence of a spill, leak, or other type of pollutant discharge, or failure to have properly cleaned up a previous spill, leak, or other type of pollutant discharge
4. Spill response supplies are absent, insufficient, or not where they are supposed to be located
5. Improper storage, handling, or disposal of chemicals, building materials or products, fuels, or wastes
6. P2 control is no longer working due to lack of maintenance
7. Other incidents of noncompliance

Describe also why you think the problem condition(s) occurred as well as actions (e.g., routine maintenance or corrective action) you will take or have taken to fix the problem.

If routine maintenance or corrective action is required, briefly note the reason. If routine maintenance or corrective action has been completed, make a note of the date it was completed and what was done. *If corrective action is required, note that you will need to complete a separate corrective action log describing the condition and your work to fix the problem*.

Routine Maintenance Need Was Found to be Necessary Three (3) or More Times for the Same Control at the Same Location (Including this Occurrence)
If routine maintenance has been required three (3) or more times for the same control at the same location, the permit requires (CGP Part 2.1.4.c) you to fix the problem using the corrective action procedures in CGP Part 5 or to document why you believe the reoccurring problem can be addressed as a routine maintenance fix. If you believe the problem can continue to be fixed as routine maintenance, describe why you believe the specific condition should still be addressed as routine maintenance.

Instructions for Section D

Specific Location That Has Been or Will Be Stabilized
List all areas where soil stabilization is required to begin because construction work in that area has permanently stopped or temporarily stopped (i.e., work will stop for 14 or more days), and all areas where stabilization has been implemented (CGP Part 2.2.14).

Stabilization Method and Applicable Deadline
For each area, specify the method of stabilization (e.g., hydroseed, sod, planted vegetation, erosion control blanket, mulch, rock).

Specify also which of the following stabilization deadlines apply to this location:

1. 5 acres or less of land disturbance occurring at any one time at site: Complete no later than 14 calendar days after stabilization initiated.
2. More than 5 acres of land disturbance occurring at any one time at site: Complete no later than 7 calendar days after stabilization initiated.
3. Arid, semi-arid, and drought-stricken areas: See CGP Part 2.2.14.b.i.
4. Unforeseen circumstances: See CGP Part 2.2.14.b.ii.
5. Discharges to a sediment- or nutrient-impaired water or to a water identified as Tier 2, 2.5, or 3 for antidegradation purposes: Complete no later than 7 days after stabilization initiated.

Stabilization Initiated?
For each area, indicate whether stabilization has been initiated. If "Yes," then enter the date stabilization was initiated.

Final Stabilization Criteria Met?
For each area, indicate whether the final stabilization criteria in CGP Part 2.2.14.c have been met. If "Yes," then enter the date final stabilization criteria were met.

Final Stabilization Photos Taken?
Answer "Yes" if you have taken photos before and after meeting the stabilization criteria as required in CGP Part 8.2.1.a.

Notes
For each area where stabilization has been initiated, describe the progress that has been made and what additional actions are necessary to complete stabilization. Note the effectiveness of stabilization in preventing erosion. If stabilization has been initiated but not completed, make a note of the date it is to be completed. If stabilization has been completed, make a note of the date it was completed. If stabilization has not yet been initiated, make a note of the date it is to be initiated and the date it is to be completed.

Instructions for Section E

You are only required to complete this section if a discharge is occurring at the time of the inspection (CGP Part 4.6.2).

Was a discharge (not including dewatering) occurring from any part of your site at the time of the inspection?
During your inspection, examine all points of discharge from your site, and determine whether a discharge is occurring. If a dewatering discharge was occurring, you must conduct a dewatering inspection pursuant to CGP Part 4.3.2. If there is a discharge, answer "Yes" and complete the questions below regarding the specific discharge. If there is not a discharge, answer "No" and skip to the next page.

Discharge Location (Repeat as necessary if there are multiple points of discharge.)
Specify the location on your site where the discharge is occurring. The location may be an outlet from a stormwater control or constructed stormwater channel, a discharge into a storm sewer inlet, or a specific point on the site. Be as specific as possible; it is recommended that you refer to a precise point on your site map.

Observations
Document the visual quality of the discharge and take note of the characteristics of the stormwater discharge, including color; odor; floating, settled, or suspended solids; foam; oily sheen; and other indicators of stormwater pollutants. Also, document signs of these same pollutant characteristics that are visible from your site and attributable to your discharge in receiving waters or in other constructed or natural site drainage features.

Instructions for Section F

Each inspection report must be signed and certified to be considered complete (CGP Part 4.7.2).

Operator or "Duly Authorized Representative" – MANDATORY (CGP Appendix G Part G.11.2 and CGP Appendix H Section X)

At a minimum, the site inspection report must be signed by either (1) the person who signed the NOI, or (2) a duly authorized representative of that person. The following requirements apply:

If the signatory will be the person who signed the NOI for permit coverage, as a reminder, that person must be one of the following types of individuals:

- *For a corporation*: By a responsible corporate officer. For the purpose of this subsection, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
- *For a partnership or sole proprietorship*: By a general partner or the proprietor, respectively.
- *For a municipality, State, Federal, or other public agency*: By either a principal executive officer or ranking elected official. For purposes of this subsection, a principal executive officer of a Federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

If the signatory will be a duly authorized representative, the following requirements must be met:

- The authorization is made in writing by the person who signed the NOI (see above);
- The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
- The signed and dated written authorization is included in the SWPPP. A copy must be submitted to EPA, if requested.

Sign, date and print your name and affiliation.

Contractor or Subcontractor - OPTIONAL

Where you rely on a contractor or subcontractor to complete the site inspection report, you should consider requiring the individual(s) to sign and certify each report. Note that this does not relieve you, the permitted operator, of the requirement to sign and certify the site inspection report as well. If applicable, sign, date, and print your name and affiliation.

Note

While EPA has made every effort to ensure the accuracy of all instructions contained in this template, it is the permit, not this template, that determines the actual obligations of regulated construction stormwater discharges. In the event of a conflict between this template and any corresponding provision of the CGP, you must abide by the requirements in the permit. EPA welcomes comments on this Site Inspection Report Template at any time and will consider those comments in any future revision. You may contact EPA for CGP-related inquiries at cgp@epa.gov

Appendix F – Corrective Action Log

2022 CGP Corrective Action Log
Project Name: _____
NPDES ID Number: _____

Section A – Individual Completing this Log	
Name:	**Title:**
Company Name:	**Email:**
Address:	**Phone Number:**
Section B – Details of the Problem (CGP Part 5.4.1.a) Complete this section within 24 hours of discovering the condition that triggered corrective action.	
Date problem was first identified:	**Time problem was first identified**:
What site conditions triggered this corrective action? *(Check the box that applies. See instructions for a description of each triggering condition (1 thru 6).)* ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5a ☐ 5b ☐ 6	
Specific location where problem identified:	
Provide a description of the specific condition that triggered the need for corrective action and the cause (if identifiable):	
Section C – Corrective Action Completion (CGP Part 5.4.1.b) Complete this section within 24 hours after completing the corrective action.	
For site condition # 1, 2, 3, 4, or 6 (those not related to a dewatering discharge) confirm that you met the following deadlines (CGP Part 5.2.1):	
☐ Immediately took all reasonable steps to address the condition, including cleaning up any contaminated surfaces so the material will not discharge in subsequent storm events. **AND**	
☐ Completed corrective action by the close of the next business day, unless a new or replacement control, or significant repair, was required. **OR**	
☐ Completed corrective action within seven (7) calendar days from the time of discovery because a new or replacement control, or significant repair, was necessary to complete the installation of the new or modified control or complete the repair. **OR**	
☐ It was infeasible to complete the installation or repair within 7 calendar days from the time of discovery. Provide the following additional information: Explain why 7 calendar days was infeasible to complete the installation or repair:	

Provide your schedule for installing the stormwater control and making it operational as soon as feasible after the 7 calendar days:

For site condition # 5a, 5b, or 6 (those related to a dewatering discharge), confirm that you met the following deadlines:

- ☐ Immediately took all reasonable steps to minimize or prevent the discharge of pollutants until a solution could be implemented, including shutting off the dewatering discharge as soon as possible depending on the severity of the condition taking safety considerations into account.
- ☐ Determined whether the dewatering controls were operating effectively and whether they were causing the conditions.
- ☐ Made any necessary adjustments, repairs, or replacements to the dewatering controls to lower the turbidity levels below the benchmark or remove the visible plume or sheen.

Describe any modification(s) made as part of corrective action: (Insert additional rows below if applicable)	**Date of completion:**	**SWPPP update necessary?**	**If yes, date SWPPP was updated:**
1.		☐ Yes ☐ No	
2.		☐ Yes ☐ No	

Section D - Signature and Certification (CGP Part 5.4.2)

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information contained therein. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information contained is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

MANDATORY: Signature of Operator or "Duly Authorized Representative:"	
Signature:	**Date:**
Printed Name:	**Affiliation:**
OPTIONAL: Signature of Contractor or Subcontractor	
Signature:	**Date:**
Printed Name:	**Affiliation:**

General Instructions

This Corrective Action Log Template is provided to assist you creating a corrective action log that complies with the minimum reporting requirements of Part 5.4 of the EPA's Construction General Permit (CGP). For each triggering condition on your site, you will need to fill out a separate corrective action log.

The entire form must be completed to be compliant with the requirements of the permit. (Note: In Section C, if you do not need the number of rows provided in the corrective action log, you may delete these or cross them off. Alternatively, if you need more space to describe any modifications, you may insert additional rows in the electronic version of this form or use the bottom of the page in the field version of this form.)

If you are covered under a State CGP, this template may be helpful in developing a log that can be used for that permit; however, you will likely need to modify this form to meet the specific requirements of any State-issued permit. If your permitting authority requires you to use a specific corrective action log, you should not use this template.

Instructions for Section A

Individual completing this form Enter the name of the person completing this log. Include the person's contact information (title, affiliated company name, address, email, and phone number).

Instructions for Section B

You must complete Section B within 24 hours of discovering the condition that triggered corrective action. (CGP Part 5.4)

When was the problem first discovered?
Specify the date and time when the triggering condition was first discovered.

What site conditions triggered this corrective action? (CGP Parts 5.1 and 5.3)
Check the box corresponding to the numbered triggering condition below that applies to your site.

1. A stormwater control needs a significant repair or a new or replacement control is needed, or, in accordance with Part Error! Reference source not found., you find it necessary to repeatedly (i.e., 3 or more times) conduct the same routine maintenance fix to the same control at the same location (unless you document in your inspection report under Part Error! Reference source not found. that the specific reoccurrence of this same problem should still be addressed as a routine maintenance fix under Part Error! Reference source not found.);
2. A stormwater control necessary to comply with the requirements of this permit was never installed, or was installed incorrectly;
3. Your discharges are not meeting applicable water quality standards;
4. A prohibited discharge has occurred (see Part 1.3);
5. During discharge from site dewatering activities:
   a. The weekly average of your turbidity monitoring results exceeds the 50 NTU benchmark (or alternate benchmark if approved by EPA pursuant to Part **Error! Reference source not found.**); or
   b. You observe or you are informed by EPA, State, or local authorities of the presence of any of the following at the point of discharge to a receiving water flowing through or immediately adjacent to your site and/or to constructed or natural site drainage features or storm drain inlets:
      - sediment plume
      - suspended solids
      - unusual color
      - presence of odor
      - decreased clarity
      - presence of foam
      - visible sheen on the water surface or visible oily deposits on the bottom or shoreline of the receiving water
6. EPA requires corrective action as a result of permit violations found during an inspection carried out under Part 4.8.

Provide a description of the problem (CGP Part 5.4.1.a)
Provide a summary description of the condition you found that triggered corrective action, the cause of the problem (if identifiable), and the specific location where it was found. Be as specific as possible about the location; it is recommended that you refer to a precise point on your site map.

Instructions for Section C

You must complete Section C within 24 hours after completing the correction action. (CGP Part 5.4)

Deadlines for completing corrective action for condition # 1, 2, 3, 4, or 6 (if not relating to a dewatering discharge) (CGP Part 5.2.1)
Check the box to confirm that you met the deadlines that apply to each triggering condition. You are always required to check the first box (i.e., Immediately took all reasonable steps to address the condition, including cleaning up any contaminated surfaces so the material will not discharge in subsequent storm events.). Only one of the next three boxes should be checked depending on the situation that applies to this corrective action.

Check the second box if the corrective action for this particular triggering condition does not require a new or replacement control, or a significant repair. These actions must be completed by the close of the next business day from the time of discovery of the condition.

Check the third box if the corrective action for this particular triggering condition requires a new or replacement control, or a significant repair. These actions must be completed by no later than seven calendar days from the time of discover of the condition.

Check the fourth box if the corrective action for this particular triggering condition requires a new or replacement control, or a significant repair, and if it is infeasible to complete the work within seven calendar days. Additionally, you will need to fill out the table below the checkbox that requires:

1. An explanation as to why it was infeasible to complete the installation or repair within seven calendar days of discovering the condition.
2. Provide the schedule you will adhere to for installing the stormwater control and making it operational as soon as feasible after the seventh day following discovery.

Note: Per Part 5.2.1.c, where these actions result in changes to any of the stormwater controls or procedures documented in your SWPPP, you must modify your SWPPP accordingly within seven calendar days of completing this work.

Deadlines for completing corrective action for condition # 5a, 5b, or 6 related to a dewatering discharge (CGP Part 5.2.2)
These deadlines apply to conditions relating to construction dewatering activities. Check the box to confirm that you met the deadlines that apply to each triggering condition. You are required to check all of the boxes in this section to indicate your compliance with the corrective action deadlines.

List of modification(s) to correct problem
Provide a list of modifications you completed to correct the problem.

Date of completion
Enter the date you completed the modification. The work must be completed by the deadline you indicated above.

SWPPP update necessary?
Check "Yes" or "No" to indicate if a SWPPP update is necessary consistent with Part 7.4.1.a in order to reflect changes implemented at your site. If "Yes," then enter the date you updated your SWPPP. The SWPPP updates must be made within seven calendar days of completing a corrective action. (CGP Part 5.2.1.c)

Instructions for Section D

Each corrective action log entry must be signed and certified following completion of Section D to be considered complete. (CGP Part 5.4.2)

Operator or "Duly Authorized Representative" – MANDATORY (CGP Appendix G Part G.11.2 and CGP Appendix H Section X)

At a minimum, the corrective action log must be signed by either (1) the person who signed the NOI, or (2) a duly authorized representative of that person. The following requirements apply:

If the signatory will be the person who signed the NOI for permit coverage, as a reminder, that person must be one of the following types of individuals:

- *For a corporation*: By a responsible corporate officer. For the purpose of this subsection, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
- *For a partnership or sole proprietorship*: By a general partner or the proprietor, respectively.
- *For a municipality, State, Federal, or other public agency*: By either a principal executive officer or ranking elected official. For purposes of this subsection, a principal executive officer of a Federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

If the signatory will be a duly authorized representative, the following requirements must be met:

- The authorization is made in writing by the person who signed the NOI (see above);
- The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
- The signed and dated written authorization is included in the SWPPP. A copy must be submitted to EPA, if requested.

Sign, date and print your name and affiliation.

Contractor or Subcontractor - OPTIONAL
Where you rely on a contractor or subcontractor to complete this log and the associated corrective action, you should consider requiring the individual(s) to sign and certify each log entry. Note that this does not relieve you, the permitted operator, of the requirement to sign and certify the log as well. If applicable, sign, date, and print your name and affiliation.

Recordkeeping

Logs must be retained for at least 3 years from the date your permit coverage expires or is terminated. (CGP Part 5.4.4)

Keep copies of your signed corrective action log entries at the site or at an easily accessible location so that it can be made immediately available at the time of an on-site inspection or upon request by EPA. (CGP Part 5.4.3) Include a copy of the corrective action log in your SWPPP. (CGP Part 7.2.7.e)

Note

While EPA has made every effort to ensure the accuracy of all instructions contained in this template, it is the permit, not this template, that determines the actual obligations of regulated construction stormwater discharges. In the event of a conflict between this template and any corresponding provision of the CGP, you must abide by the requirements in the permit. EPA welcomes comments on this Corrective Action Log Template at any time and will consider those comments in any future revision. You may contact EPA for CGP-related inquiries at cgp@epa.gov

Appendix G – SWPPP Amendment Log

Appendix G – SWPPP Amendment Log

Project Name:
SWPPP Contact:

Amendment No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]

Appendix H – Subcontractor Certifications/Agreements

Appendix H – Subcontractor Certifications/Agreements

SUBCONTRACTOR CERTIFICATION
STORMWATER POLLUTION PREVENTION PLAN

Project Number: _____

Project Title: _____

Operator(s): _____

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the BMPs and practices described in the SWPPP.

This certification is hereby signed in reference to the above named project:

Company: _____

Address: _____

Telephone Number: _____

Type of construction service to be provided: _____

_____

_____

Signature: _____

Title: _____

Date: _____

Appendix I – Grading and Stabilization Activities

Appendix I – Grading and Stabilization Activities Log

Project Name:
SWPPP Contact:

Date Grading Activity Initiated	Description of Grading Activity	Date Grading Activity Ceased (Indicate Temporary or Permanent)	Date When Stabilization Measures are Initiated	Description of Stabilization Measure and Location

Appendix J – Training Log

Appendix J – SWPPP Training Log

Stormwater Pollution Prevention Training Log

Project Name:

Project Location:

Instructor's Name(s):

Instructor's Title(s):

Course Location: _____ Date: _____

Course Length (hours): _____

Stormwater Training Topic: *(check as appropriate)*

- ❑ **Erosion Control BMPs**
- ❑ **Emergency Procedures**
- ❑ **Sediment Control BMPs**
- ❑ **Good Housekeeping BMPs**
- ❑ **Non-Stormwater BMPs**

Specific Training Objective:_____

_____

Attendee Roster: *(attach additional pages as necessary)*

No.	Name of Attendee	Company
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Appendix K – Delegation of Authority

Appendix K – Delegation of Authority Form

Delegation of Authority

I, _____ (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the Construction General Permit, at the _____ construction site. The designee is authorized to sign any reports, stormwater pollution prevention plans and all other documents required by the permit.

_____ (name of person or position)
_____ (company)
_____ (address)
_____ (city, state, zip)
_____ (phone)

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in _____ (Reference State Permit), and that the designee above meets the definition of a "duly authorized representative" as set forth in _____ (Reference State Permit).

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____

Company: _____

Title: _____

Signature: _____

Date: _____

Appendix L – Post Construction BMP Maintenance Log

Appendix L – Post-Construction BMP Yearly Maintenance Log

Water Quality Pond

Inspector is to date and initial each BMP inspection.

	Activity		
Month	Mow embankment and clean trash and debris from outlet structure. Address any accumulation of hydrocarbons.	Inspect embankment and outlet structure for damage and proper flow. Remove woody vegetation and fix any eroding areas. Monitor sediment accumulations in forebay and main pool.	Inspect wetland areas for invasive plants.
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

Note: Additional inspection should be made between years 3 and 7 and also years 15 and 20. Refer to post-construction BMP maintenance schedule for information.

Appendix M – OEPA Co-Permittee Form & Instructions

Instructions for Completing the Co-Permittee Notice of Intent (NOI) for NPDES Construction Storm Water General Permit Coverage

Who must file a Co-Permittee NOI form?

The Co-Permittee Notice of Intent (NOI) application form is used by other operators identified by the initial permittee to request shared coverage under the NPDES construction storm water general permit (CGP). As defined in Part VII.O of the CGP, an "operator" is any party that has operational control over construction plans and specifications or has day-to-day operational control of those activities at a project which are necessary to ensure compliance with the storm water pollution prevention plan (SWP3) for the site covered by the CGP. The applicant must certify their intention to comply with the CGP when submitting the completed Co-Permittee NOI. There is no fee for this application form. The application must be submitted to the following address:

Ohio Environmental Protection Agency
Division of Surface Water
General Permit Program
P.O. Box 1049
Columbus, OH 43216-1049

Completing the Form

All responses must be typewritten or printed legibly in the appropriate areas only. Please place each character slightly above the appropriate line on the Co-Permittee NOI application form. If necessary, abbreviate to stay within the space allowed for each item. Use only one space for breaks between words. If the requested information does not apply to your facility, leave it blank. Do not include any symbols or punctuation marks unless otherwise noted in these instructions.

Section I - Applicant Information/Mailing Address

Company Name: Fill in the legal name of the firm, person, public organization, or other entity (other than the original NOI applicant) that operates the facility or site described in this application. The name of the operator may or may not be the same as the facility. The company name is the name of the responsible party that is the legal entity that controls the facility's operation rather than the plant or site manager. Do not use a colloquial name.

Mailing Address: Enter the complete mailing address; including street address, city, state, and zip code. The permit and any correspondence will be mailed to this address.

Contact Person: Give the name of a contact person who is responsible for addressing NPDES requirements.

Phone and Fax: Provide the contact person's phone and fax numbers as: area code exchange numbers.

E-Mail Address: Enter the contact person's e-mail address, if available.

Section II - Facility/Site Location Information

Existing Ohio EPA Facility General Permit Number: Enter the facility permit number provided to the initial applicant (permittee) for the facility where you act as an operator. The facility general permit number is stated on the permit coverage approval letter sent to the initial applicant and was signed by the director of Ohio EPA.

Initial Permittee Name: Enter the name of the initial applicant (permittee) whom already obtained coverage for the facility under general permit OHC000002 or OHR100000.

Facility/Site Name: Enter the facility or site's official or legal name. The facility/site is the location of the operation and discharge to be covered by the general permit. Do not use a colloquial name.

City/Township/County/Zip Code: Enter the city or township, county, and zip code of where the site is located.

Facility Contact Person: Give the name of the person who is responsible for the facility/site.

Phone and Fax: Provide facility contact person's phone and fax numbers as: area code exchange numbers.

Facility Contact E-mail Address: Provide the facility contact person's e-mail address, if available.

Section III - Certification

Type or print the name and title of the person who will sign the form. Next, sign and date the form. Federal and State statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means: (1) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation; or (2) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: by a general partner or the proprietor; respectively, or

For a municipality, state, or other public facility; by either a principal executive officer, the ranking elected official, or other duly authorized employee.

Division of Surface Water

Co-Permittee Notice of Intent (NOI) for Coverage Under Ohio EPA Construction Storm Water General Permit

Submission of this NOI constitutes notice that the party identified in Section I of this form intends to be authorized by Ohio's NPDES general permit for storm water associated with construction activity. Becoming a permittee obligates a discharger to comply with the terms and conditions of the permit. NOTE: All necessary information must be provided on this form. Read the accompanying instructions carefully before completing the form. Do not use correction fluid on this form. Forms transmitted by fax will not be accepted. There is no fee associated with submitting this form.

I. Applicant Information/Mailing Address		
Company (Applicant) Name:		
Mailing (Applicant) Address:		
City:	**State:**	**Zip Code:**
Contact Person:	**Phone:**	**Fax:**
Contact E-mail Address:		

II. Facility/Site Location Information		
Existing Ohio EPA Facility Permit Number:		
Initial Permittee Name:		
Facility/Site Name:		
City:	**State:**	**Zip Code:**
County(ies):	**Township:**	
Facility Contact Person:	**Phone:**	**Fax:**
Facility Contact E-mail Address:		

III. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of the fine and imprisonment for knowing violations.

Applicant Name *(printed or typed)*:	**Title:**
Signature:	**Date:**

Appendix N – OEPA NOT Form & Instructions

Surface Water Tracking, Reporting, and Electronic Application Management System (STREAMS)

Notice of Termination (NOT) Application Form

May 18, 2017

Ohio Environmental Protection Agency

Ohio EPA, Division of Surface Water
50 West Town Street, Suite 700
Columbus, Ohio 43215
Telephone: (614) 644-2001 • Fax: (614) 644-2745

Notice of Termination (NOT) – Electronic Application Overview

The STREAMS service provides the capability to electronically submit the Notice of Termination (NOT) application form. This form can be accessed via your personal dashboard (i.e., the opening screen in STREAMS which displays your permit list, application list, and reports list). NOT application forms that are created will be listed on the Application List where additional actions may be performed on them (ex. downloading PDF application, edit, delete, and delegate).

Working within your secure eBusiness Center account, the ease of use of the new innovative smart forms, one-click submittals without having to mail paper forms to the agency, and the ability to make fee payments online make the STREAMS service the go-to destination to submit your HSTS permit application forms – as well as applications for nearly 20 other permit types and dozens of additional reports (ex. non-compliance, priority pollutant report, annual reports, etc.)

Detailed steps on how to fully complete the NOT application form has been graphically displayed below.

CONTENTS

Notice of Termination (NOT)

1) Service Activation - - - - Page 3
2) Adding Permits to the Dashboard - - Page 5
3) Creating Application Forms - - - Page 8
4) Completing the Application - - - Page 11
5) Submitting Applications - - - Page 14
6) Editing, Deleting, and Delegation - - Page 16
7) Technical Support - - - - Page 21

Appendix

I. EPA4493 NOT Instructions - - - Page 22

Service Activation

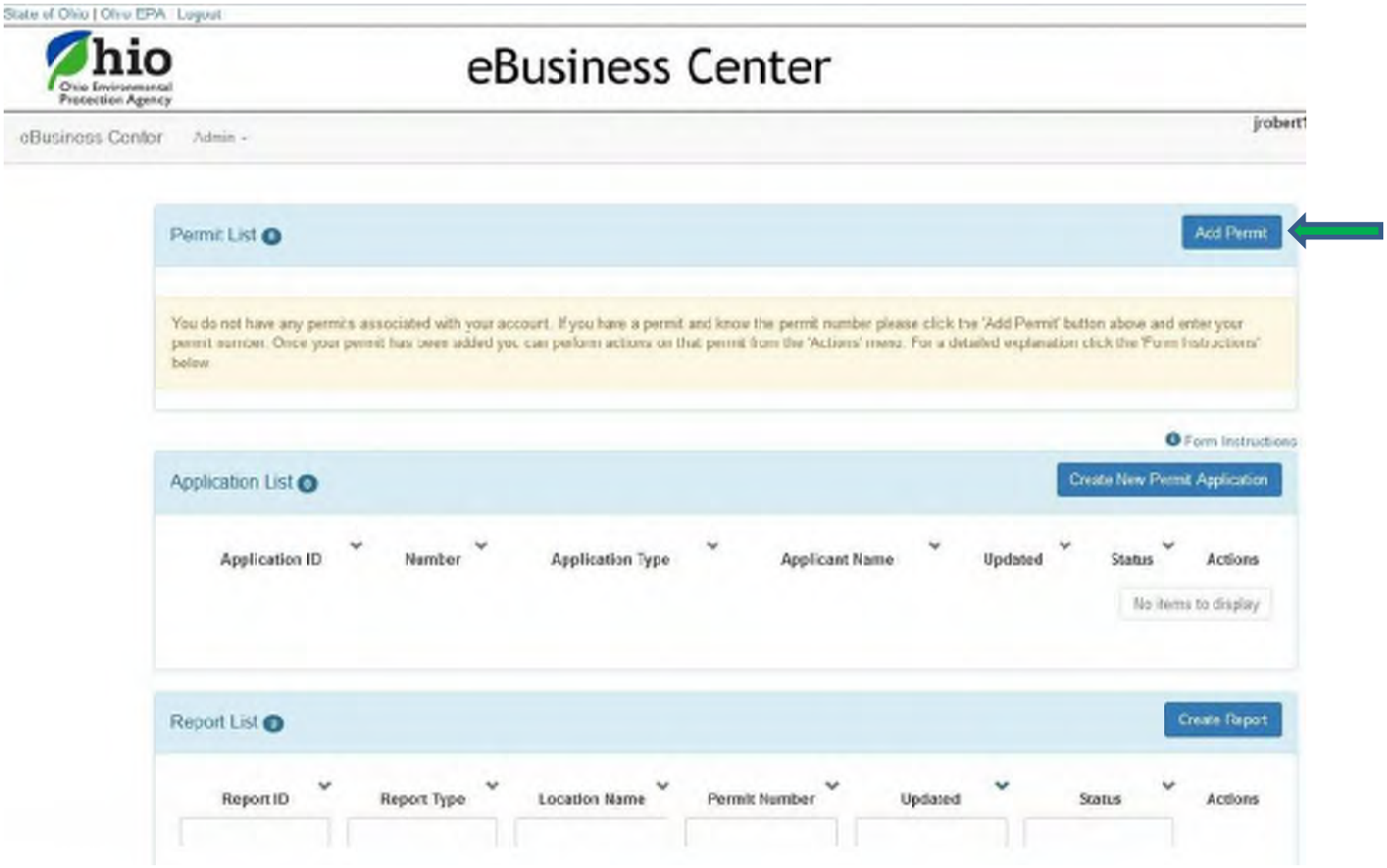


A *service* is a division within Ohio EPA that offers electronic services. To access STREAMS, click on ***Division of Surface Water NPDES Permit Applications (i.e., STREAMS)*** to select the service – you will be directed immediately.

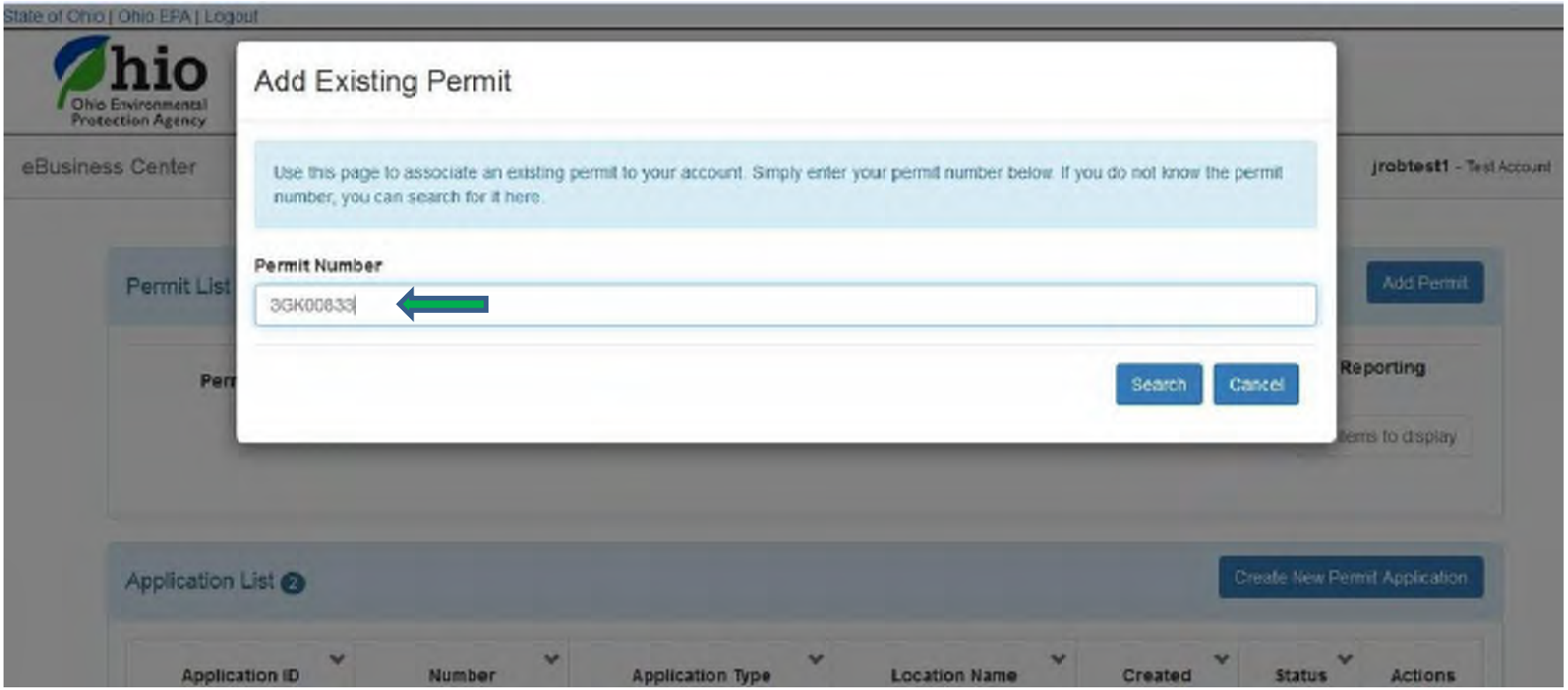


The first time you select this service you will be prompted to activate it – simply click ***Yes***. You will now be directed to your personal dashboard where you can add permits to your personal list/view, complete permit applications and various reports, and make fee payments using the ePayment Service.

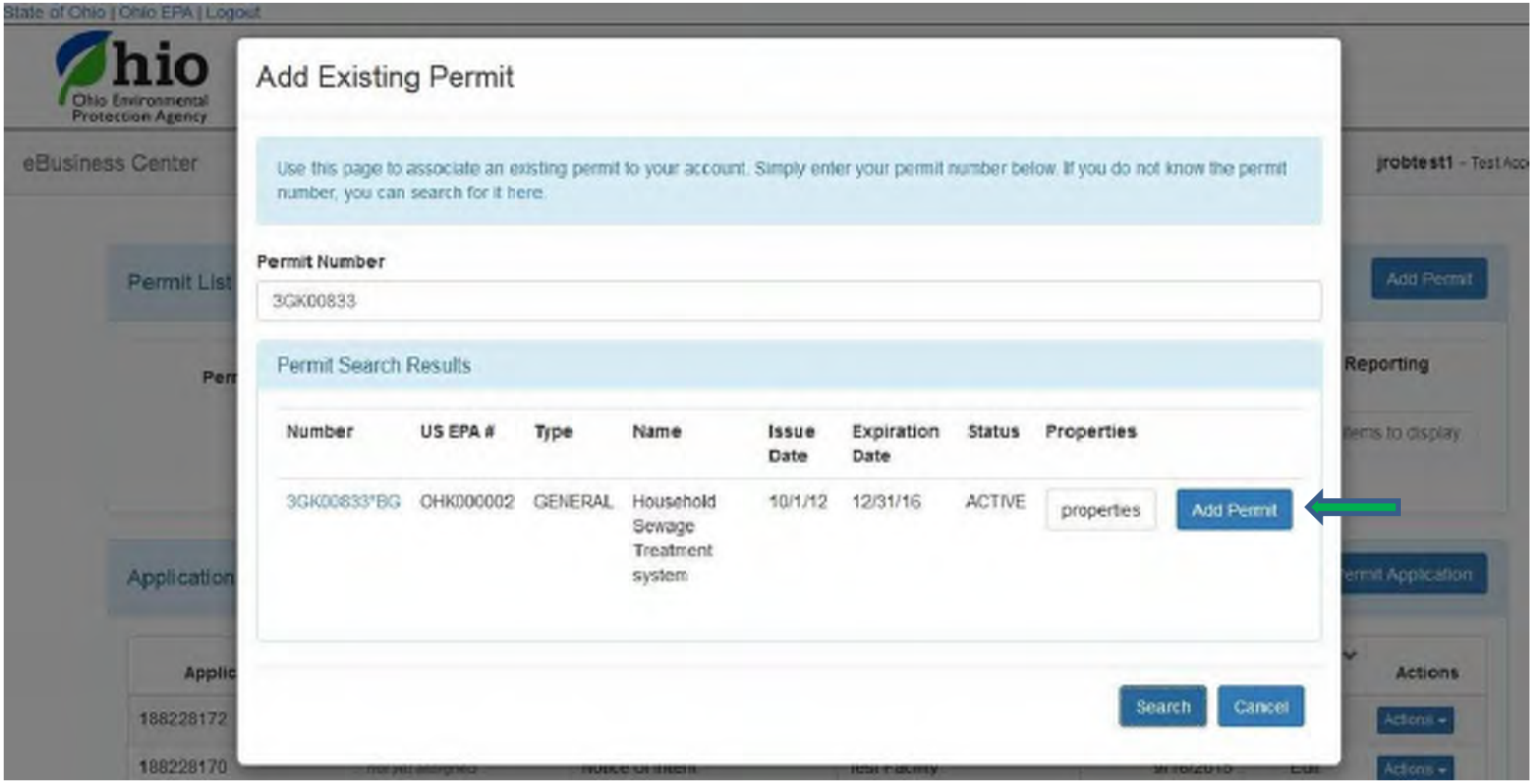
Adding Permits to the Dashboard



To fill out and submit a Notice of Termination application form, first add the permit to your Permit List on your personal dashboard. Click the ***Add Permit*** button to begin. *You can manage all of your permits by adding them to your Permit List.*

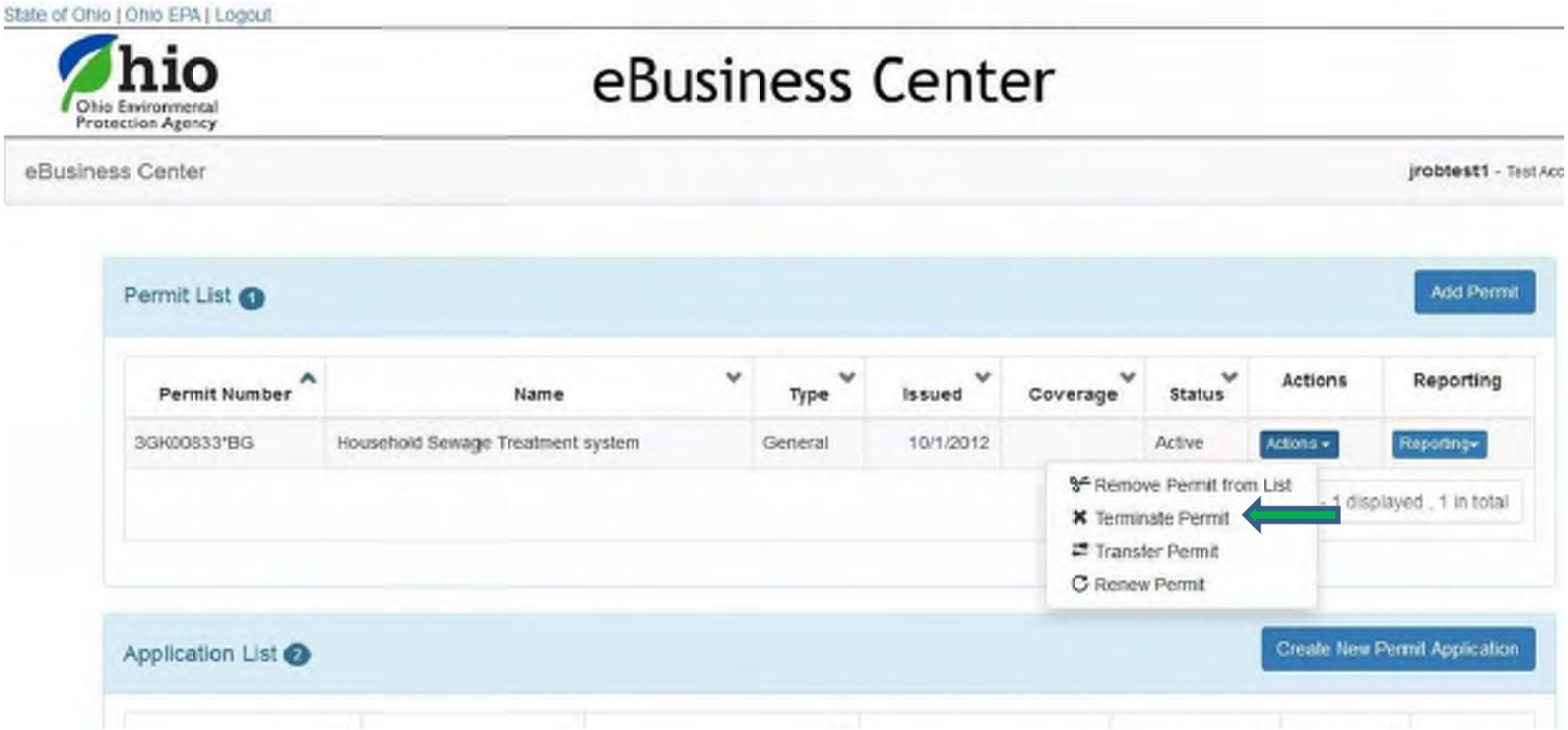


Enter your permit number and click ***the Search*** button.



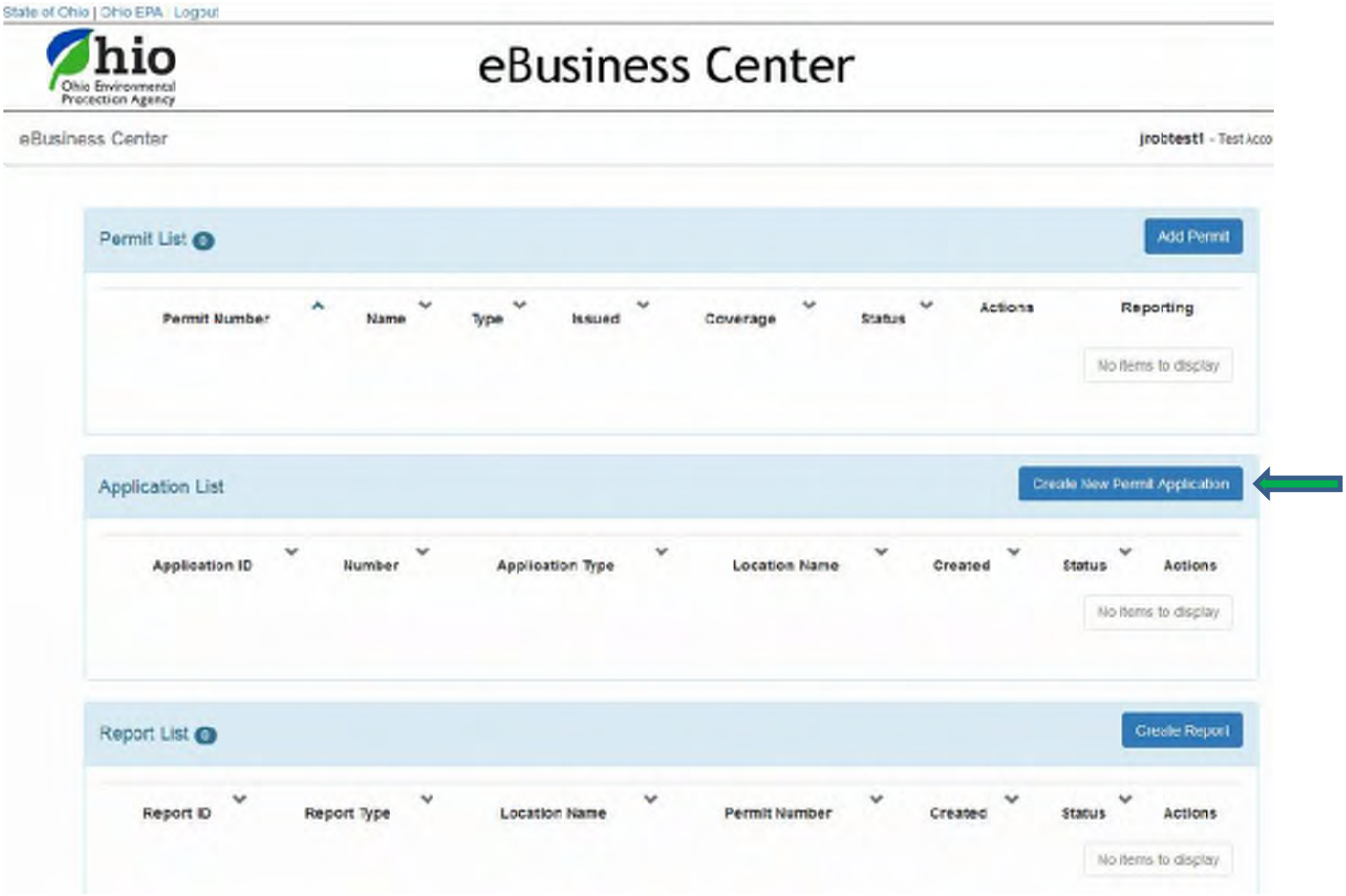
If a valid permit number has been entered the system will find the permit and display it in the Permit Search Results section. Click the ***Add Permit*** button to add the permit to your personal dashboard.

Creating Application Forms

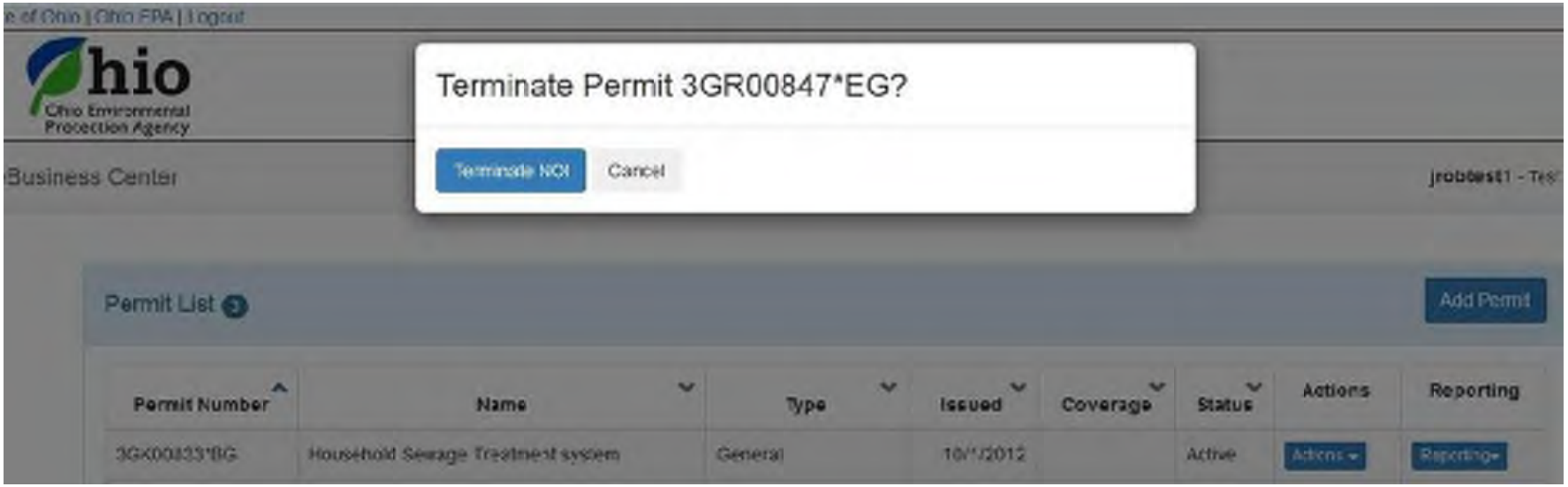


From your personal dashboard, click the ***Actions*** dropdown to access management tools which will allow you to ***Remove Permit from your List***, ***Terminate Permit***, ***Transfer Permit***, and ***Renew Permit***. Click ***Terminate Permit*** to open the Notice of Termination Application Form – the form will immediately open and be prepopulated with information relating to the permit and permit holder.

*NOTE: You can also select the **Reporting** dropdown to access any number of reporting forms relevant to the specific permit that can be submitted electronically within minutes – many of which apply to many of the other 20 permit types that can be instantly accessed within STREAMS.*

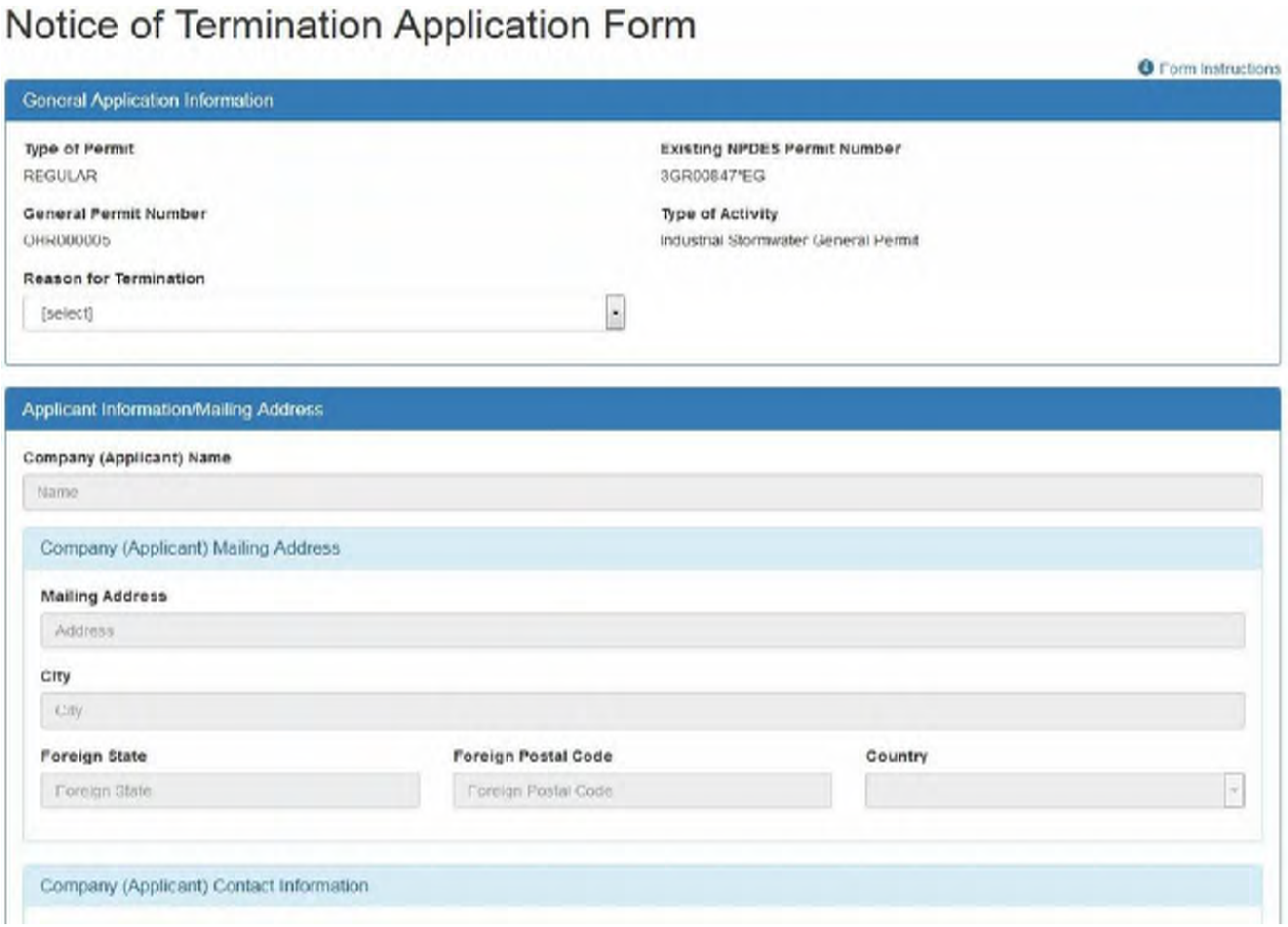


Alternatively, you can also click the ***Create New Permit Application*** button to access the NOT application form, you will be prompted to search for your facility and add it to your account before you can begin though. It is suggested that you add the permit to your account using the steps provided on the previous pages as it is a quicker method.

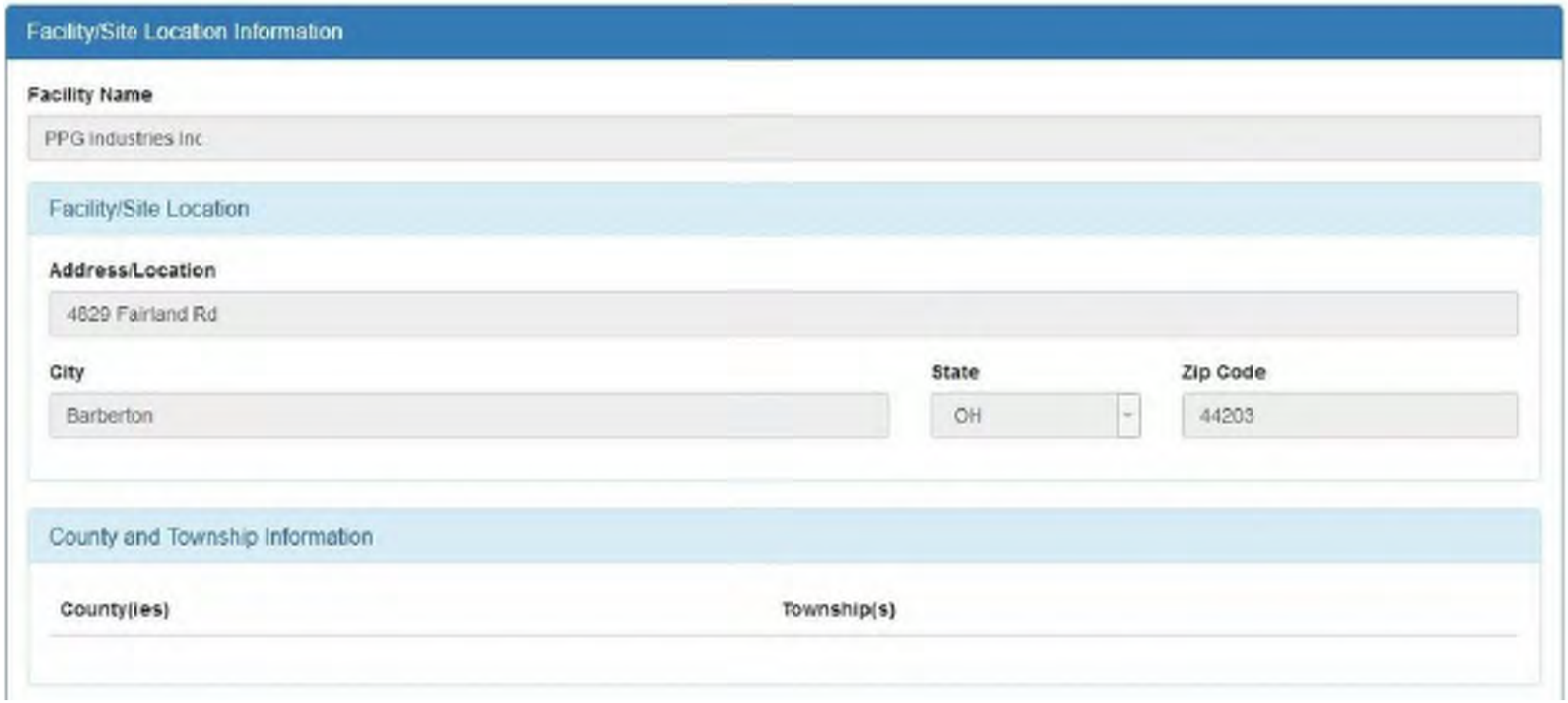


From the Actions dropdown, upon clicking ***Terminate Permit***, a confirmation box will appear with options to ***Terminate the NOI*** (i.e., the permit/coverage) or ***Cancel***. Click ***Terminate the NOI*** to open the electronic NOT application form.

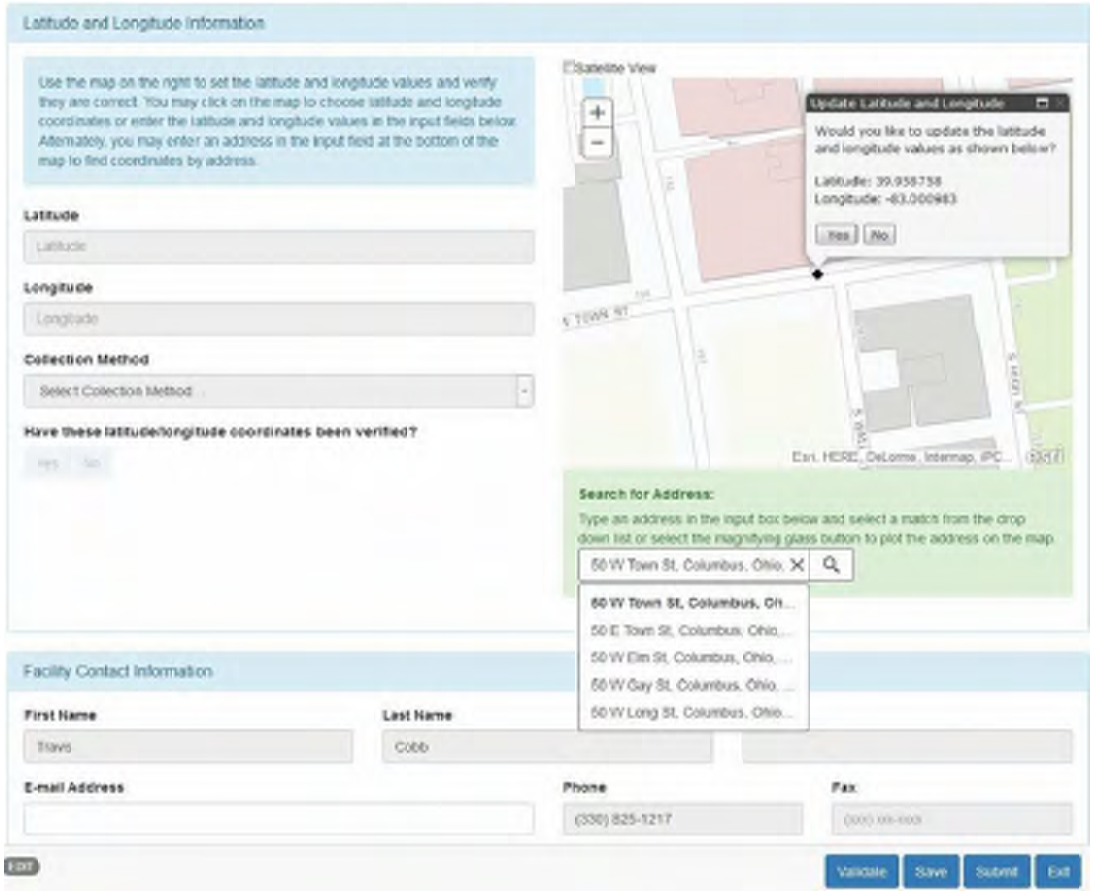
Completing the Application



First click the Reason for Termination dropdown to select from 6 different reasons. If you select the last option, labeled as ***Other***, an addition window will appear where you can manually type in a reason. Fill out the ***Applicant Information/ Mailing Address*** section. This includes the Company (Applicant) Mailing Address and Contact Info.

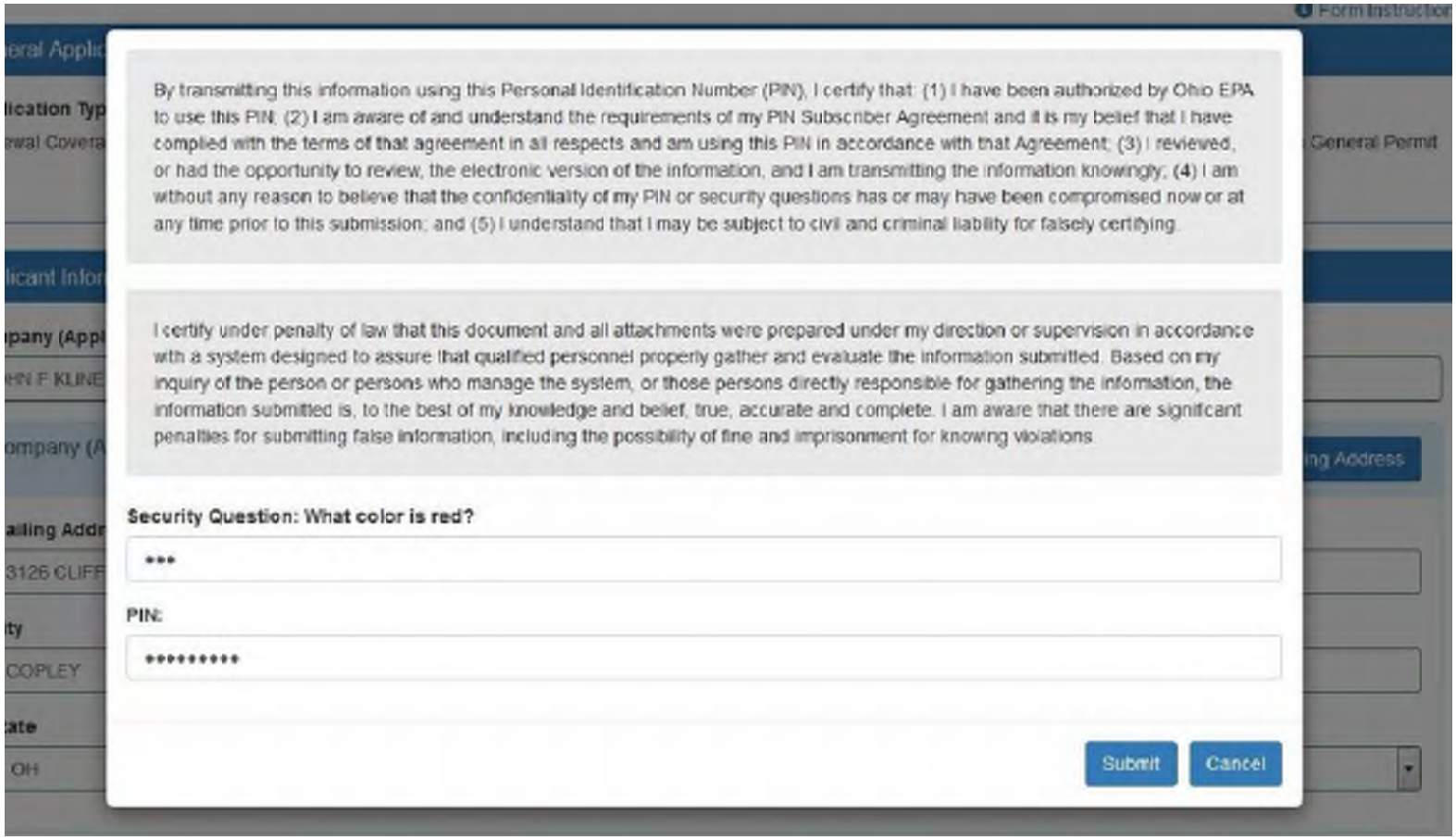


The ***Facility/Site Location Information*** section is prepopulated from the Agency permit database and cannot be changed on the form.

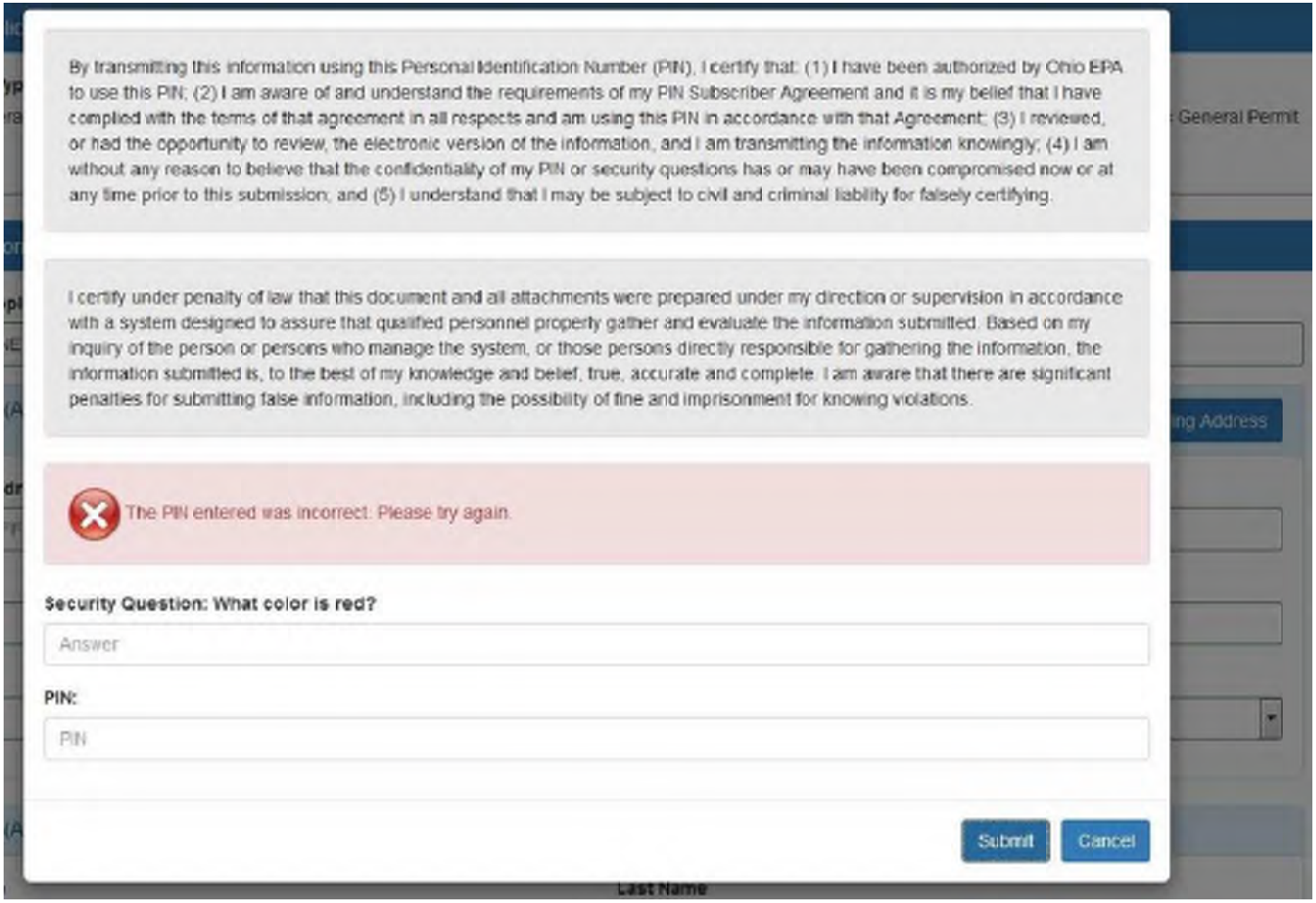


Type in latitude and longitude in the fields on the left or simply type in the facility address in the ***Search for Address*** field under the map. Once the location is found click the ***Yes*** button in the Update Latitude and Longitude box. The coordinates will automatically populate the Latitude and Longitude fields on the left. Click the Collection Method dropdown and select from the available options and click the ***Yes*** or ***No*** button under the coordinate verification question. Enter in a facility contact email address. You can now click the ***Validate*** button to check for entry errors or missing fields – they will be highlighted in **Red**, or click ***Save***, ***Submit***, or ***Exit***.

Submitting Applications

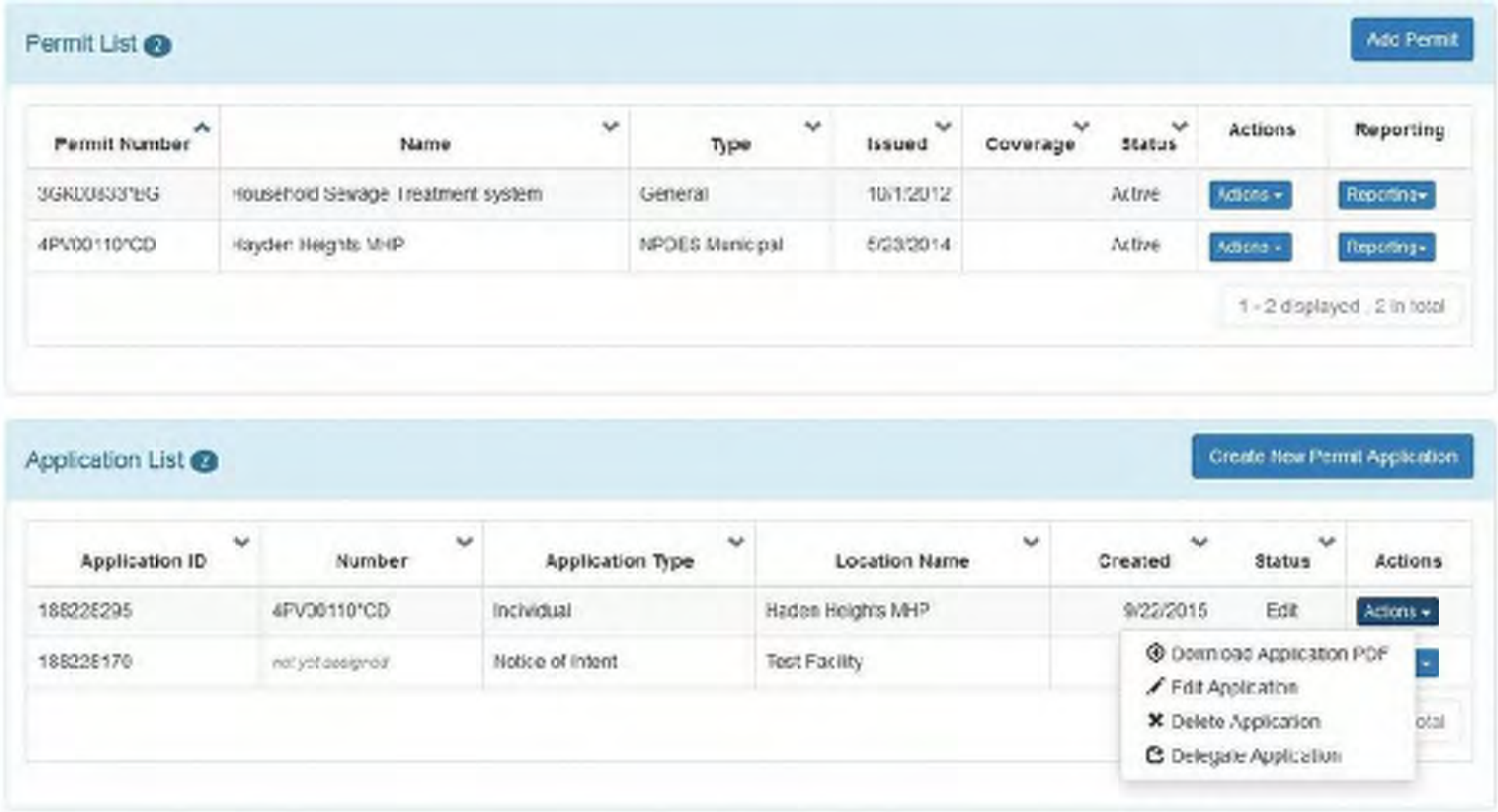


When you click the ***Submit*** button, you will be prompted to answer a security question and enter your PIN (i.e., your personal electronic signature). Enter this information and click the ***Submit*** button.

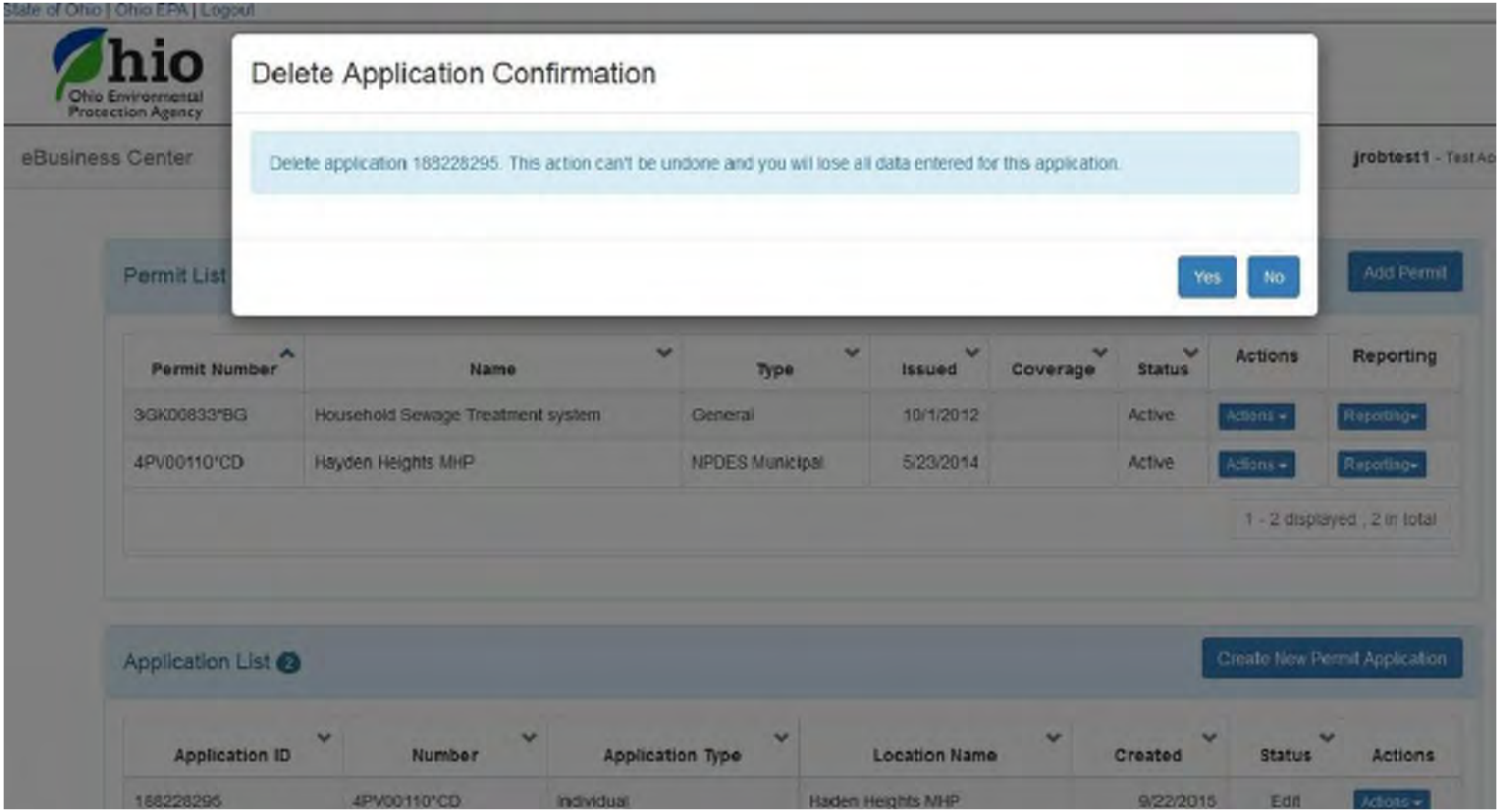


Entering in an incorrect security question answer or PIN will result in a red error message – simply just reenter this information and click the ***Submit*** button again.

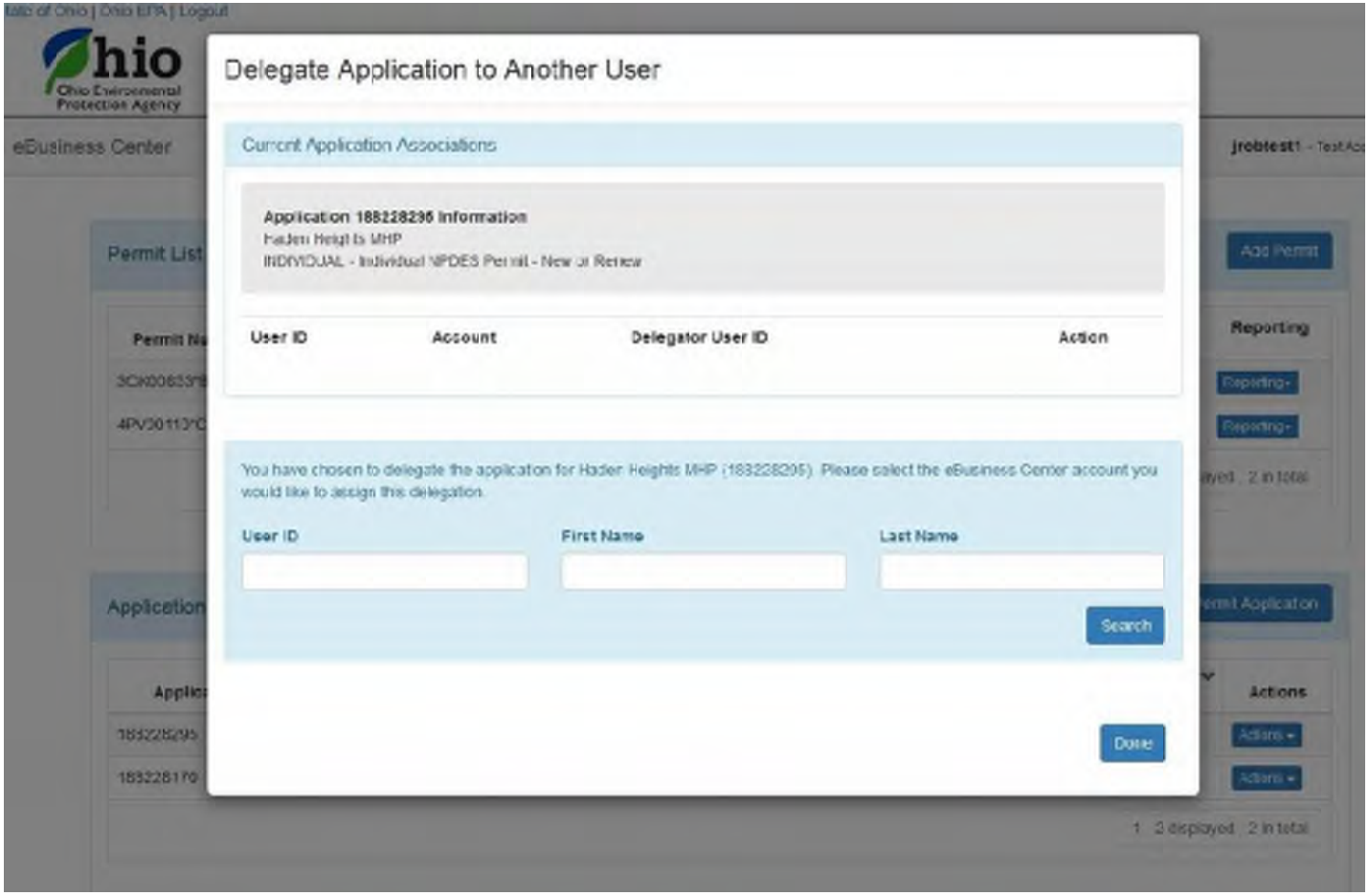
Editing, Deleting, and Delegation



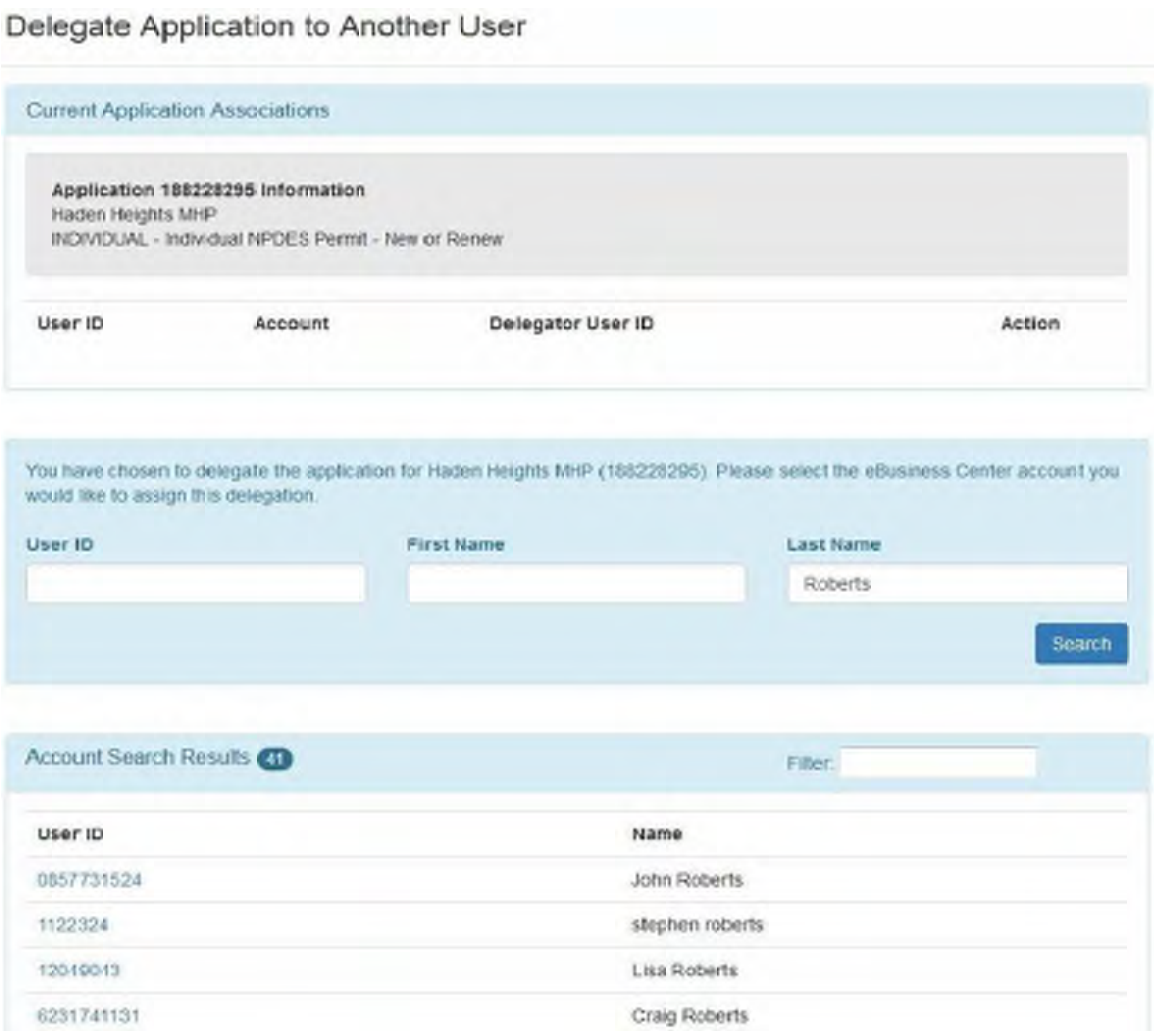
If you saved the application form and chose <u>not</u> to submit it immediately, it will now be housed on the Application List on your personal dashboard where you can now perform the tasks under the ***Actions*** dropdown. You have the ability to ***Download a PDF copy*** of the application, open the application back up in ***Edit*** mode, ***Delete*** it, or ***Delegate*** the application to another eBusiness Center account holder (ex. one person prepares the application, another person submits it).



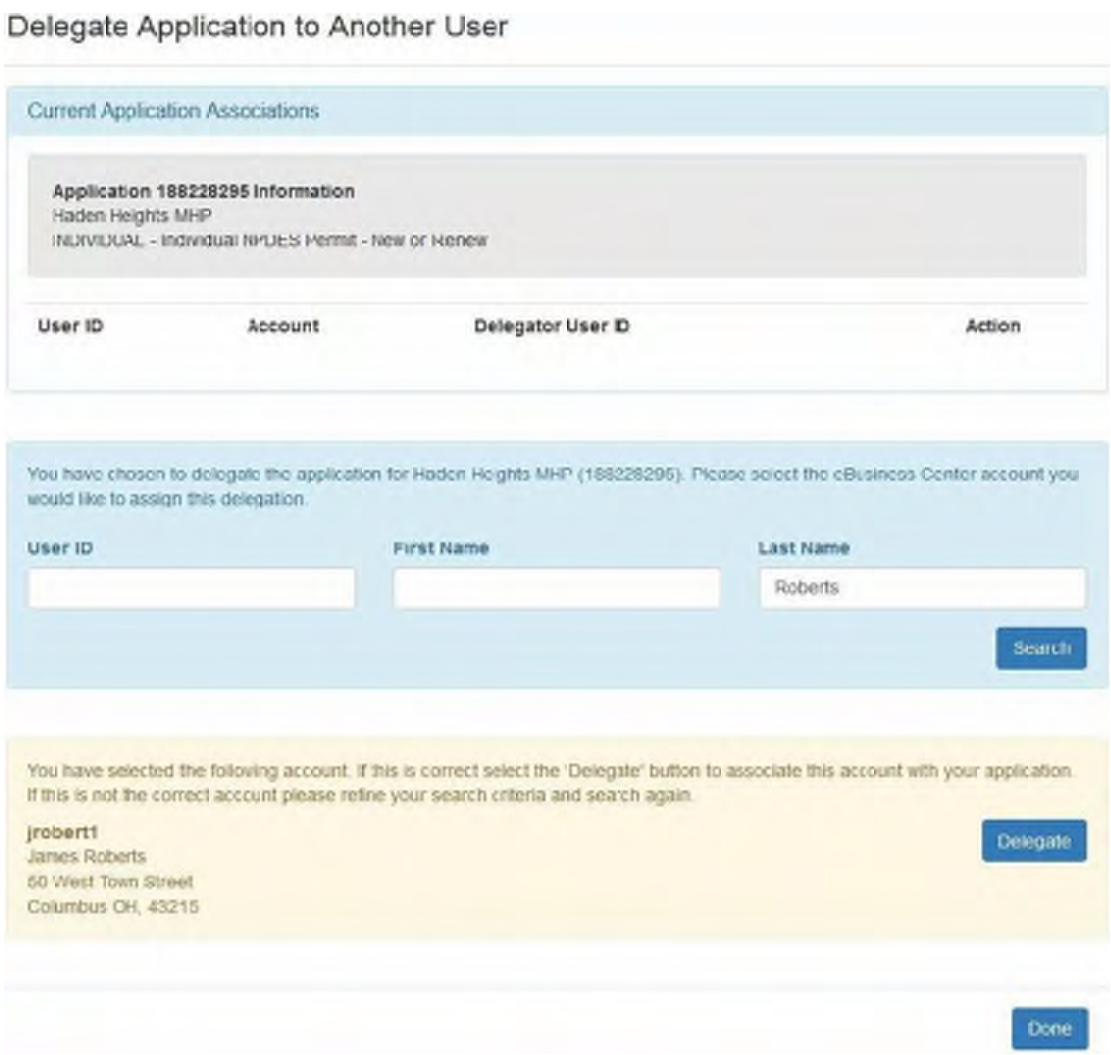
If you decide to delete the application form that you have created, simply click on the ***Actions*** dropdown and select ***Delete Application.*** A confirmation window will prompt you to confirm the deletion of the application. If confirmed, the application will no longer be present on your dashboard – you can now continue working in STREAMS or even create another application.



If you choose to delegate an application form, simply click on the ***Actions*** dropdown and select ***Delegate Application.*** The system will prompt you to search for the account holder that you want to delegate to. If you know their eBusiness Center account User ID, simply type it in and click ***Search***. TIP: Do not fill in all search fields (for example, if you do not know the User ID, simply type in their last name and click ***Search***.)



The example above is a search by the Last Name of "Roberts". The system returns a list of all user names that match, simply click the User ID to the left to delegate access to the application/report that you have created and saved.



A confirmation will be shown of the account holder that you selected, simply click the ***Delegate*** button to complete the delegation. At this point, the account holder you have delegated can log into their personal eBusiness Center account and will have the application/report listed on their dashboard.

Technical Support

For permit specific questions, contact the particular permit section at Ohio EPA or your Ohio EPA permit writer assigned to the particular permit.

Michael Joseph, (614) 752-0782, Mike.Joseph2@epa.ohio.gov

For technical assistance with STREAMS or any of the Division of Surface Water's Electronic Business Services, don't hesitate to contact the system administrator. The administrator urges each account holder to develop a positive working relationship with DSW to remain current on relevant topics, obtain value-added tips, streamline efforts, and to always have a go-to contact when you need one.

The preferred method of communication is through email as the administrator can email you personalized click-by-click instructions. If you leave a voice mail or send an email, you will receive expert advice from the administrator -- nearly 95% of technical assistance requests are handled within minutes, but can take up to 24 hours if the administrator is out of the office or away from the desk.

BUSINESS HOURS: Mon- Fri: 7:00 a.m. – 5:00 p.m.

Whitney Works
eDMR / STREAMS Administrator
Division of Surface Water
50 West Town Street, Suite 700
Columbus, OH 43215

Whitney.Works@epa.ohio.gov
Phone: (614) 644-2135

Jamie Roberts
Data Systems Analyst
Division of Surface Water
50 West Town Street, Suite 700
Columbus, OH 43215

James.Roberts@epa.ohio.gov
Phone: (614) 644-2054

eBusiness Center Helpdesk (PINS & Passwords): (877) 372-2499

Appendix I

Ohio EPA Division of Surface Water

EPA4493 NOT Instructions

Instructions - Notice of Termination (NOT) Form For Ohio EPA General Permits

Where to file NOT form

NOTs should be submitted electronically. If unable to submitt electronically forms must be sent to the following address:

Ohio Environmental Protection Agency
General Permit Program
P.O. Box 1049
Columbus, OH 43216-1049

Completing the Form

Please complete the online form through the eBusiness Center. If unable to submit electronically, the fill-in form is online at www.epa.ohio.gov/dsw/permits/gpfact.aspx or print legibly in the appropriate areas only. Forms transmitted by FAX will not be accepted. Complete all sections of the NOT form. Incomplete forms will be returned to the applicant for resubmittal.

Please place each character slightly above the appropriate line. Abbreviate if necessary to stay within the space allowed for each item.

Section I - Permit Information

Enter the existing Ohio NPDES general permit number assigned to the facility or site for which you are submitting this NOT. If you do not know the permit number, contact the Ohio EPA Storm Water Section at (614) 644-2001.

Section II - Owner/Applicant Information/Mailing Address

This information should appear on the NOT form as it appears on the original Notice of Intent (NOI) form.

Give the legal name of the person, firm, public organization, or any other entity that operates the facility or site described in the application. The name of the operator may or may not be the same as the facility. The operator of the facility is the legal entity which controls the facility's operation rather than the plant or site manager. For construction activities, the responsible party is the owner or the developer of the property. Do not use a colloquial name. Give the name and phone number of a contact person who is responsible for addressing NPDES permit requirements. Enter the complete address and telephone number of the operator (provide phone number as: area code exchange number).

Section III - Facility/Site Location Information

This information should appear on the NOT form as it appears on the original Notice of Intent (NOI) form.

Enter the facility's or site's official or legal name and complete address, including city, state, zip code, county, township, and section. If the facility lacks a street address, indicate the street name and approximate address number.

Section IV - Reason for Termination

Indicate your reason for submitting this NOT by placing an "x" on the appropriate space. You may indicate more than one reason.

Standard Certification

The standard certification should be completed except where a specific certification (listed below) is required.

Industrial Storm Water and Coal Mining Activity Certification Only

This certification should be completed only if you are submitting this NOT to terminate permit coverage under the storm water general permit associated with industrial activity or the general permit associated with coal mining activity.

Construction Certification Only

This certification should be completed only if you are submitting this NOT to terminate permit coverage under the storm water general permit associated with construction activity.

Note for all certifications: provide date as month day year using 2 digits for each space.

Signatory Requirements

Federal statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows.

For a corporation; by a responsible corporate officer, which means: (1) a president, secretary, treasurer or vice-president of the corporation in charge of a principal business function or any other person who performs similar policy or decision-making functions for the corporation; or (2) the manager of one or more manufacturing, production or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship; by a general partner or the proprietor; or

For a municipality, state, federal, or other public facility; by either a principal executive officer or ranking elected official.

Notice of Termination (NOT) of Coverage Under Ohio Environmental Protection Agency General NPDES Permit

Division of Surface Water

(Read accompanying instructions carefully before completing this form.)

Submission of this NOT constitutes notice that the party identified in Section II of this form is no longer authorized to discharge into state waters under the NPDES general permit program. NOTE: All necessary information must be provided on this form. Do not use correction fluid on this form. Forms transmitted by fax will not be accepted. There is no fee associated with submitting this form.

I. Permit Information:

NPDES General Permit Number: OH

Facility General Permit Number:

II. Owner/Applicant Information/Mailing Address

Company (Applicant) Name:

Mailing (Applicant) Address:

City: **State:** Ohio **Zip Code:** -

Contact Person: **Phone:** ( ) - **Fax:** ( ) -

Contact Email:

III. Facility/Site Location Information

Facility Name:

Facility Address/Location:

City: **State:** Ohio **Zip Code:** -

County: **Township(s):** **Section:**

Facility Contact Person: **Phone:** ( ) - **Fax:** ( ) -

Facility Contact Email:

IV. Reason for Termination

Transfer of Ownership ☐ Cease to Discharge ☐ Facility Closed ☐

Project Completed ☐ Obtained Individual Permit ☐

V. Certifications

Standard Certification:

I certify under penalty of law that all discharges authorized by the NPDES general permit have been eliminated or that I am no longer the operator of the facility. I understand that by submitting this NOT, I am no longer authorized to discharge under this general permit and that discharging pollutants to waters of the state without an NPDES permit is unlawful under ORC 6111.

Name (typed): **Title:**

Signature: **Date:**

Industrial Storm Water and Coal Mining Activity Certification Only:

I certify under penalty of law that all discharges associated with the identified facility that are authorized by the above referenced NPDES general permit have been eliminated, that I am no longer the operator of the facility, or in the case of a coal mine that the SMCRA bond has been released by ODNR-Division of Reclamation. I understand that by submitting this NOT, I am no longer authorized to discharge storm water associated with industrial activity under this general permit, and that discharging pollutants in storm water associated with industrial activity to waters of the state is unlawful under ORC 6111 where the discharge is not authorized by an NPDES permit.

Name (typed): **Title:**

Signature: **Date:**

Storm Water Construction Activity Certification Only:

For non-residential developments, I certify under penalty of law that, prior to the submittal of this NOT, all elements of the storm water pollution prevention plan have been completed, the disturbed soil at the identified facility have been stabilized and temporary erosion and sediment control measures have been removed at the appropriate time, or all storm water discharges associated with construction activity from the identified facility that are authorized by the above referenced NPDES general permit have otherwise been eliminated.

For residential developments only, I certify under penalty of law that, prior to the submittal of this NOT, either (i) temporary stabilization has been completed and the lot, which includes a home, has been transferred to the homeowner; (ii) final stabilization has been completed and the lot, which does not include a home, has been transferred to the property owner; or (iii) no stabilization has been implemented on a lot, which includes a home, and the lot has been transferred to the homeowner.

I understand that, by submitting this NOT, I am no longer authorized to discharge storm water associated with construction activity by the general permit, and that discharging pollutants in storm water associated with construction activity to waters of the state is unlawful under ORC 6111 where the discharge is not authorized by an NPDES permit.

Name (typed): **Title:**

Signature: **Date:**

Appendix O – Site Grading/BMP Details



FLOODPLAIN

ALL OF THE SITE IS IN THE FLOOD HAZARD X (OUTSIDE THE 100-YEAR FLOODPLAIN) AS SHOWN ON FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP, MAP NUMBER 39165C0062E, EFFECTIVE DATE, 12/17/2010.

GRADING NOTES

1. EXISTING TOPOGRAPHIC INFORMATION IS FROM CESO SURVEY DATED 02-16-2024
2. CONTRACTOR TO VERIFY ALL EXISTING TOPOGRAPHY AND STRUCTURES ON THE SITE AND IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO STARTING WORK.
3. ALL ELEVATIONS SHOWN DEPICT FINISHED GRADE UNLESS OTHERWISE NOTED. GENERAL CONTRACTOR TO COORDINATE WITH EXCAVATION, LANDSCAPE AND PAVING SUBCONTRACTORS REGARDING TOPSOIL THICKNESS FOR LANDSCAPE AREAS AND PAVEMENT SECTION THICKNESS FOR PAVED AREAS TO PROPERLY ENSURE ADEQUATE CUT TO ESTABLISH SUBGRADE ELEVATIONS.
4. NO EARTHEN SLOPE SHALL BE GREATER THAN 4:1, UNLESS OTHERWISE NOTED.
5. MAXIMUM RUNNING SLOPE SHALL NOT EXCEED 5% AND CROSS SLOPE SHALL NOT EXCEED 2% ON ALL SIDEWALKS AND ACCESSIBLE ROUTES.
6. MATCH EXISTING ELEVATIONS AT THE LIMITS OF DISTRUBANCE.
7. THE CONTRACTOR SHALL EMPLOY A LICENSED PUBLIC SURVEYOR TO SET ALL GRADES, SPOT ELEVATIONS, AND FLOWLINES NEEDED FOR PROJECT.
8. SHOULD ANY MODIFICATIONS BE REQUIRED TO THE PROPOSED SPOT GRADES DUE TO CONDITIONS ENCOUNTERED IN THE FIELD, CONTACT THE OWNER AND CIVIL ENGINEER IMMEDIATELY AND PRIOR TO MAKING ANY CHANGES.
9. NO DEPRESSIONS, "BIRD BATHS", ETC. SHALL BE PERMITTED IN THE PAVING. SHOULD ANY MODIFICATIONS BE REQUIRED TO THE PROPOSED GRADES TO ACHIEVE POSITIVE DRAINAGE, CONTACT THE OWNER AND LANDSCAPE ARCHITECT IMMEDIATELY.
10. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UTILITIES. SHOULD ANY UTILITIES BE DAMAGED BY THE CONTRACTOR, THE CONTRACTOR SHALL PROMPTLY REPAIR ANY SUCH DAMAGE AT NO ADDITIONAL EXPENSE TO THE OWNER AND THE VARIOUS UTILITY COMPANIES.
11. CONTRACTOR TO VERIFY EXISTING ELEVATION PRIOR TO CONSTRUCTION AND NOTIFY OWNER AND CIVIL ENGINEER OF ANY DISCREPANCIES.
12. ALL PLAY AREAS TO HAVE MAXIMUM 2% CROSS SLOPE IN ALL DIRECTIONS.

LEGEND

- EXISTING STORM SEWER LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- XXX.XX SPOT ELEVATION
- TREE PROTECTION FENCE (SEE DETAIL 7, C3.1)
- CONSTRUCTION FENCE (SEE DETAIL 2, C3.1)
- LIMITS OF DISTURBANCE
- INLET PROTECTION (SEE DETAIL 6, C3.3)
- SILT FENCE (SEE DETAIL 5, C3.2)
- OVERLAND FLOOD ROUTING
- ROCK CHECK DAM (SEE DETAIL 8, C3.1)

No.	REVISIONS	DATE	BY

Kimley»Horn

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7965 NORTH HIGH STREET, SUITE 200
COLUMBUS, OH 43235
PHONE: 614-459-0939
WWW.KIMLEY-HORN.COM

SCALE: AS NOTED | DESIGNED BY: KAP | DRAWN BY: KAP | CHECKED BY: OMH

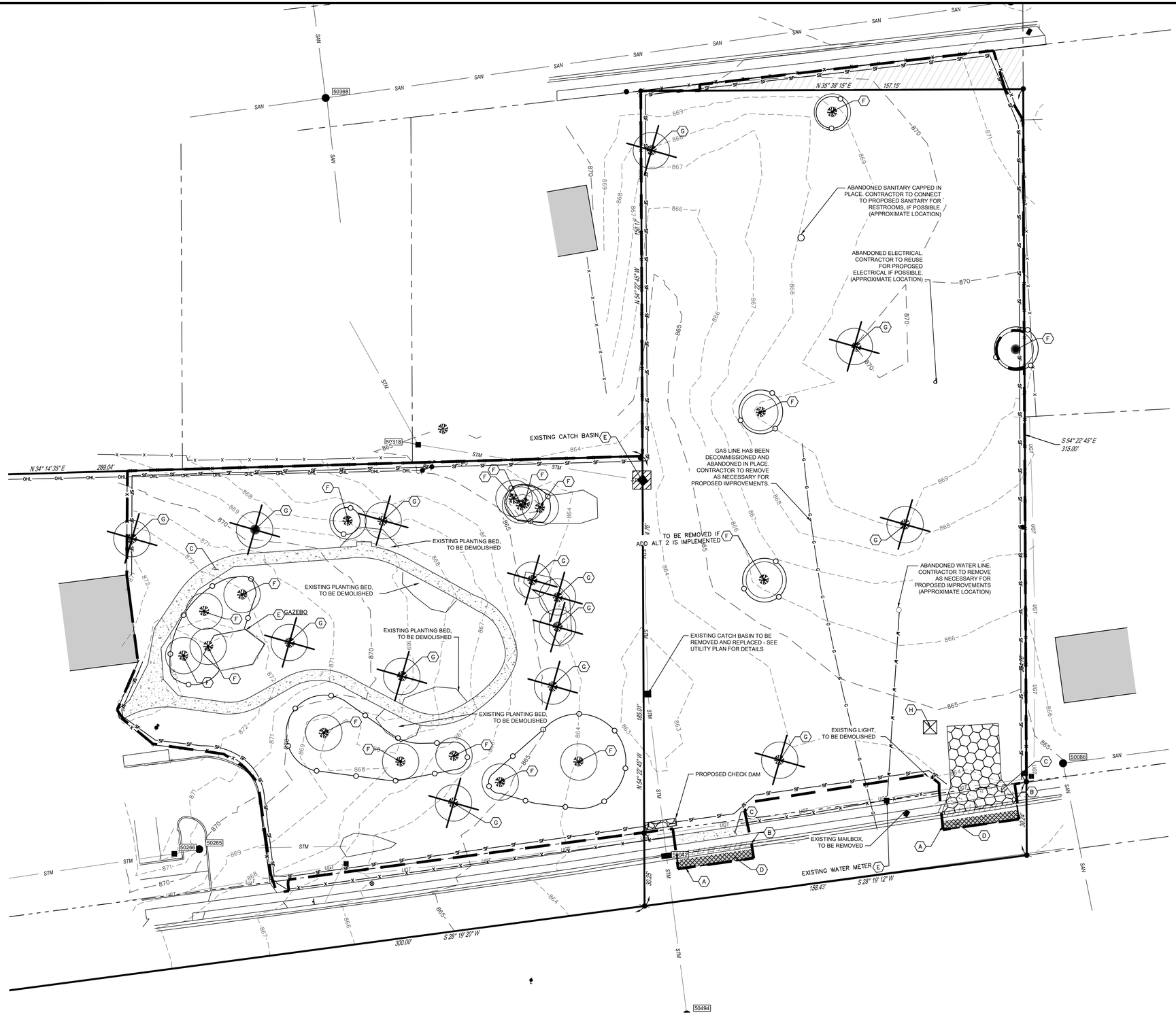
STATE OF OHIO
ANDREW JAMES SCHALL
PE.68885
REGISTERED
PROFESSIONAL ENGINEER
09/29/2025

MARY L. COOK
COMMUNITY PLAYSCAPE
381 OLD STAGE RD.
WAYNESVILLE, OHIO 45068

GRADING PLAN

ORIGINAL ISSUE: 01/17/2025
KHA PROJECT NO. 190310000
SHEET NUMBER
C5.0

Drawing name: K:\CLB_LA\190310000 - Mary L Cook Library\2 Design\CAD\PlanSheets\GRADING PLAN.dwg C5.0 GRADING PLAN Sep 30, 2025 7:18am by Keegan.Pauff
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GRAPHIC SCALE IN FEET
0 10 20 40

DEMOLITION LEGEND

- A — SAWCUT LINE
- B — CURB REMOVAL
- C — CONCRETE REMOVAL
- D — ROADWAY ASPHALT REMOVAL
- E — ITEM TO REMAIN, PROTECT THROUGHOUT DURATION OF CONSTRUCTION
- F — EXISTING TREE TO REMAIN
- G — EXISTING TREE TO BE REMOVED
- H — CONCRETE WASHOUT, COORDINATE FINAL LOCATION WITH OWNER (SEE DETAIL 6, C3.1)
- CONSTRUCTION ENTRANCE, COORDINATE FINAL LOCATION WITH OWNER (SEE DETAIL 5, C3.1)
- ROCK CHECK DAM (SEE DETAIL 8, C3.1)
- LIMITS OF DISTURBANCE (1.83 AC)
- XXX — EXISTING CONTOURS
- TREE PROTECTION FENCE (SEE DETAIL 7, C3.1)
- CONSTRUCTION FENCE (SEE DETAIL 2, C3.1)
- SILT FENCE (SEE DETAIL 5, C3.2)
- INLET PROTECTION (SEE DETAIL 6, C3.3)

NOTES

1. CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO THE INITIATION OF DEMOLITION.
2. CONTRACTOR TO ENSURE SITE IS FREE OF HAZARDS AND SECURE DURING CONSTRUCTION AND AFTER HOURS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL EXISTING UTILITIES WITH THE VILLAGE, AND THE VARIOUS UTILITY COMPANIES. ANY UTILITIES WHICH ARE DAMAGED BY THE CONTRACTOR SHALL BE PROMPTLY REPAIRED AT NO ADDITIONAL EXPENSE TO THE OWNER. SHOULD ANY MODIFICATIONS BE REQUIRED, CONTACT THE OWNER IMMEDIATELY, PRIOR TO MAKING THE CHANGE.
4. THE CONTRACTOR SHALL COORDINATE THE LIMITS OF REMOVAL WORK WITH THE OWNER.
5. ALL REMOVAL ITEM DEBRIS (UNLESS OTHERWISE NOTED) BECOMES THE PROPERTY OF THE CONTRACTOR AND MUST BE REMOVED FROM THE SITE.
6. QUANTITIES ARE APPROXIMATE AND PROVIDED ONLY FOR REFERENCE. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING ALL FINAL QUANTITIES AS REQUIRED TO COMPLETE THE PROJECT AS PER THE PLANS AND SPECIFICATIONS.
7. CONTRACTOR SHALL PROTECT EXISTING TREES NOT SHOWN FOR REMOVAL.
8. CONTRACTOR WILL BE RESPONSIBLE FOR ANY UNDERGROUND UTILITY DEMOLITION AND MISCELLANEOUS SAW CUTTING AND TIE-INS AT EXISTING PAVING AND UTILITIES.
9. IF EXISTING PAVEMENT TO REMAIN IS DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE THE CONCRETE AS REQUIRED TO MATCH THE EXISTING AT NO ADDITIONAL COST TO THE OWNER.
10. CONTRACTOR SHALL ENSURE THAT EXISTING VEGETATION IS PRESERVED WHERE ATTAINABLE.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEARING AND GRUBBING WITHIN THE PROJECT LIMITS OF DISTURBANCE SHOWN HEREON.
12. SEE SHEET C5.0 FOR INLET PROTECTION DETAILS FOR PROPOSED STRUCTURES.
13. CONTRACTOR SHALL INSTALL STABILIZED CONSTRUCTION ENTRANCE ON PROPOSED SOUTHERN ENTRANCE IF USED FOR CONSTRUCTION TRAFFIC.

CAUTION
EXISTING UNDERGROUND UTILITIES. CONTRACTOR TO VERIFY EXACT LOCATION PRIOR TO ANY TRENCHING OR EXCAVATION.

No.	REVISIONS	DATE	BY

Kimley»Horn
© 2025 KIMLEY-HORN AND ASSOCIATES, INC.
7965 NORTH HIGH STREET, SUITE 200
COLUMBUS, OH 43235
PHONE: 614-459-0939
WWW.KIMLEY-HORN.COM

SCALE: AS NOTED | DESIGNED BY: KAP | DRAWN BY: KAP | CHECKED BY: CMH

STATE OF OHIO
CHRISTOPHER M. HICE
NO. 10021
REGISTERED LANDSCAPE ARCHITECT

MARY L. COOK
COMMUNITY PLAYSCAPE
381 OLD STAGE RD.
WAYNESVILLE, OHIO 45068

EXISTING CONDITIONS AND DEMOLITION PLAN

ORIGINAL ISSUE: 01/17/2025
KHA PROJECT NO. 190310000
SHEET NUMBER
C2.0

Drawing name: K:\CLB_LA\190310000 – Mary L Cook Library\2 Design\CAD\PlanSheets\DEMOLITION PLAN.dwg C2.0 EXISTING CONDITIONS AND DEMOLITION PLAN Sep 30, 2025, 8:45am by: Keegan.Pauff
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SITE NARRATIVE

PLAN DESIGNER: KIMLEY HORN & ASSOCIATES, INC.
7965 N HIGH ST, STE. 200
COLUMBUS, OH 43235
CONTACT: ANDY SCHALL
PHONE: (614) 212-4007
ANDY.SCHALL@KIMLEY-HORN.COM

PROJECT DESCRIPTION: THE PROJECT IS LOCATED ALONG THE NORTHWEST SIDE OF OLD STAGE ROAD IN WAYNESVILLE, OHIO. THE PROPOSED PROJECT CONSISTS OF THE DEVELOPMENT OF AN OPEN SPACE PARK, PICKLEBALL COURTS, AND BUILDING, ALONG WITH ASSOCIATED UTILITIES.

EXISTING SITE: THE EXISTING SITE IS PREVIOUSLY DEVELOPED WITH AN EXISTING BUILDING AND UTILITIES ON SITE. STORMWATER RUNOFF FLOWS INTO AN EXISTING LOCAL STORM NETWORK WHICH IS IMMEDIATELY TIED INTO A PUBLIC STORM SYSTEM MAINTAINED BY THE CITY OF WAYNESVILLE.

RECEIVING STREAM: LITTLE MIAMI RIVER

ADJACENT AREAS: THE SITE IS BORDERED BY RESIDENTIALLY ZONED PROPERTIES ON ALL SIDES.

SOIL TYPES: MmUC3 – MIAMIAN–URBAN LAND COMPLEX, 6 TO 12 PERCENT SLOPES, SEVERELY ERODED
RvUB – RUSSELL–MIAMIAN–URBAN LAND COMPLEX, 2 TO 6 PERCENT SLOPES
WyUB2 – WYNN–URBAN LAND COMPLEX, 2 TO 6 PERCENT SLOPES, ERODED

EROSION AND SEDIMENT CONTROL MEASURES: PERIMETER SEDIMENT FENCE AND STORM SEWER INLET PROTECTION WILL BE USED TO ASSIST WITH THE MANAGEMENT OF THE CONSTRUCTION SITE STORMWATER RUNOFF.

PERMANENT STABILIZATION: THE SITE WILL BE STABILIZED BY THE USE OF SEEDING OR SODDING IN OVERLOT AREAS.

MAINTENANCE: ALL EROSION CONTROL DEVICES ARE TO BE INSPECTED BY THE CONSTRUCTION SUPERINTENDENT DAILY AND AFTER SIGNIFICANT RAINFALLS. ANY DAMAGED FACILITIES ARE TO BE REPLACED/REPAIRED IMMEDIATELY AS MAY BE NECESSARY.

CONSTRUCTION SEQUENCE: PHASE 1:

1. INSTALL PERIMETER EROSION AND SEDIMENT CONTROL.
2. CONSTRUCT STORM SEWER (SEE PROFILES). INSTALL INLET PROTECTION AND OTHER INLET CONTROL DEVICES AS STORM SEWERS ARE COMPILED.
3. GRADE SITE AS SHOWN PER PLAN
4. CONSTRUCT BUILDING AND SITE IMPROVEMENTS.
5. PERMANENTLY STABILIZE/SEED AND MULCH OR SOD DISTURBED AREAS PER SPECIFICATIONS.
6. REMOVE REMAINING EROSION AND SEDIMENT CONTROL DEVICES.

PHONE: THE SEQUENCE OF CONSTRUCTION SHOWN ABOVE IS A GENERAL OVERVIEW AND IS INTENDED TO CONVEY THE GENERAL CONCEPTS OF THE EROSION CONTROL DESIGN AND SHOULD NOT BE RELIED UPON FOR CONSTRUCTION PURPOSES. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETAILED PHASING AND CONSTRUCTION SEQUENCING NECESSARY TO CONSTRUCT THE PROPOSED IMPROVEMENTS INCLUDED IN THESE PLANS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING IMMEDIATELY, PRIOR TO AND/OR DURING CONSTRUCTION IF ANY ADDITIONAL INFORMATION ON THE CONSTRUCTION SEQUENCING IS NECESSARY. CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLYING WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION AND ALL OTHER APPLICABLE LAWS.

SCHEDULE: THE CONTRACTOR SHALL PROVIDE A SCHEDULE OF OPERATIONS TO THE OWNER. SEDIMENTATION AND EROSION CONTROL FEATURES SHALL BE PLACED IN ACCORDANCE WITH THIS SCHEDULE.

DISTURBED AREA: IMPERVIOUS: 2,849 SF
PERVIOUS: 76,970 SF
TOTAL: 79,459 SF

PROHIBITED CONSTRUCTION ACTIVITIES

THE CONTRACTOR SHALL NOT USE CONSTRUCTION PROCEEDINGS, ACTIVITIES OR OPERATIONS THAT MAY UNNECESSARILY IMPACT THE NATURAL ENVIRONMENT OR THE PUBLIC HEALTH AND SAFETY, PROHIBITED CONSTRUCTION PROCEEDINGS, ACTIVITIES, OR OPERATIONS INCLUDE BUT NOT LIMITED TO:

1. DISPOSING OF EXCESS OR UNSUITABLE EXCAVATED MATERIAL IN WETLANDS OR FLOODPLAIN, EVEN WITH THE PERMISSION OF THE PROPERTY OWNER.
2. INDISCRIMINATE, ARBITRARY, OR CAPRICIOUS OPERATION OF EQUIPMENT IN ANY STREAM CORRIDORS, ANY WETLANDS, ANY SURFACE WATERS, OR OUTSIDE THE EASEMENT LIMITS
3. PUMPING OF SEDIMENT-LADEN WATER FROM TRENCHES OR OTHER EXCAVATIONS INTO ANY SURFACE WATERS, ANY STREAM CORRIDORS, ANY WETLANDS OR STORM DRAINS.
4. DISCHARGING POLLUTANTS SUCH AS CHEMICAL, FUEL, LUBRICANTS, BITUMINOUS MATERIALS, RAW SEWERAGE, AND OTHER HARMFUL WASTE INTO OR ALONGSIDE OF RIVERS, STREAMS IMPOUNDMENTS OR INTO NATURAL OR MAN-MADE CHANNELS LEADING THERETO.
5. PERMANENT OR UNSPECIFIED ALTERATIONS OF THE CONSTRUCTED AREA.
6. DAMAGING VEGETATION OUTSIDE OF THE CONSTRUCTION AREA.
7. DISPOSAL OR TREES, BRUSH AND OTHER DEBRIS IN ANY STREAM CORRIDORS, ANY WETLANDS, ANY SUBSURFACE WATERS, OR AT UNSPECIFIED LOCATIONS.
8. OPEN BURNING OF PROJECT DEBRIS WITHOUT A PERMIT.
9. STORING CONSTRUCTION EQUIPMENT AND VEHICLES AND/OR STOCKPILING CONSTRUCTION MATERIALS ON PROPERTY, PUBLIC OR PRIVATE, NOT PREVIOUSLY SPECIFIED BY THE CITY ENGINEER FOR SAID PURPOSE.

EROSION AND SEDIMENT CONTROL NOTES

ALL EROSION AND SEDIMENT CONTROL PRACTICES ARE SUBJECT TO FIELD MODIFICATION AT THE DISCRETION OF THE CITY OF COLUMBUS AND/OR THE OHIO EPA.

THIS PLAN MUST BE POSTED ON–SITE. A COPY OF THE SWPPP PLAN AND THE APPROVED EPA STORMWATER PERMIT (WITH THE SITE–SPECIFIC NOI NUMBER) SHALL BE KEPT ON–SITE AT ALL TIMES.

DIRECT DISCHARGE OF OF SEDIMENT LADEN WATER TO THE CITY'S SEWER SYSTEM OR A RECEIVING STREAM IS A VIOLATION OF OHIO EPA AND CITY OF COLUMBUS REGULATIONS. THE CONTRACTOR WILL BE HELD LIABLE FOR THE VIOLATION AND SUBSEQUENT FINES.

STREET CLEANING (ON AN AS–NEEDED BASIS) IS REQUIRED THROUGH THE DURATION OF THIS CONSTRUCTION PROJECT. THIS INCLUDES SWEEPING, POWER CLEANING AND (IF NECESSARY) MANUAL REMOVAL OF DIRT OR MUD IN THE STREET GUTTERS.

THE LIMITS OF SEEDING AND MULCHING ARE AS SHOWN WITHIN THE PLAN AS INDICATED BY THE LIMITS OF DISTURBANCE. ALL AREAS NOT DESIGNATED TO BE SEEDED SHALL REMAIN UNDER NATURAL GROUND COVER. THOSE AREAS DISTURBED OUTSIDE THE SEEDING LIMITS SHALL BE SEEDED AND MULCHED AT THE CONTRACTOR'S EXPENSE.

TEMPORARY SEEDING: ANY AREA WHICH WILL BE LEFT DORMANT (UNDISTURBED) FOR MORE THAN 14 DAYS SHALL BE SEEDED WITHIN 7 DAYS OF TERMINATED WORK. DISTURBED AREAS WITHIN 50 FEET OF A STREAM, FIRST ORDER OR LARGER, SHALL BE STABILIZED WITHIN 2 DAYS OF INACTIVITY. TEMPORARY SEEDING CONSISTS OF SEEDBED PREPARATION AND APPLICATION OF SEED, FERTILIZER, AND WATER. SOIL TEST IS RECOMMENDED TO DETERMINE PROPER APPLICATION RATE OF FERTILIZER AND IF LIME IS NECESSARY.

ANY EXISTING STORM INLETS IMPACTED BY THE NEW CONSTRUCTION ACTIVITY WILL NEED THE APPROPRIATE INLET PROTECTION FOR SEDIMENT CONTROL.

UPPER BANK ABOVE NORMAL WATER ELEVATION SHOULD BE STABILIZED QUICKLY WITH STRAW BLANKETS, JUTTE MATTING OR SIMILAR GEO–TEXTILE.

MARCH 1 TO AUGUST 15

SEED:	OATS	2	LBS./1,000 SQ. FT.
FERTILIZER:	(12: 12: 12)	25	LBS./1,000 SQ. FT.
MULCH:	(STRAW OR HAY)	2	TONS /ACRE

AUGUST 15 TO NOVEMBER 1

SEED:	ANNUAL RYE	2	LBS./1,000 SQ. FT.
FERTILIZER:	(12:12:12)	25	LBS./1,000 SQ. FT.
MULCH:	(STRAW OR HAY)	2	TONS/ACRE

NOVEMBER 1 TO MARCH 1

MULCH (ONLY): (STRAW OR HAY) 2 TONS/ACRE

PERMANENT SEEDING: ANY AREA THAT IS AT FINAL GRADE SHALL BE SEEDED WITHIN 7 DAYS OF TERMINATED WORK. PERMANENT SEEDING CONSISTS OF SEEDBED PREPARATION AND APPLICATION OF SEED, FERTILIZER, AND WATER. SOIL TEST IS RECOMMENDED TO DETERMINE PROPER APPLICATION RATE OF FERTILIZER AND IF LIME IS NECESSARY. IDEAL CONDITIONS FOR PERMANENT SEEDING IS MARCH 1 – MAY AND AUGUST 1 – SEPTEMBER 30.

RATES OF APPLICATION OF ITEM 659:

SEED:	4 LBS/1000 SQ. FT.
FERTILIZER: (12:12:12)	20 LBS/1000 SQ. FT.
MULCH: STRAW (HAY)	2 TONS/ACRE (3 TONS/ACRE)

WASTE DISPOSAL

ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER RENTED FROM A LICENSED SOLID WASTE MANAGEMENT COMPANY. THE DUMPSTER WILL MEET ALL LOCAL, CITY AND STATE SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED A MINIMUM OF TWICE PER WEEK OR MORE OFTEN IF NECESSARY, AND THE TRASH WILL BE HAULED OFF–SITE. NO CONSTRUCTION WASTE MATERIALS WILL BE BURIED ONSITE. ALL PERSONNEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL. NOTICES STATING THESE PRACTICES WILL BE POSTED IN THE OFFICE TRAILER. THE INDIVIDUAL WHO MANAGES THE DAY–TO–DAY SITE OPERATIONS WILL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED. ALL CONSTRUCTION AND DEMOLITION DEBRIS (C&DD) WASTE WILL BE DISPOSED OF IN AN OHIO EPA APPROVED C&DD LANDFILL AS REQUIRED BY ORC 3714

HAZARDOUS WASTE

ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES. THE INDIVIDUAL WHO MANAGES DAY–TO–DAY SITE OPERATIONS WILL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED.

SANITARY WASTE

ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF THREE TIMES PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR, AS REQUIRED BY LOCAL REGULATION.

OFF–SITE VEHICLE TRACKING

OFF–SITE TRACKING OF SEDIMENTS SHALL BE MINIMIZED. A STABILIZED CONSTRUCTION ENTRANCE WILL BE PROVIDED TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS. ALL PAVED STREETS ADJACENT TO THE SITE WILL BE SWEPT DAILY TO REMOVE ANY EXCESS MUD, DIRT OR ROCK TRACKED FROM THE SITE. DUMP TRUCKS HAULING MATERIAL FROM THE CONSTRUCTION SITE WILL BE COVERED WITH A TARPAULIN.

DEWATERING ACTIVITIES

THERE SHALL BE NO TURBID DISCHARGES TO SURFACE WATERS, RESULTING FROM DEWATERING ACTIVITIES. SEDIMENT–LADEN WATER MUST PASS THROUGH A SETTLING POND, FILTER BAG, OR OTHER COMPARABLE PRACTICE, PRIOR TO DISCHARGE.

PROCESS WASTEWATER

ALL PROCESS WASTEWATER (EQUIPMENT WASHING, LEACHATE FROM ON–SITE WASTE DISPOSAL, ETC.) SHALL BE COLLECTED AND DISPOSED OF AT A PUBLICLY OWNED TREATMENT WORKS.

TIMING OF CONTROLS/MEASURES

AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES, CONSTRUCTION ENTRANCE(S) AND SILT FENCE WILL BE CONSTRUCTED PRIOR TO CLEARING OR GRADING OF ANY OTHER PORTIONS OF THE SITE. SEDIMENT CONTROL DEVICES SHALL BE IMPLEMENTED FOR ALL AREAS REMAINING DISTURBED LONGER THAN 14 DAYS AND/OR WITHIN 7 DAYS OF ANY GRUBBING ACTIVITIES. AREAS WHERE CONSTRUCTION ACTIVITY TEMPORARILY CEASES FOR MORE THAN 21 DAYS WILL BE STABILIZED WITH A TEMPORARY SEED AND MULCH WITHIN 2 DAYS OF THE LAST DISTURBANCE IF THE AREA IS WITHIN 50 FEET OF A STREAM, AND WITHIN 7 DAYS OF THE LAST DISTURBANCE IF THE AREA IS MORE THAN 50 FEET AWAY FROM A STREAM. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA, THAT AREA WILL BE STABILIZED WITH PERMANENT SEED AND MULCH. AFTER THE ENTIRE SITE IS STABILIZED, THE ACCUMULATED SEDIMENT WILL BE REMOVED FROM THE BASIN AND THE TEMPORARY RISER AND SKIMMER WILL BE REMOVED FROM THE OUTLET STRUCTURE.

MATERIAL MANAGEMENT PRACTICES

THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORMWATER RUNOFF.

GOOD HOUSEKEEPING: THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ONSITE DURING THE CONSTRUCTION PROJECT.

AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB.

ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.

PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.

SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.

WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.

MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.

THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.

HAZARDOUS PRODUCTS: THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS.

PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.

ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION.

IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURERS' OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

PRODUCT SPECIFIC PRACTICES

THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ONSITE:

PETROLEUM PRODUCTS – ALL ONSITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FUEL STORAGE TANKS SHALL BE LOCATED AWAY FROM SURFACE WATERS AND STORM SEWER SYSTEM INLETS. FUEL TANKS SHALL BE STORED IN A DIKED AREA CAPABLE OF HOLDING 150% OF THE TANK CAPACITY.

FERTILIZERS – FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORMWATER. STORAGE WILL BE IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

PAINTS – ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURERS' INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

CONCRETE TRUCKS – CONCRETE TRUCKS WILL NOT BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON THE SITE.

SPILL CONTROL PRACTICES

IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

1. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY. MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
2. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ONSITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
3. THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
4. SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE. SPILLS OF 25 OR MORE GALLONS OF PETROLEUM WASTE MUST BE REPORTED TO OHIO EPA (1–800–282–9378), THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE WITHIN 30 MINUTES OF THE SPILL.
5. SOILS CONTAMINATED BY PETROLEUM OR OTHER CHEMICAL SPILLS MUST BE TREATED/DISPOSED AT AN OHIO EPA APPROVED SOLID WASTE MANAGEMENT FACILITY OR HAZARDOUS WASTE TREATMENT, STORAGE OR DISPOSAL FACILITY (TSDF).
6. THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.
7. THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY–TO–DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. HE WILL DESIGNATE SITE PERSONNEL WHO WILL RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ONSITE.

DUST CONTROL

DUST CONTROL INVOLVES PREVENTING OR REDUCING DUST FROM EXPOSED SOILS OR OTHER SOURCES DURING LAND DISTURBING, DEMOLITION AND CONSTRUCTION ACTIVITIES TO REDUCE THE PRESENCE OF AIRBORNE SUBSTANCES WHICH MAY PRESENT HEALTH HAZARDS, TRAFFIC SAFETY PROBLEMS OR HARM ANIMAL OR PLANT LIFE.

THE FOLLOWING SPECIFICATIONS FOR DUST CONTROL SHALL BE FOLLOWED ONSITE:

1. VEGETATIVE COVER AND/MULCH – APPLY TEMPORARY OR PERMANENT SEEDING AND MULCH TO AREAS THAT WILL REMAIN IDLE FOR OVER 14 DAYS. SAVING EXISTING TREES AND LARGE SHRUBS WILL ALSO REDUCE SOIL AND AIR MOVEMENT ACROSS DISTURBED AREAS. SEE TEMPORARY SEEDING; PERMANENT SEEDING; MULCHING PRACTICES; AND TREE AND NATURAL AREA PROTECTION PRACTICES.
2. WATERING – SPRAY SITE WITH WATER UNTIL THE SURFACE IS WET BEFORE AND DURING GRADING AND REPEAT AS NEEDED, ESPECIALLY ON HAUL ROADS AND OTHER HEAVY TRAFFIC ROUTES. WATERING SHALL BE DONE AT A RATE THAT PREVENTS DUST BUT DOES NOT CAUSE SOIL EROSION. WETTING AGENTS SHALL BE UTILIZED ACCORDING TO MANUFACTURERS INSTRUCTIONS.
3. SPRAY–ON ADHESIVES – APPLY ADHESIVE ACCORDING TO THE FOLLOWING TABLE OR MANUFACTURERS' INSTRUCTIONS.

SOIL STABILIZATION

STABILIZATION OF DISTURBED AREAS SHALL, AT A MINIMUM, BE INITIATED IN ACCORDANCE WITH THE TIME FRAMES SPECIFIED IN THE FOLLOWING TABLES:

TABLE 1: PERMANENT STABILIZATION

AREA REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY AREAS THAT WILL LIE DORMANT FOR ONE YEAR OR MORE	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE
ANY AREAS WITHIN 50 FEET OF A SURFACE WATER OF THE STATE AND AT FINAL GRADE	WITHIN TWO DAYS OF REACHING FINAL GRADE
ANY OTHER AREAS AT FINAL GRADE	WITHIN SEVEN DAYS OF REACHING FINAL GRADE WITHIN THAT AREA

TABLE 2: TEMPORARY STABILIZATION

AREA REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
ANY DISTURBED AREAS WITHIN 50 FEET OF A SURFACE WATER OF THE STATE AND NOT AT FINAL GRADE	WITHIN TWO DAYS OF THE MOST RECENT DISTURBANCE IF THE AREA WILL REMAIN IDLE FOR MORE THAN 14 DAYS
FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED AREAS THAT WILL BE DORMANT FOR MORE THAN 14 DAYS BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 FEET OF A SURFACE WATER OF THE STATE	WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE WITHIN THE AREA. FOR RESIDENTIAL SUBDIVISIONS, DISTURBED AREAS MUST BE STABILIZED AT LEAST SEVEN DAYS PRIOR TO TRANSFER OF PERMIT COVERAGE FOR THE INDIVIDUAL LOT(S)
DISTURBED AREAS THAT WILL BE IDLE OVER WINTER	PRIOR TO THE ONSET OF WINTER WEATHER

WHERE VEGETATIVE STABILIZATION TECHNIQUES MAY CAUSE STRUCTURAL INSTABILITY OR ARE OTHERWISE UNOBTAINABLE, ALTERNATIVE STABILIZATION TECHNIQUES MUST BE EMPLOYED. PERMANENT

Drawing name: K:\CLB_LA\190310000 – Mary L Cook Library\2 Design\CAD\PlanSheets\EROSION CONTROL NOTES.dwg C2.1 EROSION CONTROL NOTES Sep 30, 2025 7:17am by: Keegan Pauff
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ANDREW JAMES SCHALL
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09/29/2025

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EROSION CONTROL NOTES

ORIGINAL ISSUE: 01/17/2025
KHA PROJECT NO. 190310000
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Appendix P – Site Drainage Plan



FLOODPLAIN

ALL OF THE SITE IS IN THE FLOOD HAZARD X (OUTSIDE THE 100-YEAR FLOODPLAIN) AS SHOWN ON FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP, MAP NUMBER 39165C0062E, EFFECTIVE DATE, 12/17/2010.

GRADING NOTES

1. EXISTING TOPOGRAPHIC INFORMATION IS FROM CESO SURVEY DATED 02-16-2024
2. CONTRACTOR TO VERIFY ALL EXISTING TOPOGRAPHY AND STRUCTURES ON THE SITE AND IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO STARTING WORK.
3. ALL ELEVATIONS SHOWN DEPICT FINISHED GRADE UNLESS OTHERWISE NOTED. GENERAL CONTRACTOR TO COORDINATE WITH EXCAVATION, LANDSCAPE AND PAVING SUBCONTRACTORS REGARDING TOPSOIL THICKNESS FOR LANDSCAPE AREAS AND PAVEMENT SECTION THICKNESS FOR PAVED AREAS TO PROPERLY ENSURE ADEQUATE CUT TO ESTABLISH SUBGRADE ELEVATIONS.
4. NO EARTHEN SLOPE SHALL BE GREATER THAN 4:1, UNLESS OTHERWISE NOTED.
5. MAXIMUM RUNNING SLOPE SHALL NOT EXCEED 5% AND CROSS SLOPE SHALL NOT EXCEED 2% ON ALL SIDEWALKS AND ACCESSIBLE ROUTES.
6. MATCH EXISTING ELEVATIONS AT THE LIMITS OF DISTRUBANCE.
7. THE CONTRACTOR SHALL EMPLOY A LICENSED PUBLIC SURVEYOR TO SET ALL GRADES, SPOT ELEVATIONS, AND FLOWLINES NEEDED FOR PROJECT.
8. SHOULD ANY MODIFICATIONS BE REQUIRED TO THE PROPOSED SPOT GRADES DUE TO CONDITIONS ENCOUNTERED IN THE FIELD, CONTACT THE OWNER AND CIVIL ENGINEER IMMEDIATELY AND PRIOR TO MAKING ANY CHANGES.
9. NO DEPRESSIONS, "BIRD BATHS", ETC. SHALL BE PERMITTED IN THE PAVING. SHOULD ANY MODIFICATIONS BE REQUIRED TO THE PROPOSED GRADES TO ACHIEVE POSITIVE DRAINAGE, CONTACT THE OWNER AND LANDSCAPE ARCHITECT IMMEDIATELY.
10. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UTILITIES. SHOULD ANY UTILITIES BE DAMAGED BY THE CONTRACTOR, THE CONTRACTOR SHALL PROMPTLY REPAIR ANY SUCH DAMAGE AT NO ADDITIONAL EXPENSE TO THE OWNER AND THE VARIOUS UTILITY COMPANIES.
11. CONTRACTOR TO VERIFY EXISTING ELEVATION PRIOR TO CONSTRUCTION AND NOTIFY OWNER AND CIVIL ENGINEER OF ANY DISCREPANCIES.
12. ALL PLAY AREAS TO HAVE MAXIMUM 2% CROSS SLOPE IN ALL DIRECTIONS.

LEGEND

- EXISTING STORM SEWER LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- XXX.XX SPOT ELEVATION
- TREE PROTECTION FENCE (SEE DETAIL 7, C3.1)
- CONSTRUCTION FENCE (SEE DETAIL 2, C3.1)
- LIMITS OF DISTURBANCE
- INLET PROTECTION (SEE DETAIL 6, C3.3)
- SILT FENCE (SEE DETAIL 5, C3.2)
- OVERLAND FLOOD ROUTING
- ROCK CHECK DAM (SEE DETAIL 8, C3.1)

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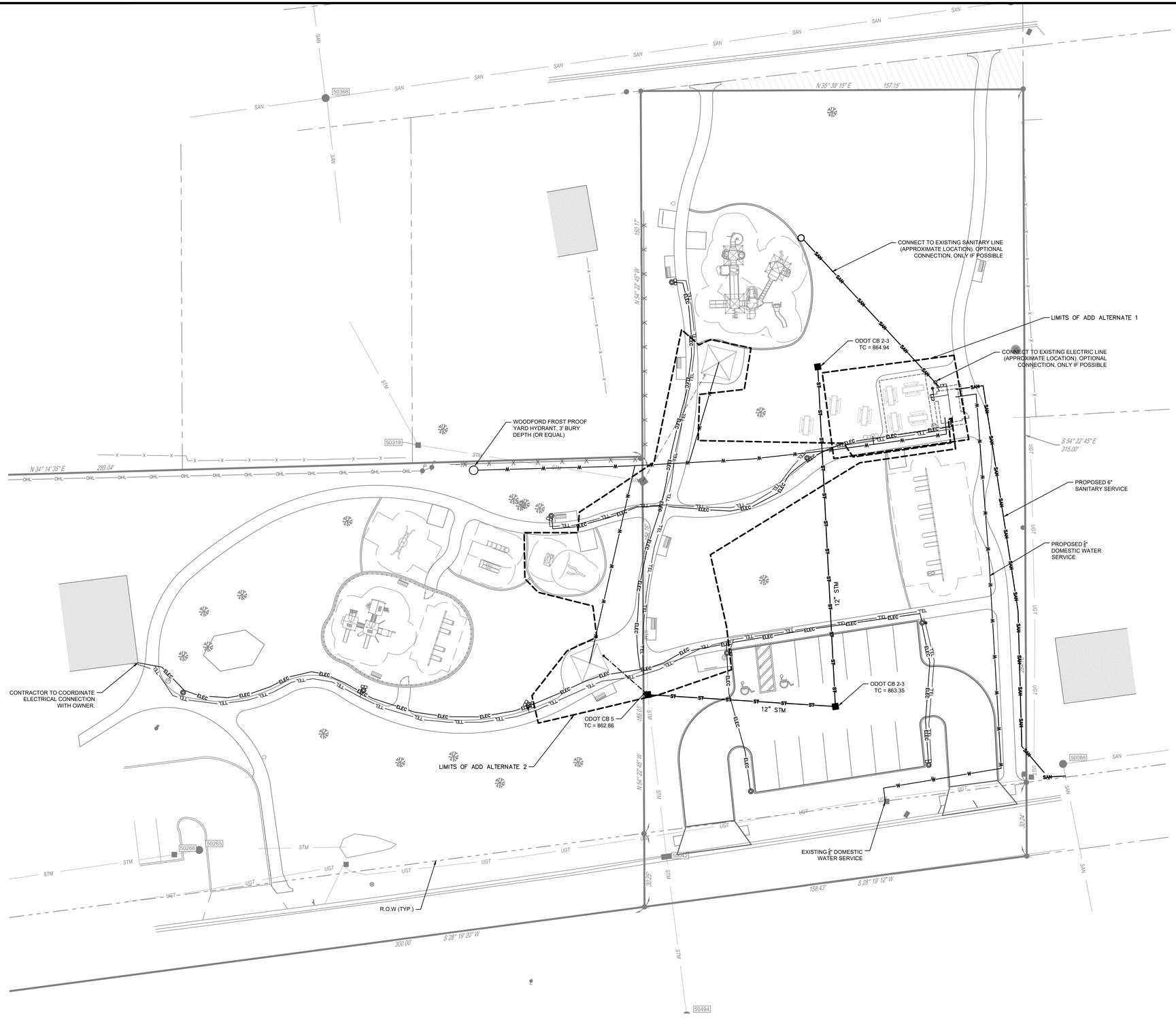
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09/29/2025

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GRADING PLAN

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GRAPHIC SCALE IN FEET
0 10 20 40

UTILITY LEGEND

ELE ELE ELE	PROPOSED UNDERGROUND ELECTRIC LINE
ST ST ST	PROPOSED STORM SEWER LINE
SAN SAN SAN	PROPOSED SANITARY SEWER LINE
W W W	PROPOSED WATER LINE
TEL	PROPOSED CAT6 WIRE AND CONDUIT, PROVIDED BY CONTRACTOR
	PROPOSED 4" DRAIN LINE
	PROPOSED 6" YARD DRAIN W/ METAL GRATE
	PROPOSED PEDESTRIAN LAMP AND POST (DETAIL 5 AND 6, SF 1.2)*
	WIFI ACCESS POINT (BY OTHERS)
	REOLINK CAMERAS (BY OTHERS)

* PROPOSED LIGHT TO BE STERNBERG, CARSON CITY SERIES LIGHT (1843), POLE TOP MOUNTED ON MORRISTOWN SERIES POLE (6612' FP5) WITH TOP AND BOTTOM HAND HOLES. (OR APPROVED EQUAL)

LEGEND

AREA AFFECTED BY ADD ALTERNATES (SEE C8.0)

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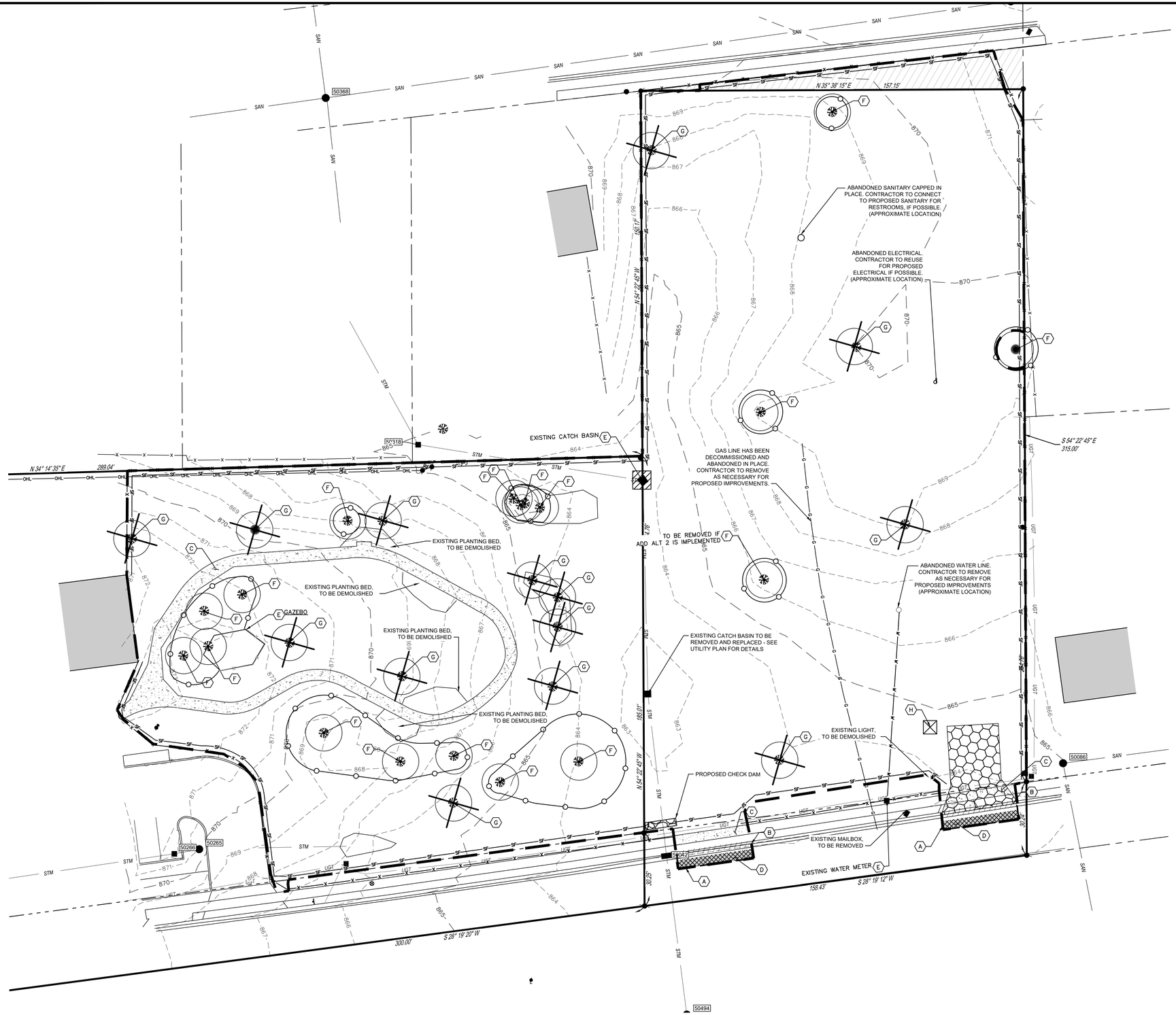
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UTILITY PLAN

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GRAPHIC SCALE IN FEET
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DEMOLITION LEGEND

- A — SAWCUT LINE
- B — CURB REMOVAL
- C — CONCRETE REMOVAL
- D — ROADWAY ASPHALT REMOVAL
- E — ITEM TO REMAIN, PROTECT THROUGHOUT DURATION OF CONSTRUCTION
- F — EXISTING TREE TO REMAIN
- G — EXISTING TREE TO BE REMOVED
- H — CONCRETE WASHOUT, COORDINATE FINAL LOCATION WITH OWNER (SEE DETAIL 6, C3.1)
- CONSTRUCTION ENTRANCE, COORDINATE FINAL LOCATION WITH OWNER (SEE DETAIL 5, C3.1)
- ROCK CHECK DAM (SEE DETAIL 8, C3.1)
- LIMITS OF DISTURBANCE (1.83 AC)
- XXX — EXISTING CONTOURS
- TREE PROTECTION FENCE (SEE DETAIL 7, C3.1)
- CONSTRUCTION FENCE (SEE DETAIL 2, C3.1)
- SILT FENCE (SEE DETAIL 5, C3.2)
- INLET PROTECTION (SEE DETAIL 6, C3.3)

NOTES

1. CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO THE INITIATION OF DEMOLITION.
2. CONTRACTOR TO ENSURE SITE IS FREE OF HAZARDS AND SECURE DURING CONSTRUCTION AND AFTER HOURS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL EXISTING UTILITIES WITH THE VILLAGE, AND THE VARIOUS UTILITY COMPANIES. ANY UTILITIES WHICH ARE DAMAGED BY THE CONTRACTOR SHALL BE PROMPTLY REPAIRED AT NO ADDITIONAL EXPENSE TO THE OWNER. SHOULD ANY MODIFICATIONS BE REQUIRED, CONTACT THE OWNER IMMEDIATELY, PRIOR TO MAKING THE CHANGE.
4. THE CONTRACTOR SHALL COORDINATE THE LIMITS OF REMOVAL WORK WITH THE OWNER.
5. ALL REMOVAL ITEM DEBRIS (UNLESS OTHERWISE NOTED) BECOMES THE PROPERTY OF THE CONTRACTOR AND MUST BE REMOVED FROM THE SITE.
6. QUANTITIES ARE APPROXIMATE AND PROVIDED ONLY FOR REFERENCE. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING ALL FINAL QUANTITIES AS REQUIRED TO COMPLETE THE PROJECT AS PER THE PLANS AND SPECIFICATIONS.
7. CONTRACTOR SHALL PROTECT EXISTING TREES NOT SHOWN FOR REMOVAL.
8. CONTRACTOR WILL BE RESPONSIBLE FOR ANY UNDERGROUND UTILITY DEMOLITION AND MISCELLANEOUS SAW CUTTING AND TIE-INS AT EXISTING PAVING AND UTILITIES.
9. IF EXISTING PAVEMENT TO REMAIN IS DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE THE CONCRETE AS REQUIRED TO MATCH THE EXISTING AT NO ADDITIONAL COST TO THE OWNER.
10. CONTRACTOR SHALL ENSURE THAT EXISTING VEGETATION IS PRESERVED WHERE ATTAINABLE.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEARING AND GRUBBING WITHIN THE PROJECT LIMITS OF DISTURBANCE SHOWN HEREON.
12. SEE SHEET C5.0 FOR INLET PROTECTION DETAILS FOR PROPOSED STRUCTURES.
13. CONTRACTOR SHALL INSTALL STABILIZED CONSTRUCTION ENTRANCE ON PROPOSED SOUTHERN ENTRANCE IF USED FOR CONSTRUCTION TRAFFIC.

CAUTION
EXISTING UNDERGROUND UTILITIES. CONTRACTOR TO VERIFY EXACT LOCATION PRIOR TO ANY TRENCHING OR EXCAVATION.

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EXISTING CONDITIONS AND DEMOLITION PLAN

ORIGINAL ISSUE: 01/17/2025
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Drawing name: K:\CLB_LA\190310000 – Mary L Cook Library\2 Design\CAD\PlanSheets\DEMOLITION PLAN.dwg C2.0 EXISTING CONDITIONS AND DEMOLITION PLAN Sep 30, 2025, 8:45am by: Keegan.Pauff
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COMMUNITY PLAYSCAPE

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Technical Specifications

September 29, 2025

Prepared by:

Kimley»Horn

TECHNICAL SPECIFICATIONS **TABLE OF CONTENTS**

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BID BOND (DAMAGES FORM)

Bidder Name: **[Full formal name of Bidder]** Address *(principal place of business)*: **[Address of Bidder's principal place of business]**	**Surety** Name: **[Full formal name of Surety]** Address *(principal place of business)*: **[Address of Surety's principal place of business]**
Owner Name: **Wayne Local School District Library, dba Mary L. Cook Public Library** Address *(principal place of business)*: **381 Old Stage Road, Waynesville, OH 45068**	**Bid** Project *(name and location)*: **Mary. L Cook Public Library Community Playscape-EJCDC C-520_2018** **381 Old Stage Road, Waynesville, OH 45068** Bid Due Date: **Wednesday, November 5th, 2025, at 12PM**
Bond Bond Amount: **[Amount]** Date of Bond: **[Date]**	

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

Bidder	Surety
(Full formal name of Bidder)	*(Full formal name of Surety) (corporate seal)*
By: _____ *(Signature)*	By: _____ *(Signature) (Attach Power of Attorney)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title: _____	Title: _____
Attest: _____ *(Signature)*	Attest: _____ *(Signature)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title: _____	Title: _____

Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder any difference between the total amount of Bidder's Bid and the total amount of the Bid of the next lowest, responsible Bidder that submitted a responsive Bid, as determined by Owner, for the work required by the Contract Documents, provided that:

    1.1. If there is no such next Bidder, and Owner does not abandon the Project, then Bidder and Surety shall pay to Owner the bond amount set forth on the face of this Bond, and

    1.2. In no event will Bidder's and Surety's obligation hereunder exceed the bond amount set forth on the face of this Bond.

    1.3. Recovery under the terms of this Bond will be Owner's sole and exclusive remedy upon default of Bidder.

2. Default of Bidder occurs upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

3. This obligation will be null and void if:

    3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or

    3.2. All Bids are rejected by Owner, or

    3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions will not in the aggregate exceed 120 days from Bid due date without Surety's written consent.

6. No suit or action will be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety, and in no case later than one year after the Bid due date.

7. Any suit or action under this Bond must be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notices required hereunder must be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond will be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute governs and the remainder of this Bond that is not in conflict therewith continues in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

SECTION 01 11 00 SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections apply to this Section.

1.2 SUMMARY

A. The Work specified in this contract consists of furnishing all management, supervision, labor, materials, tools, equipment, services, testing, and incidentals for the construction of the Work indicated in the Contract Documents including lump sum items and unit price items.

B. Reference General Conditions as listed:
1. Article 3 “Contract Sum”.
2. Article 8 “Contractor”.
3. Article 13 “Protection of Persons and Property”.

1.3 SITE CONDITIONS

A. The Contractor acknowledges satisfaction as to the nature and location of the Work, all of the general and local conditions, particularly those bearing upon availability of transportation, access to the site, disposal, handling and storage of materials, availability of labor, water, power, roads, and uncertainties of weather, or similar physical conditions at the site, the conformation and conditions of the ground, the character of equipment and facilities needed preliminary to and during work, and all other matters that can in any way affect the work or the cost thereof under this contract.

B. The Contractor further acknowledges, by submission of a bid and on each change in work proposal, satisfaction as to the character, quality and quantity of all surface and subsurface materials and all features on top of the surface or at worksites that would be encountered from his inspection of the site and from reviewing available records of exploratory work furnished by the District. Failure by the Contractor to become acquainted with the physical conditions of the sites and all the available information will not relieve the Contractor from responsibility for properly estimating the difficulty or cost of performing the Work.

C. The Contractor warrants that as a result of examination and investigation of all the aforesaid data and the site, that the Contractor can perform the Work in a good and workmanlike manner and to the satisfaction of the District. The District assumes no responsibility for any representations made by any of its officers or agents during or prior to the execution of this contract unless such representation is expressly stated in the contract.

1.4 DESCRIPTION OF WORK

B. The following work items are included in these specifications: Site Preparation, Demolition, Grading and Drainage, Site Furnishings, Sprayground Equipment, Mechanical System, Playground Equipment, Tree Protection, Landscape, and Concrete Work for the Community Playscape as listed in the Table of Contents of these specifications and as shown per the

Contract Drawings. The materials and installation methods specified herein are to be considered standard for all work ordered by and performed for the Mary L. Cook Public Library in the construction of new facilities.

PART 2 - PRODUCTS (Not used)

PART 3 - EXECUTION

3.1 CONTRACTOR'S DUTIES

A. Except as otherwise specified, furnish the following to the full extent required by the contract:
   1. Labor, superintendence, supervision and products.
   2. Construction equipment, tools, machinery and materials.
   3. Utilities required for construction and related activities.
   4. Other facilities and services necessary to properly execute and complete the Work, including security for worksite, testing and storage and protection of all materials awaiting incorporation into the Work, providing a safe working environment for workers, District representatives, and the public in accordance with all local, state and federal requirements.

B. Prosecute the Work as specified and in a timely manner. Submit a schedule of Work that will be performed at times other than during the eight-hour working day of Monday through Friday, daylight hours. Submit this schedule five working days prior to the beginning of Work to the Project Manager for review and acceptance. Approval to work at night may be obtained after Contractor presents a written program outlining special precautions to be taken to control the extraordinary hazards presented by night work. That program shall include, but not limited to, supplementary lighting of work areas, availability of medical facilities, security precautions, and noise limitations.

3.2 COORDINATION

A. Coordinate prosecution of the Work with those public utilities, governmental bodies, private utilities and other contractors performing work on and adjacent to the worksites. Eliminate or minimize delays in the Work and conflicts with those utilities, bodies and contractors. Schedule governmental, private utility and public utility work that relies upon survey points, lines and grades established by the Contractor to occur immediately after those points, lines and grades have been established. Confirm coordination measures for each individual case with the District in writing.

B. In the coordination effort of work by others, the Contractor shall obtain and refer to equipment locations and other layouts, as available, to avoid interface problems.

C. The District reserves the right to permit access to the site of the Work for the performance of work by other contractors and persons at such times that the District deems proper. The exercise of such reserved right shall in no way or to any extent relieve the Contractor from liability for loss and damage to the work due to or resulting from its operations or from responsibility for complete execution of the Contract. The Contractor shall cooperate with other contractors and persons in all matters requiring common effort.

3.3 CONTRACTOR USE OF WORKSITE

A. Confine worksite operations to areas permitted by law, ordinances, permits and the contract.

B. Consider the safety of the Work and that of the people and property on and adjacent to the worksite when determining amount, location, movement and use of materials and equipment on worksite.

C. Do not load worksite with equipment and products that would interfere with the Work. Only equipment, tools or materials required for this Work may be stored at the worksite.

D. Protect products, equipment and materials stored on worksite.

E. Relocate stored products, equipment and materials which interfere with operations of District, government bodies, public and private utilities, and other contractors.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this section including any and all necessary relocations requested by the District. The cost of the work described in this section shall be included in the Contract price.

END OF SECTION 01 11 00

SECTION 01 25 00 SUBSTITUTIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes submittal requirements for the approval of a different material, equipment, or process than is described in the Contract Documents.
   1. If the substitution changes the scope of work, contract cost or contract time, a Change Order is required.
   2. Contract Record Drawings and specifications must include all approved substitutions even if a Change Order is not issued.

B. Reference General Conditions as listed:
   1. Article 8 “Contractor”.
   2. Article 10 “Changes in Work”.

1.3 QUALITY CONTROL

A. The substitution must provide the same quality as what it is replacing. The level of quality is defined by:
   1. Maintenance and operating cost.
   2. Reliability.
   3. Durability.
   4. Life expectancy.
   5. Ease of cleaning.
   6. Ability to be upgraded as needed.
   7. Ease of interacting with other systems or components.
   8. Ability to be repaired.
   9. Availability of replacement parts.
   10. Established history of use in similar environments.
   11. Performance equal or superior to that which it is replacing.

1.4 SUBMITTAL

A. Refer to Division 01 Sections “Submittals” and “Shop and Working Contract Drawings, Product Data, and Samples” for submittal procedures.

B. A complete Request for Substitution using the form included in Division 01 Section “Standard Forms” must be made at least sixty (60) days prior to when an order needs to be placed or a method needs to be changed.

C. The submittal shall contain, as appropriate, detailed product data sheets for the specified items and the substitution. Samples and shop Contract Drawings shall also be submitted of the

substitution as applicable. The submittal shall contain all the data required to be submitted for acceptance of the originally specified item or process.

1.5 INFORMATION

A. Provide the following information as applicable with the Request for Substitution on the item or process that is being requested to be substituted:
   1. A complete description of the item or process.
   2. Utility connections including electrical, plumbing, HVAC, fire protection and controls.
   3. The physical dimensions and clearances.
   4. A parts list with prices.
   5. Samples of color and texture.
   6. Detailed cost comparisons of the substitution and the contract specified item or process.
   7. Manufacturer warranties.
   8. Energy consumption over a one-year period.
   9. What local organization is certified to maintain the item.
   10. Performance characteristics and production rates.
   11. A list of any license fees or royalties that must be paid.
   12. A list of all variations for the item or method specified.
   13. A list of at least three other projects of similar nature to this contract where the products or methods have been in use for at least one year including telephone number and name of the person to contact at these other projects.
   14. An analysis of the effect of the substitution on the schedule and contract cost and on the overall project as it relates to adjoining work.

1.6 SUBSTITUTION REQUEST

A. The formal Request for Substitution will be evaluated by the Project Manager and the Designer of Record based on the following criteria:
   1. Compatibility with the rest of the project.
   2. Reliability, ease of use and maintenance.
   3. Both initial and long-term cost.
   4. Schedule impact.
   5. The willingness of the Contractor to share equally in any cost savings.
   6. The ability of the item or process to meet all applicable governing regulations, rules and laws along with funding agency requirements.
   7. The cost of evaluating the substitution.

B. Based upon the above evaluation the Project Manager will make a final determination of what is in the best interest of the District and either approve, disapprove or approve as noted the requested substitution.

1.7 CONDITIONS

A. As a condition for submitting a Request for Substitution the Contractor waives all rights to claim for extra cost or change in contract time other than those outlined in the request and approved by the Project Manager. The Contractor, by submitting a Request for Substitution, also accepts all liability for cost and scheduling impact on other contractors or the District due to the substitution.

B. Included with the Request for Substitution shall be the following statement:

1. "The substitution being submitted is equal to or superior in all respects to the contract-required item or process. All differences between the substitution and the contract-required item or process are described in this request along with all cost and scheduling data."

C. The statement shall be signed and dated by the Contractor's Superintendent.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 01 25 00

SECTION 01 29 00 MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes Pay Item descriptions for measurement and payment of Work completed.

1.3 DESCRIPTION

A. General:
1. NOTE: The Pay Item descriptions listed herein are hypothetical and will vary with each project. Do not prepare pay estimates based on these descriptions.
2. All measurements and payments will be based on work completed in strict accordance with the Drawings and specifications for the project.
3. The method of measurement and basis of payment described are for the work itemized in the Bid Form and in the sections of the specifications. Items may include work within a single section or in more than one section.
4. See the General Conditions for additional information pertaining to measurement and payment. This section is intended to supplement the General and Special Conditions.

B. Measurement:
1. Unless otherwise specified, all longitudinal measurements will be made horizontally, and computations will be based on the dimensions shown in the Contract Drawings and Details. No measurement will be made by weight tickets.
2. Quantities shall be rounded to the nearest whole number.
3. The Contractor shall, in the presence of the Project Manager, verify all measurements and quantities required for payment by the unit price method.
4. The Contractor shall provide necessary equipment, workers, and survey personnel as required for measurements.

C. Units:
1. Measurement by Volumes: Measurement by cubic dimension using mean length, width and height, or thickness. Longitudinal measurements will be made horizontally.
2. Measurements by Area: Measured by square dimensions using mean length and width or radius, measured horizontally.
3. Linear Measurement: Measured by linear dimension at the item centerline or mean chord.
4. Measured by Lump Sum or Per Each: Item inclusion as specified by the bid item description.

D. Payment:
1. Payment for Work listed as lump sum bid items completed under this contract shall be paid for on a lump sum fixed price basis.
2. Unit bid prices, as quoted in the Bid Schedule, shall constitute full compensation for labor, materials, equipment, rentals, overhead, profit and incidentals to complete all work

for each pay item and for all risk, loss, damage, or expense of whatever nature arising from the nature of the work or prosecution thereof.

3. Work or materials that are essential to the Work, but for which there are no pay items, will not be measured and paid for separately, but shall be included in other items of work.
4. Final payment for Work governed by unit prices shall be made on the basis of the measurements and quantities accepted by the Project Manager multiplied by the unit price for work which is incorporated in or made necessary by the Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

PART 4 - MEASUREMENT AND PAYMENT

Refer to each specification section for Measurement and Payment information relative to the contents of that section.

END OF SECTION 01 29 00

SECTION 01 29 73 SCHEDULE OF VALUES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for preparing and submitting the Schedule of Values as referenced in the General Conditions. The Schedule of Values will be built upon a breakdown of the Work using specification sections and milestones. The Work also includes the preparing and submitting of updated copies of the Schedule of Values if the Schedule of Values is affected by change orders.
   1. A Schedule of Stored Material is a detailed cost breakdown for permanent materials that will be temporarily stored prior to their being installed and for which the Contractor seeks partial payments. The Schedule of Stored Material will be incorporated as a part of the Schedule of Values.
   2. The Contractor shall provide a Schedule of Values for the bid in the format provided by the Project Manager. Any bid received without a Schedule of Values will be considered a no bid submitted. In the event that any additional Work is completed on the project, the Schedule of Values will be used for the basis of Change Orders and the prices will be used to determine the value of the Change Order. The Schedule of Value unit prices shall include all materials, labor, and mark up required to complete the specific line item.
   3. Any contract allowances shall be included in the Schedule of Values. Expenditure of allowances shall be done through the use of the Allowance Authorization form. Use of this form does not increase or decrease the contract value.

A. Reference the General Contract Conditions as listed:
   1. Article 4 “Payment Procedure”.
   2. Article 12 “Payment and Completion”.

B. Related Sections:
   1. Division 01 Section “Submittals”.
   2. Division 01 Section “Shop and Working Drawings, Product Data, and Samples”.
   3. Division 01 Section “Standard Forms”.

1.3 DEFINITIONS

A. Allowance: A monetary amount specified and included in the construction contract for a certain item of work whose details are not yet determined at the time of contracting.

1.4 SUBMITTAL

A. The Schedule of Values shall be submitted in a format approved by the Project Manager.

B. The Schedule of Values shall identify each item of work. Work items in the Schedule of Values shall represent all work and shall be referenced with the Technical Specifications section

numbers, specification subparagraph, specification section title and the bid item number used for the Schedule of Prices and Quantities when applicable. The Schedule of Values shall address the subcontractor, fabricator or supplier furnishing the materials and or labor for each work item.

C. Upon request by the District, the Contractor shall support values given with the data which will substantiate the correctness of the values.

D. The Schedule of Values will be utilized only as a basis for review of the Contractor's application for progress payment on Unit Price Bids. The Schedule of Values will be utilized on a Lump Sum Bid to determine change order costs.

1.5 REVIEW AND RESUBMITTAL

A. If review by the District indicates that changes to the Schedule of Values are required, the Contractor shall revise and resubmit the Schedule of Values.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PREPARING SCHEDULE OF VALUES

A. Breakdown of the items used in the Schedule of Values shall include costs as follows:
   1. Delivered cost of product with applicable taxes paid.
   2. Total installation cost with overhead and profit.
   3. Breakdown costs of each lump sum item with a list of products and major operations for which the Contractor seeks to receive progress payments to recover his costs for that bid Item.
   4. Each unit price item as listed in the bid Schedule of Prices and Quantities shall list products and major operations for which the Contractor seeks to receive progress payments for that bid item.

3.2 PREPARING SCHEDULE OF VALUES OF STORED MATERIAL

A. The Contractor shall submit with the Schedule of Values an indication of whether products will be stored on or off the worksite. The Schedule of Stored Material shall show quantities and types of products that will be stored.

B. Material allowances consist of only the net cost of the product, the cost of delivery and unloading at the storage site, the cost of applicable sales taxes and all discounts.

C. In no case will the cost paid for a permanent material be greater than ninety percent (90%) of the contract price for the work in which they are included.

3.3 PAYMENT FOR STORED MATERIALS

A. Only materials that are described in the specifications and the drawings will be considered permanent materials. Permanent materials are materials that will be left in the work after the contract is completed.

B. Nothing in these specifications shall be interpreted as requiring the District to pay for stored materials. The Project Manager shall decide on a case-by-case basis whether stored materials shall be paid for. No payment will be made for stored materials which have not been submitted and accepted.

C. The Contractor must, at all times, store permanent materials in accordance with manufacturer's recommendations. Any material not properly stored will not be paid for. Amounts will be deducted from payments for any stored permanent material previously paid for and subsequently found to be improperly stored or not present, based upon a physical inventory of stored permanent material.

D. Only the neat line quantity of material needed for the finished product may be paid for.

E. All requests for stored permanent material payment must be accompanied by paid invoices clearly showing the quantity of permanent material, the type of permanent material and discounts or rebates and the net amount paid to the supplier along with a certificate stating that the permanent material is free of any liens or judgments preventing its use by the District.

F. All permanent material stored off site, for which payment is being requested must be insured and stored in bonded, insured warehouses.

G. Any permanent material on which payment is requested must be in such a form that it cannot be used on work other than this contract or stored in a manner acceptable to the Project Manager to ensure that the permanent material cannot be used on work other than this contract.

3.4 ALLOWANCE AUTHORIZATION AND PAYMENT

A. Contractor shall request written approval for expenditure of any contract allowances PRIOR TO performing the Work involved. List work to be performed and estimated cost in the requesting correspondence.

B. Original copies of all invoices and receipts must be submitted with the Allowance Authorization as part of the request for payment.

C. Using the format provided by the District, the Contractor's request for payment of all contract allowances shall be included in the Schedule of Values.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 01 29 73

SECTION 01 31 13 COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for project and construction coordination, supervision, and administration for the Work, including but not necessarily limited to:
   1. Coordination.
   2. Administrative and supervisory personnel.
   3. General installation provisions.
   4. Cleaning and protection.
   5. Utilities and site work.

B. Reference General Conditions as listed:
   1. Article 5 “Insurance”.
   2. Article 8 “Contractor”.

C. Related Sections:
   1. Division 01 Section “Layout of Work and Surveys”.
   2. Division 01 Section “Administration, Procedures, Codes”.
   3. Division 01 Section “Project Meetings”.

1.3 GENERAL COORDINATION

A. General:
   1. The Contractor shall ensure that each entity involved in the performance of the Work shall cooperate in the overall coordination of the Work; promptly, when requested by the Contractor, furnish information concerning the entity’s portion of the Work; and respond promptly and reasonably to the decisions and requests of persons designated with coordination, supervisory, administrative, or similar authority.
   2. The Contractor shall, where necessary, prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.
   3. Prepare similar memoranda for the Owner and separate Contractors where coordination of their work is required.

B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction work. Such administrative activities include, but are not limited to, the following:
   1. Preparation of schedules
   2. Installation and removal of temporary facilities
   3. Delivery and processing of submittals
   4. Progress meetings
   5. Project close-out activities

C. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water and materials. Salvage materials and equipment involved in performance of, but not actually incorporated in, the Work. Refer to other sections for disposition of salvaged materials that are designated as the District's property.

D. Site Utilization: In addition to the site utilization limitations and requirements shown on the Contract Drawings and indicated by the Contract Documents, administer the allocation of available space equitably among entities needing access and space, so as to produce the best overall efficiency in the performance of the Work. Schedule deliveries so as to minimize the space and time requirements for storage of materials and equipment on the site; but do not unduly risk delays in the Work.

E. Coordination Meetings: Include in scheduled meetings, coordination of various entities and activities as set forth in Division 01 Section "Project Meetings". Where necessary, schedule additional coordination meetings for this purpose on an as-needed basis.

F. Layout: It is recognized that the Contract Documents are diagrammatic in showing certain physical relationships of the various elements and systems and their interfacing with other elements and systems. Establishment and coordination of these relationships is the exclusive responsibility of the Contractor. Do not scale the Contract Drawings. Layout and arrange all elements to contribute to safety, efficiency and to carry the harmony of design throughout the Work. In case of conflict or un-dimensioned locations, verify required positioning with the Project Manager. The Contractor shall provide surveying for the layout of all improvements including both horizontal and vertical control, in accordance with the requirements of Division 01 Section "Construction Surveying".

G. Substrate Examination: The Contractor shall ensure that the subcontractor of each element of the Work examines the conditions of the substrate to receive the work, dimensions and spaces adjacent, tolerances, interfacing with other elements and services, and the conditions under which the Work will be performed. The Contractor shall require each subcontractor to notify the Contractor in writing of conditions detrimental to the proper or timely completion of the Work and ensure that they do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to the subcontractor.

1.4 COMPLETE SYSTEMS

A. It is the intent of the Contract Documents that the system be complete and functional to provide the intended or specified performance. The Contractor shall provide all incidental items and parts necessary to achieve this requirement.

1.5 COMPATIBILITY

A. Provide products and equipment which are compatible with other work requiring mechanical interface including connections, control devices, water, drain and other piping connections. Verify requirements and other interface requirements before ordering equipment and resolve conflicts that may arise.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 GENERAL INSTALLATION PROCEDURES

A. Require the subcontractor of each major component to inspect both the substrate and conditions under which work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

B. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items. Re-check measurements and dimensions before starting each installation.

C. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Contract Documents.

D. Installation:
   1. Provide attachment and connection devices and methods necessary for securing work. Secure work true to line and level. Allow for expansion and building movement.
   2. Install each component during weather conditions and the Work status that will ensure the best possible results. Isolate each part of the completed construction from incompatible materials as necessary to prevent deterioration.
   3. Coordinate work with required inspections and tests, to minimize the necessity of uncovering completed construction for that purpose.

E. Visual Effects: Provide uniform joint widths in exposed work. Arrange joints in exposed work to obtain the best visual effect. Refer questionable choices to the Project Manager for final decision.

F. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Project Manager for final decision.

3.2 CLEANING AND PROTECTION

A. During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration prior to achieving substantial completion.

B. Clean and maintain completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 01 31 13

SECTION 01 31 19 PROJECT MEETINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for the Contractor, including his field superintendent and quality control representative, to attend meetings scheduled by the District for the collection and dissemination of information related to the subject contract.
   1. The Contractor will prepare the minutes of each meeting and distribute them to each of the participants.

1.3 OTHER MEETINGS

A. The Contractor will be advised of times, dates, and places of contract meetings.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PRECONSTRUCTION MEETING

A. A Preconstruction Meeting will be scheduled by the District after the Contract has been signed by all parties. The purpose of this meeting is to introduce the District's Representatives to their counterparts in the Contractor's organization and to establish lines of communication between the representatives and outline some of the contract requirements. The Contractor's superintendent**,** and quality control representative(s) shall attend this meeting.
   1. The Project Manager will distribute a notice of this meeting, along with an agenda of the subjects to be addressed.
   2. The Project Manager will explain and discuss the responsibilities and authorities of the District, the Designer, and the Project Manager's organization.
   3. The Project Manager will provide highlights of the following information at this meeting:
      a. Minority-Owned Business Enterprise (MBE), Women-Owned Business Enterprise (WBE), Veteran-Owned Business Enterprise (VBE), and Disabled-Owned Business Enterprise (DOBE) requirements.
      b. Insurance, laws, codes, traffic regulations, and permit requirements of public agencies and their regulations.
      c. Procedures for processing change orders.
      d. Procedures for submitting shop and working drawings, product data and samples.
      e. Monthly pay estimate cutoff dates.
      f. Payment procedures.
      g. Request for information procedures.
      h. Communication procedures.

i. Contractor-required Daily Reports.
j. Scheduling and coordination requirements.
k. Quality Control/Quality Assurance procedures.
l. Environmental requirements and permits.
m. Milestones for Substantial Completion and Final Acceptance.
n. Record documents.
o. Project closeout requirements.

B. The Contractor will introduce the Contractor's representatives and briefly describe each person's responsibilities. The Contractor shall provide the following:
1. A list of all subcontractors.
2. Office, storage areas, and construction area layouts, along with temporary easements.
3. Safety, first aid, emergency and security procedures, including the name and contact information for the Contractor's insurance company.
4. 60-day preliminary schedule.
5. Sequence of Work.
6. Construction methods, general worksite layout, and haul plan.
7. Housekeeping procedures.
8. The Contractor's general erosion and sedimentation control plans, noise, hazardous material, air and water pollution control plans, and Quality Control Plan.
9. Coordination and notification requirements for utility work.
10. Deliveries and priorities of major equipment.
11. Submittal schedule.

C. Explanations provided by the District will not amend, supersede, or alter the terms or meaning of any contract document, and the Contractor shall not claim reliance on such explanations as a defense to any breach or failure by the Contractor to perform as specified in the contract.

3.2 CONSTRUCTION PROGRESS MEETINGS

A. Progress meetings will be scheduled weekly or more often as necessary by the Project Manager to promote the competent and timely execution of the contract.

B. The meetings will be held at the worksite or at a location selected by the Project Manager. Meetings will be chaired by the Contractor.

C. The Contractor's personnel, as listed in Paragraph 3.1.A, above, shall attend unless otherwise agreed by the Project Manager.

D. The Contractor's Project Manager will be responsible for publishing minutes of the meetings.

E. At a minimum, the following items will be addressed at each meeting. The items addressed in the meeting do not waive notification or submittal requirements as required elsewhere in the contract.
1. Safety: Contractor shall report any safety issues.
2. Quality Control:
a. The Contractor's Quality Control Representative shall present and discuss the Independent Testing Agency weekly test report and/or testing schedule.
b. The Contractor's Quality Control representative shall report on inspections by other agencies and any follow-up activity required.
c. The Project Manager shall present and discuss issues regarding quality control.

3. Quality Assurance: The Project Manager shall present and discuss issues regarding quality assurance.
4. Design Activities: Open discussion.
5. Shop Drawings / Submittals / Material Procurement:
    a. The Contractor shall provide and review the submittal schedule and provide any updated information and/or changes to the schedule.
    b. The Contractor shall provide information on the status of submittals requiring re-submittal.
    c. The Contractor shall review any accepted submittals that the Contractor plans to re-submit with changes.
    d. Contractor shall provide the status of material procurement for long-lead items (long-lead items are materials and equipment that have a fabrication and/or delivery duration that exceeds 15 working days).
        1) This information shall be provided by the Contractor in a format satisfactory to the Project Manager and shall include, at a minimum:
            a) Submittal/shop drawing preparation duration.
            b) Review duration.
            c) Fabrication duration.
            d) Delivery duration.

        2) All long-lead items shall be identified with a separate activity on the approved Critical Path Method (CPM) project schedule.
6. Construction Activities: Open discussion to include coordination items with other Contractors and / or agencies.
7. Schedule:
    a. The Contractor shall provide to the Project Manager the Contractor's three (3) week look-ahead schedule and review at the meeting the items on the schedule. The schedule shall be in bar chart format based on the approved CPM, and shall include dates of testing activities, items in progress, percentage of completion of items, responsible subcontractor for the items.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 01 31 19

SECTION 01 32 13 SCHEDULE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the requirements for the preparation of a preliminary schedule, construction schedule, related narratives, and monthly progress reports, all-encompassing complete performance of contract requirements.

B. The Contractor shall schedule and coordinate the work with their subcontractors and suppliers including use of the worksite. The Contractor shall keep the subcontractors and suppliers informed of the project construction schedule to enable the subcontractors and suppliers to plan and perform their work properly.

C. The Contractor shall, in accordance with the requirements of the technical specifications, submit a construction schedule that shall provide for the expeditious and practicable execution of the Work.

D. Float or slack is defined as the amount of time between the early start date and the late start date or the early finish date and the late finish date of any activities in the schedule. Float or slack is not time for the exclusive use or benefit of either the Contractor or the Owner.

E. At a minimum, the Contractor shall submit a monthly progress report and schedule update in accordance with the scheduling provisions or as directed by the Project Manager.

F. The Contractor shall complete the Work within the contract time and in accordance with the most recent schedule submittal that has been approved in writing by the Project Manager.

G. The Contractor shall provide a delivery guarantee from Vortex for all proposed spray features and related components.

H. Reference the General Conditions as listed:
1. Article 4 “Payment”
2. Article 5 “Insurance”.
3. Article 8 “Contractor”.
4. Article 10 “Changes in the Work”.
5. Article 12 “Payments and Completion”.
6. Article 15 “Miscellaneous Provisions”.

1.3 PLANNING
1. The schedule shall show total contract time, including project milestones, as indicated in the Special Conditions or elsewhere in the contract documents.

B. The Contractor shall prepare a work plan to complete the Work within the contract time and complete those portions of work relating to each milestone date and other contract requirements.
   1. The Schedule shall be submitted electronically to the Project Manager in PDF format.
   2. The schedule activities shall be resource loaded showing labor man hours by crafts, major construction equipment by type and value of the work.
   3. The value of the work shall summarize each pay item shown in the Schedule of Values and balance to their amount.

C. In addition to the construction activities, the schedule shall include activities for furnishing materials and equipment and vendor shop drawing preparation.
   1. The construction schedule, a supporting narrative, and the overall progress curve shall be submitted for approval within thirty (30) days after Notice to Proceed.
   2. Within thirty (30) days the Owner will respond with approval or direction to revise and resubmit within ten days.
   3. Failure of the Contractor to have a construction schedule approved by the Owner will be considered cause for withholding progress payment(s).

D. To the extent that the construction schedule or any revisions thereof contains anything not jointly agreed upon in writing or fails to show anything jointly agreed upon in writing, it shall not be considered to have the approval of the Owner.
   1. Failure to include any work item required for performance of this contract shall not excuse the Contractor from completing all work within applicable completion dates, regardless of the Owner's approval of the schedule.

E. Failure of the Contractor to comply with this Section will be considered cause for withholding progress payment(s) or termination for default.

1.4 SUBMITTALS

A. Refer to Division 01 Section "Submittals" for submittal procedures. Submit the following in digital format:
   1. Preliminary schedule (with narrative).
   2. Construction schedule data and work plan (with narrative).
   3. Monthly progress report.
   4. Construction schedule change request (as needed).
   5. Record construction schedule.

PART 2 - PRODUCTS

2.1 PLOT AND REPORT FORMAT

A. All sheet sizes shall be either 24 x 36-inches or 36 x 48-inches. They shall contain a title block with a minimum eighteen (18) point font showing:
   1. Contractor's name.
   2. Contract number and title.
   3. Plot date.
   4. Data date.
   5. Symbol definitions.
   6. List of all approved changes to the original approved schedule.

B. Plots shall contain a timeline at the top.

PART 3 - EXECUTION

3.1 PRELIMINARY SCHEDULE

A. The Contractor shall prepare a preliminary schedule covering the first ninety (90) calendar days of the contract. This preliminary schedule shall be submitted at the Preconstruction Meeting and shall be accompanied by a narrative description of the work plan. Within fourteen (14) days, the Owner will respond with acceptance or direction to revise and resubmit within ten days.

B. The preliminary schedule shall show all significant work tasks that occur in the first ninety (90) days, including planning, mobilization, shop submittals and approvals, procurement, fabrication, and construction. It shall identify work items or milestones that affect or are affected by the Owner, other Contractor's work, utilities and other third parties, and it shall list major data submittals required by the contract.

C. The preliminary schedule shall be accompanied by a narrative describing the Contractor's approach to mobilization, procurement, and construction during the first 90 days. The narrative shall elaborate on duration, production rates, major equipment to be used, and shall identify all major assumptions used to develop the schedule.

3.2 CONSTRUCTION SCHEDULE

A. The construction schedule shall include:
   1. Work items identified in a Work Breakdown Structure (WBS) format that corresponds with the technical specifications.
   2. The order, sequence and interdependence of all significant work items including construction, procurement, fabrication, testing, startup and inspection and delivery of critical or special materials and equipment, submittals and approvals of critical samples, shop drawings, procedures, or other documents that could have a schedule impact.
   3. Work items by the Owner, other Contractors, utilities and other third parties that may affect or be affected by Contractor's activities.
   4. Proper referencing of all work items to identify applicable subcontractors or other performing parties.
   5. Work items shall be resource loaded to show the direct man-hours estimated to perform the work including work by subcontractors.
   6. Include estimated quantities and production rates, hours per shift, work days per week, and types, number and capacities of major construction equipment to be used and whether the Contractor plans to work weekends or holidays.

B. The construction schedule shall be prepared to include the data for the total contract duration. Scheduled start or completion dates imposed on the schedule by the Contractor shall be consistent with contract milestone dates. Milestone events shall be the schedule dates specified in the Special Conditions and shall be prominently identified and connected to the appropriate work item, denoting its start or completion. Work items related to any interim milestones shall be coded for that milestone.

C. The Contractor shall submit the following documents to the Owner upon completion of preparation of the construction schedule:
   1. Construction schedule reports that contain the following data for each work item: Identification, description, responsibility, duration, early start and early finish, late start and late finish, total float, and resources. The work items shall be sorted by float, early start, subcontractor, or other sorts mutually agreed to. The reports shall also show the logic ties of successor and predecessor work items.
   2. A physical progress curve showing either manpower or other appropriate key contract items derived from the construction schedule and against which physical progress performance will be measured for schedule and payment purposes.

3.3 PROGRESS REPORTING

A. The Contractor shall submit a monthly progress report at the end of each month following the Notice to Proceed. At the end of each month, the Contractor and the Project Manager shall agree on the progress of the work and the Contractor shall update the construction schedule accordingly. The updated construction schedule is a prerequisite to the submittal of the Contractor's application for progress payment. The schedule shall be made in accordance with Article 3.2, above. This review does not constitute an approval of the construction schedule and shall not be used for the purposes of modifying the initially approved construction schedule.

B. The Contractor shall submit the monthly progress report consisting of a written narrative and various construction schedule reports. This report will be reviewed in a meeting between the Contractor and the Project Manager.
   1. The narrative report shall describe overall progress of the work, discuss significant problems with proposed corrective action, and show the status of major changes and any other changes in sequence of the Work.
   2. The construction schedule reports shall include tabular reports showing the status of resources for completed and in progress work items and for work items scheduled to start in the next thirty (30) days. The report shall include all the information outlined in paragraph 3.2.C.2, above.
   3. A bar chart format schedule shall be provided showing the Contractor's completion status (progress) on each work item along with plots described in paragraph 3.2.C.1, above.
   4. The physical progress curve shall be updated to show actual progress.

C. The latest completion time for any work item does not fall within the time allowed by the construction schedule, the sequence of work and/or duration shall be revised by the Contractor through concurrent operations, additional manpower, additional shifts or overtime, additional equipment or alternative construction methods until the schedule produced indicates that all significant contract completion dates, occupancy dates and milestones will be met. No additional costs will be allowed if such expediting measures are necessary to meet the agreed completion date or dates except as provided elsewhere in the contract documents.

3.4 SCHEDULE CHANGES

A. The Contractor's request for construction schedule changes shall be made on the latest approved construction schedule, shall be accompanied by a narrative description and justification for the change, and shall be submitted in accordance with the General Provisions Article 6 "Time Extensions" on changes in time. Minor revisions submitted at monthly progress review meetings are not considered as changes in this context.

B. The construction schedule may be changed when one or more of the following occur:
   1. When a change order significantly affects the contract completion date or sequence of work items.
   2. When the Contractor elects to change the sequence or duration of work items.
   3. When the Owner directs a change that affects a milestone date(s) specified in the Special Conditions.

C. If, after submitting a request for change to the construction schedule, the Project Manager does not agree with the request, the Project Manager will schedule a meeting with the Contractor to discuss the differences. If a settlement cannot be reached on the change in the construction schedule or if the Contractor has failed to submit revisions to the network, the Project Manager has the option of providing suggested logic and/or duration times in all subsequent updating reports. The suggested logic and/or duration times will remain in effect until the change in the construction schedule is settled or until the logic and duration are superseded.
   1. If the Contractor has any objections to the data furnished by the Project Manager, he shall advise the Project Manager within ten (10) days in writing, fully supporting the objections with a counter plan. The revisions suggested by the Project Manager shall be used for updating reports until the Project Manager approves the counter plan.
   2. If the Contractor does not submit a counter plan and data within ten days after the date of the Project Manager's suggested logic, the Contractor is deemed to concur with the Project Manager's suggested logic/duration time changes. The Project Manager's plan will be the basis of negotiations for any adjustment of the time and cost for performance of the Work.

3.5 CONTRACT EXTENSIONS

A. If the Contractor is granted an extension of time for completion of any milestone or contract completion date under the provisions of the contract, the determination of the total number of extended days will be based upon the current analysis of the schedule and upon all data relevant to the extension. Such data shall be incorporated in the next monthly update of the schedule.

B. The Contractor acknowledges and agrees that delays in work items which, according to schedule analysis do not affect any milestone dates or contract completion date shown on the CPM network at the time of the delay will not be the basis for a contract extension.

C. Weather Delays: Impacts to the project schedule related to abnormal weather conditions will be based on General Contract Conditions Section 1105.3.

3.6 RECORD CONSTRUCTION SCHEDULE

A. After all contract work items are complete, the Contractor shall submit a Record Construction Schedule showing actual start and finish dates for all work items and milestones.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 01 32 13

SECTION 01 32 19 SUBMITTALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section summarizes the requirements for the submittal of documents to the District that are defined in these Specifications. It also describes the procedures for "supplemental" submittals.

B. Reference the General Conditions as listed:
   1. Article 8 "Contractor".

1.3 SUBMITTALS

A. Existing Conditions: Contractor shall provide documentation of existing conditions, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.
   1. Use sufficiently detailed digital photographs or videos.
   2. Include plans and notations to indicate specific damaged conditions of existing construction, site elements, and landscape.

PART 2 - PRODUCTS

2.1 SUBMITTAL SCHEDULE

A. The Contractor shall provide a submittal schedule within fourteen (14) days after Notice to Proceed. The Submittal Schedule shall be directly related to the Critical Path Method (CPM) schedule, shall identify all the submittals, and shall include the following information for each submittal item:
   1. Specification section, contract article, or special condition.
   2. Specification Subparagraph.
   3. Item description.
   4. Date the submittal shall be submitted.
   5. Name of subcontractor or supplier.

B. The submittal schedule shall be updated every two weeks by the Contractor and submitted with the progress payment request.

2.2 SUBMITTAL REQUIREMENTS

A. Each submittal document shall include a title block showing the following information:
   1. Date of submittal and revision dates.
   2. Contract title and number.

3. The names of Contractor, subcontractor, supplier, manufacturer and when applicable, the seal and signature of an engineer registered in the State of Ohio, for the involved discipline.
4. Identification of product by either: description, model number, style number or lot number.
5. Subject identification by contract drawing or specification reference.

B. On each submitted drawing, include a blank space on each sheet, three inches by four inches, in the lower right corner, just above the title block, in which the Project Manager may indicate the action taken.

C. Make submissions sufficiently in advance so that the Project Manager review may be completed before any material procurement or Work represented by those submittals is scheduled to be performed.

D. Allow a minimum cycle of ten (10) working days for review of each submittal by the District.

E. The Contractor shall at the time of submission describe variations from the contract documents in writing, separate from the submittal document. If the Project Manager approves any such variations, an appropriate contract change order shall be issued except that, if the variation is minor and does not involve a change in price or in time of performance, a modification need not be issued. If a submission contains variations and the variation column is not marked on the transmittal form, it will not be considered for review and acceptance. Along with marking the transmittal as a variation, a description must be included which outlines all the differences including maintenance and utility services along with any cost savings from an item not containing the variation.

F. Changes in accepted submittal documents will not be permitted unless those changes have been accepted, in writing, by the District.

2.3 SUBMITTALS

A. All submittals shall be delivered to the Project Manager.

B. Electronic submittals shall be submitted on a single USB Drive, email, or approved project website. Acceptable formats include:
1. Adobe Acrobat. All files shall be fully compatible with Adobe Acrobat, shall have no security, and bookmark every applicable submittal.
2. Microsoft Office.
3. AutoDesk AutoCAD 2010 or newer.
   a. AutoCAD files shall be packaged to include related x-ref files, plot files and pen settings.
4. Other files pre-approved by the Project Manager.

C. Electronic file names: Each electronic document shall have a unique file name. File name convention shall be as follows unless otherwise agreed to by Project Manager: AAA-BBBBBB-CCC-RZ:
1. AAA = sequential submittal number starting at 001.
2. BBBBBB = specification section containing submittal requirements.
3. CCC = sequential specification submittal number starting at 001.
4. RZ = sequential revision number. RZ not required on initial submittals.

5. Example A: 005-012973-002", five submittals have been logged overall with two submittals made to Division 01 Section "Schedule of Values".
6. Example B: 009-012973-002-R3, nine submittals made overall and three revisions to submittal 012973-002.

2.4 SUPPLEMENTAL SUBMITTALS

A. Supplemental submittal documents initiated by the Contractor for consideration of corrective procedures shall contain sufficient data for review. Make supplemental submittals in the same manner as initial submittals with the appropriate primary transmittal referenced.

PART 3 - EXECUTION

3.1 CONTRACTOR REVIEW

A. The Contractor shall review submittal documents, stamp and sign as reviewed and approved as complying with contract documents prior to submission to the District.

3.2 DISTRICT REVIEW

A. Submittal documents will be reviewed by the Project Manager for conformance to requirements of the contract drawings and specifications. Review of a separate item will not constitute review of an assembly in which the item functions. The Project Manager will withhold approval of submittals that depend on other submittals not yet submitted. Review and acceptance will not relieve the Contractor from his responsibility for accuracy of submittals, for conformity of submittal document to requirements of contract drawings and specifications, for compatibility of described product with contiguous products and the rest of the system, or for protection and completion of the contract in accordance with the contract drawings and specifications.

B. The Project Manager will review the submittal documents for general conformance with the contract documents and mark the Action Code, sign, and date the transmittal.

C. The Action Codes have the following meanings:
1. APPROVED: no corrections or resubmissions required; fabrication may proceed.
2. APPROVED AS NOTED: If Contractor complies with noted corrections, fabrication may proceed, and resubmission is not required. If for any reason the Contractor cannot comply with the noted corrections, fabrication shall not proceed, and Contractor shall resubmit for additional review and comment.
3. REVISE AND RESUBMIT: means that the submittal is unacceptable and must be revised and resubmitted. Fabrication shall not proceed.
4. REJECTED: Submittal is not in compliance with the Contract Documents and is not acceptable. Resubmit Contract compliant material.

3.3 CONTRACTOR RESPONSIBILITIES

A. Coordinate each submittal document with the requirements of the Work. Ensure each submittal for a specific trade is compatible with other submittals of that trade and submittals of related trades (including producing drawings, as needed, to show the relationship of work between trades).

B. Contractor's responsibility for errors and omissions in submittal documents and associated calculations is not relieved by the District's review, correction, and acceptance of submittals.

C. Contractor's liability to the District, in case of variations in the submittal document from the requirements of the contract documents, is not relieved by the District's review and acceptance of submittals containing variations unless the District expressly approves the deviation in writing, in which the District describes the variation.

D. The Contractor shall maintain a file of all approved submittal documents at the worksite. The complete file of approved submittal documents shall be turned over to the District with the Record Documents at the end of the job.

E. Schedule impact due to resubmittal requirements is the responsibility of the Contractor.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 01 32 19

SECTION 01 33 23 SHOP AND WORKING DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for preparing and submitting shop and working drawings, product data, samples, and record documents required by other specifications sections.
   1. The Contractor shall submit all shop and working drawings, product data and samples, as defined in the General Conditions, to the Project Manager in accordance with the requirements in the specifications. The Project Manager will return one copy of the shop and working drawings, and product data to the Contractor with a written transmittal within the time periods noted in the specifications.

B. Reference the General Conditions as listed:
   1. Article 12 “Payments and Completion”.
   2. Article 8 “Contractor”.
   3. Division 01 Section “Submittals”.

1.3 CHANGES

A. Changes in products for which shop or working drawings, product data or samples have been submitted will not be permitted unless those changes have been accepted and approved in writing by the Owner.

PART 2 - PRODUCTS

2.1 SHOP AND WORKING DRAWINGS

A. Include the following as they apply to the subject:
   1. Contract title, work order and number.
   2. Respective contract drawing numbers.
   3. Applicable specification section numbers.
   4. Relation to adjacent structure or materials.
   5. Field dimensions clearly identified as such.
   6. Applicable standards such as ASTM or Federal Specification number, and pertinent authority specifications or standards.
   7. Identification of deviations from the Contract drawings and specifications.
   8. Drawing name, number, and revision.
   9. Contractor’s stamp, initialed or signed, certifying:
      a. Verification of field measurements.
      b. Review of submittals for compliance with contract requirements.
      c. Compatibility of the Work shown thereon with that of affected trades.

10. Blank space on each sheet per Division 01 Section “Submittals”, paragraph 2.3.B.

B. Drawings of equipment and other items that contain multiple parts shall include exploded views showing the relationship of parts and the description of the parts into the smallest units that may be purchased or serviced.

2.2 PRODUCT DATA

A. Modify manufacturer’s standard and/or schematic drawings to delete information which is not applicable to the contract. Supplement standard information with additional information applicable to this contract.

B. Modify manufacturer’s standard(s), diagrams, schedules, performance charts, illustrations, calculations, and other descriptive data to delete information which is not applicable to the contract. Indicate dimensions, clearances, performance characteristics and capacities. Include with the submittal electrical, plumbing, HVAC, and any other diagrams, as applicable.

C. Modify erection, application and placing instructions to delete information that is not applicable to the contract or work order.

D. Include the following:
1. Contract title, work order and number.
2. Respective contract drawing numbers.
3. Applicable contract technical specification section numbers.
4. Applicable standards such as ASTM or Federal Specification number, and pertinent authority specification or standards.
5. Identification of deviations from the Contract drawings and specifications.
6. Contractor’s stamp, initialed or signed, certifying:
    a. Dimensional compatibility of the product with the space in which it is intended to be used.
    b. Review of submittals for compliance with contract requirements.
    c. Compatibility of the product with other products with which it is to perform, or which will be next to it.
    d. The products electrical, plumbing, control and HVAC requirements conform to contract documents and the necessary utilities are provided for in the contract documents.

E. Certificates of compliance shall be submitted for all products. The certificates shall:
1. State that the product complies with the respective specification and contract drawing requirements.
2. Be accompanied by a certified copy of test results pertaining to the product
3. Show the submittals date, Contractor’s name and address, contract title and number, product represented and its location in the contract, producer’s name, product trade name and catalog number, place of product origin, test date, testing organization’s name and address, quantity of the product to be furnished and related contract drawing and specification section numbers.
4. Be signed by an officer or another authorized representative of the producer and notarized.
5. Submit one digital copy.
6. Be received by the Owner not later than thirty (30) days before the acceptance is needed of the products for ordering.

2.3 SAMPLES

A. Submit samples of sizes and quantities to clearly illustrate full color range and functional characteristics of products and materials including attachment devices.

B. Erect field samples and mockups at the worksite as specified in the several technical specifications sections and at locations acceptable to the Project Manager. All field samples shall be erected in a location that will be readily visible throughout the life of the contract to allow comparison of the work as it progresses to the field sample.

C. The Contractor shall verify, through appropriate inspections and tests, that the samples submitted meet the specifications and shall provide inspection and test data with the samples. The review and comments on the sample shall not relieve the Contractor of his responsibility for completion of the contract.

D. Show the following information:
   1. Contract title and number.
   2. Respective contract drawing numbers.
   3. Applicable technical specification section numbers.
   4. Applicable standards such as ASTM or Federal Specification number.
   5. Identification of deviations from the Contract drawings and specifications.
   6. Contractor's stamp, initialed or signed, certifying:
      a. Dimensional compatibility of the product with the space in which it is intended to be used.
      b. Review of submittals for compliance with contract requirements.
      c. Compatibility of the product with other products with which it is to perform, or which will be next to it.
   7. If multiple samples are submitted and the Project Manager is requested to make a choice, each sample shall have a unique identification number attached to it, so the returned transmittal can state the identification number of the accepted sample and the Contractor will know which one it is.

PART 3 - EXECUTION

3.1 CONTRACTOR RESPONSIBILITIES

A. Verify field measurements, catalog numbers and similar data.

B. The Contractor shall not start work for which submittals are required until a transmittal has been received by the Contractor showing acceptance or acceptance as noted by the Project Manager.

C. Before making submittals ensure that products will be available in the quantities and at the times required by the contract.

D. Submit final, corrected, digital drawings of contract and shop and working drawings showing the Work as actually installed, placed, erected and applied. Refer to Division 01 Section "Contract Closeout".

3.2 REVIEW BY THE OWNER

A. One digital copy of the marked-up shop and working drawing and one digital copy of the product data will be returned to the Contractor by the Project Manager. Only the transmittal form, appropriately marked, and two samples will be returned on sample submittals. Contractor shall maintain one approved sample on site for the duration of the project.

B. Contractor's responsibility for errors and omissions in submittals for compatibility will not be reduced, waived or otherwise limited by the review and acceptance of submittals by the Owner.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 01 33 23

SECTION 01 35 23 CONSTRUCTION SAFETY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for construction safety precautions and programs by the Contractor and the basis for reviews by the Project Manager.

B. Reference the General Conditions as listed:
1. Article 8 “Contractor”.
2. Article 13 “Protections of Persons and property”.

1.3 RESPONSIBILITY

A. The General Conditions make it clear that all safety precautions during the construction process are the responsibility of the Contractor. The Contractor is responsible for the health and safety of his employees, agents, subcontractors and their employees, and other persons on the worksite; for the protection and preservation of the work and all materials and equipment to be incorporated therein; and for the worksite and the area surrounding the worksite. The Contractor shall take all necessary and reasonable precautions and actions to protect all such persons and property.

B. This Section shall be interpreted in its broadest sense for the protection of persons and property by the Contractor and no action or omission by the Project Manager or his authorized representatives shall relieve the Contractor of any of its obligations and duties hereunder.

1.4 SUBMITTALS

A. Refer to Division 01 Sections “Submittals” and “Shop and Working Drawings, Product Data, and Samples” for the process. A safety plan shall be submitted by the General Contractor prior to commencing any work. As part of the safety plan, the General Contractor shall submit a site-specific Lockout Tagout (LO/TO) plan for review prior to commencing any phase of work requiring de-energization, as defined by OSHA.

B. Safety Plan: The Contractor shall provide a digital copy of their safety plan to the Project Manager for review at least ten (10) days before on-site construction begins. The Contractor’s plan must meet at a minimum all applicable federal, state, and local government requirements.
1. The Contractor must, as part of the Contractor’s safety plan, submit one electronic file in the form of a security-free, fully bookmarked Adobe Acrobat PDF file and one body hard copy of the following information for acceptance by the Project Manager prior to construction:
a. Name of the Contractor’s site safety representative.

b. If the Contractor is running multiple shifts or working more than forty (40) hours per week, the name of an assistant Contractor's safety representative who can act in the absence of the site safety representative.
c. Twenty-four (24) hours per day emergency phone numbers of Contractor site management to be used in case of injury or accident. Provide at least four contacts.
d. The Contractor's method of ditching and trenching excavation to be used, including how slopes will be stabilized with calculations showing the slope stability.
    1) The Contractor shall also show how material will be stored beside the excavation.
    2) Stored material will include the excavated and backfilled material.
e. How injuries or accidents will be handled including samples of the forms used to report injuries or accidents.
f. How employees will be handled who are unable to safely perform their duties, including how the Contractor will determine whether an employee is unable to safely perform his duties.
g. How and when equipment will be checked to see that it is safe, that all safety guards are in place and that the equipment is being used for its designed purpose and within its rated capacity.
h. How and when all electric devices will be checked for proper grounding and insulation.
i. In the initial safety plan, the contractor shall identify all systems (electrical, hydraulic, steam, etc.) that will require Lockout or Tagout as defined by OSHA.
j. No later than one (1) week prior to commencement of applicable phase of work, the Contractor shall submit a finalized, site-specific Lockout Tagout Plan for review. At a minimum, the plan shall address the following:
    1) Type of energized system and identification of hazards
    2) Type of lock and/or tag to be used and any additional mechanical controls required.
    3) Protocol for placing and removing tags/locks, including communication plan
    4) Identification of all affected personnel in the work area (by name when possible) and protocol to limit number of affected personnel in work area
    5) List of personnel authorized to place/remove locks and tags (by name/position)
k. How trash and human organic waste will be disposed.
l. How snow and ice will be removed within the project area by the Contractor.
m. How concrete forms will be anchored to ensure their stability, including calculations showing that the forms will safely hold the maximum construction loads.
n. How flammable materials will be stored and handled, and how any spills will be cleaned up and removed for disposal.
o. The system that will be used to prevent fires, and if fires do occur who will be trained to fight them. Also, the firefighting equipment the Contractor will have available and how this equipment's condition will be monitored.
p. How materials will be received, unloaded, stored, moved, and disposed of.
q. How personnel working above ground level will be protected from falling.
r. How people working underneath work will be protected.
s. What will be done to protect personnel in case of severe weather.
t. How adequate lighting will be provided and monitored.

u. How the safety of work platforms, man lifts, material lifts, ladders, shoring, scaffolding, etc. will be ensured relating to load capacity and the protection of personnel using or working around them.

C. Prior to the start of any work by a contractor or subcontractor employee, the Contractor shall provide the Project Manager with a list of its employees, subcontractor's employees, and other personnel the Contractor has requested to work on site, who have signified in writing that they have been briefed on, or have read and understand, the Contractor's Safety Plan.

PART 2 - PRODUCTS

2.1 NOT USED

PART 3 - EXECUTION

3.1 IMPLEMENT CONTRACTOR'S SAFETY PLAN

A. Implement the approved Contractor's Operational Safety Plan as described in Part 1 of this section.

B. Implement the approved Contractor's Lockout Tagout Plan as described in Part 1 of this section.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 01 35 23

SECTION 01 42 10 REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section identifies primary compliance with the Owner's regulatory requirements.
   1. Ohio Department of Health (https://odh.ohio.gov/)
   2. Applicable Utilities

B. Construction shall be based on the latest edition of the referenced codes including additions and revisions thereto that are in effect at the time of project bidding.

1.3 BUILDING CODE

A. All construction work shall be governed by the Building Code for the Owner, latest edition. This is based upon the International Building Code of the International Code Council with Owner Amendments to this code.

1.4 LOCAL FIRE DEPARTMENT

For review and approval of plans for compliance with the Wayne Township Fire Department's requirements as they apply to the project.

Wayne Township Fire Department
1100 Franklin Road
Waynesville, OH 45068
Phone: 513.897.3010

1.5 SUBSURFACE UTILITY ENGINEERING (SUE)

A. Refer to the 811 website for SUE required project criteria. (oups.org)

B. All new underground facilities must be electronically locatable when installed.

C. As-Built drawings shall be provided for all Subsurface Utilities.

1.6 WATER SERVICE

A. For review and approval of plans for compliance with the Village of Waynesville Water Division requirements as they apply to projects for water service.

Village of Waynesville
Water Division
1400 Lytle Road

Waynesville, OH 45068
Telephone 513.897.8015

1.7 SEWER SERVICE

A. For review and approval of plans for compliance with the Warren County Water and Sewer Department requirements as they apply to projects for water service.

Warren County Water and Sewer Department
406 Justice Drive
Lebanon, OH 45036
Phone: 513.695.1377

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PERMITS AND CERTIFICATIONS

A. The Contractor shall acquire all applicable permits for the contracted scope of work. Refer to General Conditions 317 “Permits and Licenses.”

B. The Contractor shall maintain records on site of all permits acquired by federal, state, and local agencies. Posting of permits shall conform to requirements of the respective agencies.

C. At the completion of any inspection by other agencies, the Contractor shall forward copies of the status of the inspection and copies of any approved or “signed-off” inspections by the respective agencies to the Project Manager.

D. At the time of request for Substantial Completion, the Contractor shall forward to the Project Manager all permits approved by the respective agencies.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 01 42 10

SECTION 01 42 16 DEFINITIONS AND CONVENTIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section contains a list of definitions of words or phrases and grammatical or contextual conventions commonly used in these contract documents.

1.3 DEFINITIONS

A. Alphabetical Listing of Definitions
   1. As Directed, As Approved, or As Requested: Unless otherwise indicated, these terms imply "by the Project Manager" and require that an instruction be obtained by the Contractor from the Project Manager.
   2. As Indicated, As Shown, or As Noted: As depicted by graphic indication, notes or schedules, or written in the Contract Drawings, Specifications, or elsewhere in the Contract Documents.
   3. Concealed: Embedded in masonry, concrete or other construction; installed in furred spaces; within double partitions or hung ceilings; in trenches; in crawl spaces or in enclosures.
   4. Ensure: To make certain in a way that eliminates the possibility of error.
   5. Exposed: Not installed underground or "concealed" as defined above.
   6. Furnish or Provide: To supply, install and connect complete and ready for safe and regular operation of particular work unless specifically otherwise noted.
   7. Install: To erect, mount and connect complete with related accessories.
   8. Or equal, or Approved Equal: Refers to products which, in the opinion of the Project Manager, are similar in all respects to products specified by proprietary brand name.
      a. Refer to Division 01 Section "Substitutions" for procedures for submittal of proposed substitutions.
   9. Related Work: Includes, but not necessarily limited to, mentioned work associated with, or affected by, the work specified.
   10. Reviewed, Satisfactory, Accepted, or Directed: Assumes by or to the Project Manager.
   11. Rework: To repair existing items or work required to be removed and replaced in order to accomplish the Work in accordance with the contract documents.
   12. Similar, or Equal: Same in materials, weight, size, design, construction, capacity, performance, and efficiency of specified product.
   13. Supply: To purchase, procure, acquire, and deliver complete with related accessories.
   14. Unless Otherwise Indicated and Unless Otherwise Noted: General note to perform work as indicated or shown on drawings or in specifications unless specifically directed otherwise elsewhere in the contract documents; may be abbreviated "U.O.N.", "U.O.I.", or "U.N.O."

1.4 CONVENTIONS

A. Specifications Format: In order to standardize the location of information in the Contract Documents, the specifications generally are organized in the following format:
   1. The 2014 edition of "MASTERFORMAT" published by the Construction Specifications Institute.

B. Organization of Drawings and Specifications: Organization of the specifications into divisions and sections, and arrangement or numbering of drawings is intended solely for the convenience of the Contractor in his responsibilities to divide the Work among subcontractors or to establish the extent of work to be performed by any trade.
   1. Neither the Owner nor the Project Manager assume any liability arising out of jurisdictional issues or claims advanced by trade organizations or other interested parties based on the arrangement or organization of drawings or specifications.

C. Gender and Number: For convenience and uniformity, parties to the Contract, including the Owner, Contractor, and Project Manager, and their subcontractors, suppliers, installers, consultants, or other interested parties are referred to throughout the contract documents as if masculine in gender and singular in number. Such reference is not intended to limit the meaning of the contract documents to the masculine gender or singular number.

D. Singular vs. Plural: Materials, products, equipment, or other items of work referred to in the singular shall be construed as plural where applicable by the intent of the contract documents and shall not limit quantities to be provided by the Contractor.

E. Imperative Mood: Specifications and notes on the Drawings or elsewhere in the contract documents are generally written in the imperative mood as instructions to the Contractor, whether the Contractor is specifically addressed or not.

F. References to Subcontractors or Trades: References to subcontractors, trades, or other entities which are not parties to the contract shall be construed as meaning the Contractor whose responsibility it shall be to divide the Work among subcontractors or trades. Such references are used as a matter of convention and are not intended to preclude or direct the Contractor's responsibility to divide the Work.

G. Abbreviations: Abbreviations are believed to be those in general use in the construction industry. Contact the Project Manager for clarification of abbreviations for which the meaning is not clear.
   1. Review the contract drawings for additional abbreviations.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section.

END OF SECTION 01 42 16

SECTION 01 42 23 ADMINISTRATION, PROCEDURES, CODES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes general administrative requirements and procedures, and related applicable codes.

1.3 CODES

A. Obtain all permits and licenses in accordance with Article 8 “Contractor”.

1.4 EXISTING UTILITIES

A. Locate and protect existing utilities in accordance with Article 13 “Protection of Persons and Property”.

B. Although existing utilities may be shown on the drawings, their location is not guaranteed. Contractor is required to call Ohio811 at 811 three (3) days (72 hours) prior to starting any work.

1.5 CONTRACTOR’S CONSTRUCTION SCHEDULE

A. Furnish construction schedule, as required by Article 8 “Contractor”.

B. IMPORTANT: Prior to beginning work on project site, the Contractor shall give a minimum of forty-eight (48) hours notification to the Project Manager.

C. The schedule may be used as a tool in analyzing any requests for the extension of the contract completion date due to changes in the Work or abnormal weather conditions. Normal weather conditions are based on the ten (10) year historical weather information provided by the National Climatic Data Center for the Dayton Metropolitan area. Normal weather conditions shall be incorporated into the bar chart schedule. Additional time will be added to the Contract time only if the activities involved will affect the project’s Completion Date because of the criticality of the activities changed or altered.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Properly carton, crate, cover, and protect materials, products and equipment for shipping, handling, and storing. Use appropriate means for hoisting and loading which will prevent damage or overstress to items being handled or shipped. Store them under roof in controlled environment whenever feasible; otherwise store off the ground under suitable coverings properly secured against wind and weather. Protect all items from rain, snow, moisture, wind,

cold, heat, frost, sun, staining, discoloration, deterioration, and physical damage from any cause. Refer to individual sections for specific requirements.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section.

END OF SECTION 01 42 23

SECTION 01 43 00 QUALITY ASSURANCE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Quality Assurance is defined as measures, tests, and/or audits that may be performed by the Owner or Owner Representatives to ensure the Contractors work is installed per the construction documents and the contractors Quality Control Plan.

B. This Section identifies inspection activities to be performed by inspectors and testing agencies employed by the Owner and working under the direction of the Project Manager.
   1. Inspection and tests, conducted by persons or agencies other than the Contractor, shall not in any way relieve the Contractor of his responsibility and obligation to meet all specifications and the referenced standards.
   2. The inspection and approval of work by other agencies above does not constitute inspection or acceptance of work required by the Owner. Technical specifications may contain requirements more stringent than Building Inspection Division or other code agency requirements.

C. Reference General Conditions as listed:
   1. Article 8 “Contractor”.
   2. Article 14 “Corrections of Work”.

D. Related Sections:
   1. Division 01 Section “Contractor Quality Control”.
   2. Division 01 Section “Submittals”.
   3. Division 01 Section “Shop and Working Drawings, Product Data, and Samples”.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 OWNER’S QUALITY ASSURANCE MEASURES

A. According to the judgment of the Project Manager, any portion of the work in this contract may be tested at any time for any reason.

B. Contractor shall not rely upon these tests to assure compliance with the Contract Documents.

3.2 TESTING – GENERAL

A. Tests: Made by testing laboratory approved by the Project Manager. Except as otherwise provided, sampling and testing of materials and laboratory methods and testing equipment shall be in accordance with latest standards and tentative methods of ASTM.
   1. Specific information concerning testing methods, sample sizes, etc., is included under applicable sections of Specifications.
   2. Any modification of, or elaboration on, these test procedures included for specific materials under their respective sections in Specifications shall take precedence over these procedures.

3.3 COST OF TESTING

A. Unless indicated otherwise, additional testing required by the Owner's Agents shall be performed by the Owner's authorized agents, at the Owner's expense.

B. Costs for testing shall be borne by the Contractor only if such tests indicate that work does not meet Contract Document requirements.

C. Costs for re-testing of non-complying work shall be borne by the Contractor.

3.4 TEST REPORTS

A. Test reports, whether performed for the Owner or the Contractor, shall be submitted to the Project Manager and Contractor as soon as results are available. Reports shall be clear, concise, comprehensive written forms containing required test results.

B. Reports of tests made by testing laboratories shall be distributed by testing laboratory as follows:
   1. Two (2) Copies – Project Manager.
   2. One (1) Copy – Contractor.
   3. One (1) Copy – Applicable Supplier or Subcontractor.

3.5 MANUFACTURING AND FABRICATION INSPECTIONS

A. The Project Manager may elect to perform additional inspections and/or tests at the place of the manufacturer, the shipping point, or at the destination to verify conformance to applicable specifications. Inspections and tests performed by the Owner shall not relieve the Contractor from the responsibility to meet the specifications, nor shall such inspections/tests be considered to be a guarantee for acceptance of materials that will be delivered at a later time.

B. The Project Manager or his authorized representative may inspect at its source any material or assembly to be used in the Work. Manufacturing plants may be inspected from time to time for the purpose of determining compliance with specified manufacturing methods or materials to be used in the Work and to obtain samples for testing and further inspection.

C. Should the Project Manager conduct plant inspections the following conditions shall exist:
   1. The Project Manager shall have the cooperation and assistance of the Contractor and the producer with whom the Contractor has contracted for materials.

2. The Project Manager shall have full access during scheduled production or warehousing working hours to parts of the plant that are concerned with the manufacture, production, storage, or shipping of materials being furnished.
3. The Contractor shall arrange for adequate office or working space that can reasonably be needed for conducting a plant inspection. Office or working space shall be conveniently located with respect to the plant and/or warehouse as required by the Project Manager.

D. It is understood and agreed that the Owner shall have the right to re-test, at the Owner's expense, any materials that have been tested and accepted at the source of supply after it has been delivered to the site.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 01 43 00

SECTION 01 45 16 CONTRACTOR QUALITY CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section identifies the Quality Control activities to be performed during all phases of the contract by the Contractor. Quality Control is defined as the process by which the Contractor ensures the project is constructed per the construction documents.

B. The Contractor shall have a Quality Control Program in place to ensure that all materials and work are completed in compliance with contract documents. The Contractor is solely responsible for Quality Control. The Owner reserves the right to conduct additional tests or audits to verify compliance per Division 1 section "Quality Assurance".

C. Test schedules and/or testing requirements for materials used on this project are included in the technical specifications. Laboratory and field testing identified in the technical specifications shall be conducted by an Independent Testing Agency (ITA) retained by the Contractor.

1.3 LEVEL OF CONTROL

A. The intent of this section is to enable the Contractor to establish a necessary level of control that will:
   1. Adequately provide for the production of acceptable quality materials.
   2. Provide sufficient information to ensure both the Contractor and the Project Manager that the specification requirements are being met.
   3. Allow the Contractor as much latitude as possible to develop his or her own standards of control.

1.4 SUBMITTALS

A. Refer to Division 01 Sections "Submittals" and "Shop and Working Drawings, Product Data, and Samples", for submittal requirements.

B. Quality Control Plan: Within ten (10) days after Notice to Proceed, the Contractor shall submit a Quality Control Plan for review and acceptance. Acceptance by the Project Manager does not relieve the Contractor of compliance with the contract requirements. The Contractor Quality Control Plan shall address the following as a minimum:
   1. Provide a general description of Quality Control monitoring to be performed until final acceptance by the Owner. Include monitoring activities of Work and the worksite during times no construction activity is scheduled to take place.
   2. The Contractor shall designate an employee as the Quality Control Representative, qualified to perform quality control monitoring of the Work. The designated individual shall have the authority to direct work changes required to bring the Work into

conformance with contract requirements including stopping non-conforming work in progress.

3. The Quality Control Plan shall address each technical specification division's requirements for quality control. The Contractor shall identify each item requiring submittal and approval/acceptance prior to installation of work. Also, the Contractor shall identify each item of work requiring testing by the independent testing agency.
4. The Quality Control Plan shall address and establish controls and documentation format to ensure that items or materials that have been accepted through receiving inspection are used or installed. Identification and traceability shall be provided throughout all inspections, test activities, and records. For stored items, provisions shall be made for the control of item/material identification, consistent with the expected duration and type of storage.
5. Provide a methodology of monitoring, testing, and exercising of all equipment, valves and/or assemblies to ensure the Work installed is in proper working order.

C. List of Suppliers and Subcontractors: Submit a list of suppliers and subcontractors, including items to be supplied by each supplier and/or subcontractor. Identify work to be performed by each subcontractor. The list shall be updated and resubmitted as required.

D. Emergency Contact List: Submit a list of emergency contact information including name, company, title, work phone number, mobile phone number, and other means of contact for at least four individuals.

1. Review the Emergency Contact list on a weekly basis. In the event there is any change in any of the information, the Contractor shall forward the updated list to the Project Manager.
2. The Emergency Contact list shall include the project number, project title, and date of issue.

E. Quality Control Report:

1. The Quality Control Report shall be submitted weekly or per the discretion of the Project Manager in the format detailed in Division 01 Section "Standard Forms". The report shall address as a minimum the following: identify notifications and discussions with/by other agency inspectors, identify work placed that day and any deviations and/or corrections required to bring the Work into conformance with the contract. Reporting must be digital format and signed by the Contractors Quality Control Representative. Legible, handwritten reports on the approved form shall be accepted. Scanned copies of daily reports are acceptable.
2. Submit one electronic copy of the Quality Control Report to the Project Manager the week following the work or per the discretion of the Project Manager. The report shall be signed by the Contractor's Quality Control Representative and the Contractor's Superintendent.

F. Corrective Action Report (CAR): Conditions adverse to quality will be reviewed by the Contractor and the Owner Representative to determine the cause and to recommend a corrective action that will preclude recurrence.

1. The condition, its cause, and the corrective action planned shall be reported to the Project Manager prior to implementation.
2. Follow-up action shall be taken to verify implementation of the corrective action.
3. The Contractor will document the corrective action and a copy of the Corrective Action Report (CAR) will be transmitted to the Project Manager.

1.5 DOCUMENTATION

A. The Contractor shall not change or alter approved submittals, procedures, specifications, drawings, or other pertinent documentation without the Project Manager's written authorization.

B. All records and documents that are quality related shall be prepared, identified, and maintained by the Contractor and shall be made available to the Owner upon request. Records shall be protected from damage, deterioration, or loss. A copy of the records and documents shall be always maintained at the Work site unless the Project Manager has approved other locations in writing.

C. The Contractor shall maintain records at the actual worksite and at Contractor's office to show the inspection status of materials and items installed in order to ensure that the required inspections and tests have been performed in a timely and correct manner.

1.6 INSPECTIONS AND TESTS

A. Inspections, tests, and system shut down requests, conducted by persons or agencies other than the Contractor, shall not in any way relieve the Contractor of his responsibility and obligation to meet all specifications and the referenced standards. The Contractor's designated Quality Control Representative shall inspect the work and shall ensure the work complies with the contract requirements prior to any requests for inspection or testing.

B. When the specifications, laws, ordinances, rules, regulations or orders of any public agency having jurisdiction require the Project Manager's surveillance of inspections or tests, the Contractor shall notify the Project Manager of the place, date and time forty-eight (48)-hours prior to the inspection and/or test. The Contractor shall be responsible for notifying and requesting inspection by other agencies including but not limited to the Wayne Township Fire Department, Village of Waynesville, and Warren County Water and Sewer. Prior to request for other agency inspections, the Contractor shall meet and plan inspection times with the Project Manager and or his designated representative.

C. Special inspections or tests may be required by the technical specifications, Owner, State and/or Federal Agencies in addition to those tests already performed. The Contractor shall notify the Project Manager at least forty-eight (48)- hours in advance of the additional inspections or tests.

1.7 INSPECTION PLAN

A. The Contractor shall utilize the following six-point inspection plan to ensure the conformance of the Work performed by the Contractor meets the requirements of the contract drawings and specifications, the referenced codes and standards and the approved submittals:

1. Pre-work Coordination: Prior to the start of construction work, work under each separate specification section, where a change in a construction operation is contemplated by the Contractor, and a new subcontractor starting work, a coordination meeting will be held with the Contractor's superintendent, Quality Control, and Safety representative(s), and the ITA representative. Supervisory, Safety, and Quality Control representatives of all applicable subcontractors shall also attend. The Contractor's Quality Control Representative shall chair the meeting and prepare and distribute minutes of Quality Control meetings. Meeting minutes shall be electronically distributed within twenty-four (24) hours of the meeting.

2. The purpose of the meeting is to ensure that the Contractor's personnel have no misunderstandings regarding their safety and quality procedures as well as the technical requirements of the contract. The following items shall be presented and reviewed by the Contractor:
    a. Contract requirements and specifications.
    b. Shop drawings, certifications, submittals and Record Drawings.
    c. Testing and inspection program and procedures.
    d. Contractor's Quality Control program.
    e. Familiarity and proficiency of the Contractor's and subcontractor's workforce to perform the operation to required workmanship standards including certifications of installers.
    f. Safety, security, and environmental precautions to be observed.
    g. Any other preparatory steps dependent upon the particular operation.
    h. The Contractor's means and methods for performing the Work.
3. Initial Inspection: Upon completion of a representative sample of a given feature of the Work and no later than two (2) weeks after the start of a new or changed operation, the Project Manager and/or his designated representative will meet with the Contractor's Quality Control representative and applicable subcontractor's supervisor and their Quality Control representatives to check the following items, as a minimum:
    a. Workmanship to established quality standards.
    b. Conformance to Contract Drawings, Specifications, and the accepted shop drawings.
    c. Adequacy of materials and articles utilized.
    d. Results of inspection and testing methods.
    e. Adequacy of Record Drawings maintained daily.
4. Once accepted, the representative sample will become the physical baseline by which ongoing work is compared for quality and acceptability. To the maximum practical extent, approved representative samples of work elements shall remain visible until all work in the appropriate category is complete. Acceptance of a sample does not waive or alter any contract requirements or show acceptance of any deviation from the contract not approved in writing by the Project Manager.
5. Follow-up Inspection: The Contractor's Quality Control representative will monitor the work to review the continuing conformance of the work to the workmanship standards established during the preparatory and initial inspections.
6. Completion Inspection: This is not a Substantial Completion Inspection. Forty-eight (48) hours prior to the completion of an item or segment of work and prior to covering up any work, the Contractor will notify the Project Manager who will verify that the results of the segment of work are acceptable, and all inspections and tests have been completed.
    a. The purpose of this inspection is to allow further corrective work upon, or integral to, the completed segment of work.
    b. If any items are determined to be deficient, need correction or are non-conforming, a Deficiency List will be prepared and issued to the respective Contractor for correction, repair or replacement of any deficient or non-conforming items.
    c. The Project Manager and Contractor's Quality Control representative will verify the correction of the deficient and/or non-conforming items prior to the start of the next operation.
7. Prior to requesting a Substantial Completion Inspection by the Owner, all work and operational systems to be inspected shall be satisfactorily completed and tested by the Contractor.
8. Substantial Completion Inspection will occur when the Contractor notifies the Project Manager the work is completed to the required stage and is ready for inspection. The

work shall have progressed to the point that the Owner can beneficially occupy or utilize the work. Refer to the Contract General Conditions, Article 2 “Date of Commencement and Substantial Completion Date” and Article 12 “Payments and Completion”.

9. After the Contractor receives Substantial Completion from the Project Manager, the Warranty period begins. Refer to the Contract General Conditions, Article 14 “Correction of Work”.
10. Final Acceptance will occur when the punch list items have been completed and all site clean-up has been done. Refer to the Contract General Conditions, Article 12 “Payments and Completion”.

1.8 SAMPLES

A. The Contractor shall maintain at the worksite a copy of all samples submitted and accepted by the Owner. Samples shall be made available to the designer or the Project Manager’s designated representatives for review and comparison in the field. The Project Manager must accept all items and materials prior to use on the project.

B. The installed work will be compared to the samples and if any of the work is not of the same quality, material, finish, color, texture or appearance as the sample, that portion that is not the same will be considered defective and in nonconformance.

C. Contractor selection of samples will only be considered if taken at random. The Contractor shall permit Owner Representatives to witness the selection of samples. Inspection or tests of items or materials that fail shall be sufficient cause to terminate further inspections/tests of the same brand, make or source of that product.

D. The Contractor is obligated to correct any item deemed deficient.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REQUIREMENTS

A. The Contractor is responsible for Quality Control of the Construction. All acquisition of materials, sequence of construction (except as otherwise indicated), and means and methods of construction shall be the responsibility of the Contractor. Establish system to perform sufficient inspection and tests of all items of work, including that of subcontractors, to ensure conformance to Contract Documents for materials, workmanship, construction, finish, functional performance and identification.

1. Control System: Establish for all construction except where Contract Documents provide for specific compliance tests by testing laboratories and engineers employed by the Owner.
2. Control System: Specifically include all testing required by various sections of Specifications.
3. Quality Control System: Means by which Contractor assures himself that construction complies with requirements of Contract Documents.
    a. Controls: Adequate to cover all construction operations and keyed to proposed construction schedule.

B. All materials required for the contract shall be new except where specified otherwise. The Project Manager may elect to perform additional inspections and/or tests at the place of the manufacture, the shipping point or at the destination to verify conformance to applicable specifications. Inspections and tests performed by the Owner shall not relieve the Contractor from the responsibility to meet the specifications, nor shall such inspections/tests be considered a guarantee for acceptance of materials that will be delivered at a later time.

C. The Contractor is obligated to correct or remove non-conforming materials, whether in place or not. If necessary, the Project Manager will send written notification to the Contractor to correct or remove the defective materials from the project. If the Contractor fails to respond, the Project Manager may order correction, removal and/or replacement of defective materials by others, in which case the Contractor shall bear all costs incurred by such actions.

D. Materials accepted on the basis of a Certificate of Compliance may be sampled and inspected and/or tested by the Project Manager or his/her Designer at any time. The fact that the materials were accepted on the basis of such certification shall not relieve the Contractor of his responsibility to use materials that conform to the specifications.

E. The Contractor shall impose upon his suppliers the same quality control requirements, including inspection and test procedures, as imposed upon him by the specifications and referenced standards. The Contractor shall apply appropriate controls, designed to ensure that all materials supplied meet the requirements and specifications.

3.2 CONTRACTOR'S QUALITY CONTROL SYSTEM

A. The Contractor shall be responsible for assuring compliance with the quality standards as indicated in the Contract Documents. In addition, the Contractor shall be responsible for:
   1. Review of submittals prior to their being forwarded to the Project Manager for review. The Contractor shall mark submittals with comments and shall indicate the date and party conducting the Contractor's review of each submittal.
   2. Final inspection of the project prior to calling for the Project Manager to conduct a final inspection. The Contractor shall provide his inspection comments to the Project Manager prior to the scheduled final inspection.
   3. Verification of completion of punch-list items prior to calling for verification inspection by the Project Manager.

B. Records: Maintain correct records on appropriate forms for all inspections and tests performed, instructions received from the Project Manager and actions taken as result of those instructions.
   1. Records: Include evidence that required inspections or tests have been performed (including type and number of inspections or tests, nature of defects, causes for rejection, etc.) proposed or directed remedial action, and corrective action taken.
   2. Document inspections and tests as required by each section of the Specifications.

3.3 MATERIAL AND WORKMANSHIP

A. Unless otherwise specified, or indicated on the Drawings, material shall be new, of best quality, and without flaws, and delivered upon completion in an undamaged condition.

B. Workmanship shall be the best of its respective kind. Labor shall be performed in a thorough workmanlike manner by qualified, efficient, and skilled mechanics, acceptable to the Project

Manager, and other trades involved on the job requiring acceptable substrate for the performance of their work.

3.4 TESTING – GENERAL

A. Testing Laboratory and/or Engineering services are required for quality control in portions of the work identified in other sections of these specifications.

B. Tests required by these Specifications shall be performed in strict accordance with referenced testing methods, procedures, and conditions. Pertinent data shall be included in clear, comprehensive written forms according to the requirements of these Contract Documents.

C. Contractor: Provide equipment and facilities as required for testing at no additional cost, subject to Project Manager's review, for conducting field tests and for collecting and forwarding samples.
   1. Do not use materials or equipment represented by samples until tests, if required, have been made and materials or equipment found to be acceptable.
   2. Do not incorporate any product into work which becomes unfit for use after acceptance thereof.

D. Testing: Materials or equipment proposed to be used may be tested at any time during their preparation or use. Furnish required samples without charge and give sufficient notice of placing of orders to permit testing. Products may be sampled either prior to shipment or after being received at site of work.

E. Tests: Made by testing laboratory approved by the Project Manager. Except as otherwise provided, sampling and testing of materials and laboratory methods and testing equipment shall be in accordance with latest standards and tentative methods of ASTM.
   1. Specific information concerning testing methods, sample sizes, etc., is included under applicable sections of Specifications.
   2. Any modification of, or elaboration on, these test procedures included for specific materials under their respective sections in Specifications shall take precedence over these procedures.

3.5 OTHER TESTING

A. Following Testing: Performed at expense of Contractor:
   1. Any additional tests required because of any tests that fail subject to following conditions:
      a. Quantity and Nature of Tests: Determined by the Project Manager.
      b. Tests: Taken in presence of the Owner and/or the Project Manager.
      c. Proof of Noncompliance: Contractor liable for corrective action which the Project Manager feels is required including complete removal and replacement of defective material.
   2. Material Substitution: Any tests of material or equipment offered as substitute for specified item on which test may be required in order to prove its compliance with the Contract Documents.

B. Contractor: May have tests performed on material and equipment for his own information and job control so long as the Owner does not assume responsibility for costs or for giving them consideration when appraising quality of materials.

3.6 EQUIPMENT TESTING

A. Equipment testing shall be as determined appropriate by the Project Manager to assure proper performance according to the manufacturer's specifications for each equipment item.

B. After all utility connections to equipment have been completed, the Contractor shall conduct final tests of equipment in presence of the Owner and Project Manager.

C. Unless waived in writing by the Project Manager, the requirements of this section shall apply to all installed equipment items having utility connections.

3.7 NOTIFICATION

A. The Contractor shall be responsible for notifying the Project Manager at least 3 working days prior to commencing work which is identified as requiring testing.

B. The Contractor shall be responsible for scheduling and coordinating all required testing with the Project Manager and, when required by the Owner's Agents, the Owner's Independent Testing Agency.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 01 45 16

SECTION 01 50 00 TEMPORARY FACILITIES

PART 1 - GENERAL IF NEEDED

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for furnishing, installing, operating, maintaining, and removing temporary construction fences, barriers, enclosures, and field facilities including the Contractor's construction offices, staging areas, yards, storage areas, electrical power, telephone, water, fire protection, sanitary service.

B. Construction Field Office, Yards, and Storage Areas:

1. Temporary facilities which the Contractor desires to locate in staging areas adjacent to the Work or within the project limits are subject to approval by the Project Manager.

1.3 UTILITY AND FIRE SERVICES

A. Electrical Service:
1. The Contractor shall incur all costs of temporary electric service permits, fees and deposits required by the governing authorities, and connection charges and temporary easements including installation, maintenance, and removal of equipment.

B. Water Service:
1. The Contractor shall make all connections and extensions required and shall make use of water in direct support of the Work.
2. The Contractor shall install an approved water tap at the local water source prior to obtaining any water.
3. The Contractor shall arrange and pay for its supply/distribution system from the local point of connection. The location and alignment of the Contractor's temporary supply/distribution system must be approved by the Project Manager prior to its installation.
4. The Contractor shall leave in place all above ground and underground water distribution facilities unless otherwise directed by the Project Manager.
5. The Contractor shall not use in-place fire hydrants or standpipes as sources for construction water or potable water.
6. The Contractor shall incur all costs of temporary water service permits, fees and deposits required by the governing authorities, and connection charges and temporary easements including installation, maintenance, and removal of equipment.

C. Sanitary Service:
1. Furnish, install, and maintain temporary sanitary facilities and services throughout the construction period.
2. Ensure that separate or single user toilets shall be provided to ensure privacy between the sexes.

3. Provide general washing facilities adequate for the number of employees.
4. Provide special washing facilities adequate for the number of employees engaged in the application of paints, coating and other volatile or hazardous materials.

D. Fire Protection:
1. In accordance with the Site Safety Plan, Contractor shall furnish, install, and maintain temporary portable fire protection equipment throughout the construction period at all buildings (including the project site), maintenance shops, and fuel storage on all large construction equipment and at the location of any flammable materials or construction materials.

1.4 SUBMITTALS

A. Refer to Division 01 Sections “Submittals” and “Shop and Working Drawings, Product Data, and Samples” for submittal procedures.

B. Submit a shop drawing within five (5) days of the Notice to Proceed that shows the following:
1. Temporary facilities equipment and materials (include manufacturer’s literature).
2. Details and layout of temporary installations including fences, visual fence screens, roads, utilities, parking, buildings, storage areas and drainage plans.
3. Lighting plan showing temporary lighting facilities, electrical service panel location, electrical circuit diagram and anticipated light level on the working roadway, pathway, or construction surface.

PART 2 - PRODUCTS

2.1 ELECTRICAL SERVICE

A. Provide temporary power and lighting equipment consisting of fixtures, transformers, panel boards, groundings, lamps, switches, poles, conduits and wiring sized and capable of continuous service and having adequate capacity to ensure a complete operating system. Comply with NEMA.

B. Provide temporary extension cords to supply tools not longer than two-hundred feet (200’), except that additional length may be used if equipment will be grounded within two-hundred feet (200’) of tool or power.

C. Portable power generators shall be grounded.

2.2 FIRE PROTECTION

A. Fire extinguishers shall be UL rated and shall comply with the current local fire code.

2.3 SANITARY SERVICE

A. Provide materials and equipment adequate for the intended purposes, which will neither create unsanitary conditions nor violate the codes applicable to temporary sanitary facilities. Enclosures for toilet and washing facilities shall be weatherproof, sight proof, ventilated and sturdy.

B. Provide portable type toilet facilities that satisfy the requirements of OSHA.

C. Provide washing facilities as needed. Furnish soap, single-service paper towels, towel dispenser and towel receptacle. If paints, coatings and other volatile or hazardous materials injurious to humans will be applied as part of the contract, provide washing facilities with warm water of approximately one hundred twenty degrees (120°) F.

PART 3 - EXECUTION

3.1 ELECTRICAL SERVICE

A. The approximate location of primary power lines is shown on the Construction Drawings. The Contractor shall locate electrical service where it will not interfere with equipment, storage spaces, traffic, and prosecution of the Work or the work of others. Installation shall present a neat and orderly appearance and shall be structurally sound. Maintain service in a manner that will ensure continuous electrical service and safe working conditions.

3.2 FIRE PROTECTION

A. Install products in conformance with the requirements of the applicable Washington Township Fire Department and OSHA regulations.
   1. Provide functional fire extinguishers that are clearly identified for fire and an accessible supply of water during the period of construction. These fire extinguishers shall remain in place until permanent fire protection systems are functional.
   2. Furnish not less than one (1) twenty (20) pound fire extinguisher, type 2A-20ABC within ten feet of cutting and welding operations.
   3. Provide twenty (20) pound fire extinguishers, type 2A-20ABC no further than one hundred feet (100') apart in buildings.
   4. Provide not less than one (1) twenty (20) pound fire extinguisher, type 2A-20ABC on any equipment of seventy-five (75) horsepower or more.

B. Fire protection equipment shall be placed in easily accessible locations throughout the construction site. The Contractor shall instruct construction personnel as to location and use of temporary fire protection equipment.

C. Fire extinguishers shall be located for easy access. Their location shall be clearly marked so that they can be seen at least seventy-five feet (75') away.

3.3 SANITARY SERVICE

A. Place temporary sanitary (and washing) facilities within the limits of the work and convenient to the workstations. Make these facilities structurally and mechanically sound. Modify, relocate, and extend the facilities as required by progress of the work.

B. Service toilets at those time intervals which will minimize the accumulation of wastes and prevent creation of unsanitary conditions, but not less frequent than once per week.

C. The waste from the sanitary and wash facilities shall be disposed of in accordance with all applicable rules, regulations, and laws and with the least environmental impact.

3.4 TEMPORARY CONSTRUCTION FENCING

A. Contractor shall install temporary construction fencing using six (6) foot tall minimum height chain-link fence panels designed to meet minimum standards for stability. Contractor shall provide a main vehicular access gate that is stable, operable, and lockable. A combination lock code or key must be provided to the Project Manager and Operations Staff for access to the site. All fencing must be maintained and kept in good working order for the duration of the Project.

B. Contractor shall contact all utility service companies prior to finalizing fence location and post locations for certification of current utilities and confirm location of irrigation system with field staff. Prior to any soil disturbance, Contactor shall locate pothole post locations planned within five (5) feet of known utilities. Contractor shall submit fencing plan and typical details to Project Manager at least seven days before planned execution for review and acceptance.

C. Contractor is responsible for all maintenance within the temporary construction fencing area including, but not limited to, mowing, watering, and tree protection zones.

3.5 SIGNS

A. All signs must be approved by the Project Manager prior to installation.

3.6 QUALITY CONTROL

A. Provide products for, and the execution of, the Work of this Section that will satisfy the requirements of the NEC, OSHA, and local codes. Provide products that satisfy requirements of NEMA and are UL listed.

3.7 REMOVAL

A. The Contractor shall locate all temporary facilities including the underground utilities, so they can be completely removed without damaging permanent work or the worksite of other contractors. All temporary facilities shall be removed in a timely manner following Substantial Completion of the Project or per the direction of the Project Manager.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 01 50 00

SECTION 01 56 39 TREE RETENTION AND PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions, and Division 01 Specification Sections apply to this Section.

1.2 SUMMARY

A. This section consists of retention and protection of trees during the construction of the project.

B. Related Sections:
1. Division 31 Section “Clearing and Grubbing”.
2. Division 31 Section “Earth Moving”
3. Division 31 Section “Watering”.
4. Division 32 Section “Irrigation System”.
5. Division 32 Section “Automatic Irrigation Controllers”
6. Division 32 Section “Soil Preparation”.
7. Division 32 Section “Topsoil”.
8. Division 32 Section “Trees, Plants, and Groundcovers”.
9. Division 32 Section “Landscape Maintenance”.

1.3 DEFINITIONS AND REFERENCE STANDARDS

A. Drip Line: The perimeter of a tree’s spread measured to the outermost tips of the branches and extending downward to the ground.

B. Project Consulting Arborist: An independent consultant with a degree in forestry, horticulture, or arboriculture, an American Society of Consulting Arborists (ASCA) registered consulting arborist, an International Society of Arboriculture (ISA) Certified Arborist, and / or a consultant with at least five years (5) field experience in tree preservation or on-site monitoring of public works or construction projects involving tree retention and protection.

C. Tree Survey: An inventory of all trees on a lot or project before construction, alteration or excavation activity occurs identifying species, location, caliper, and drip line of trees. In the case of tree stands 600 square feet or larger in area and with 75% or greater branch coverage of the ground surface, the location of the outer boundary of the drip line of the tree stands with a listing of the predominant species and caliper is often substituted for a detailed inventory.

D. Tree Protection Zone (TPZ): The Tree Protection Zone is the area above and below grade around each tree where construction activities are limited or restricted to prevent injury to preserved trees.
1. The diameter of the tree shall be measured at four and one-half feet (4.5’) above grade (referred to as diameter breast height). For every-one inch (1”) of tree diameter the Tree Protection Zone shall extend one and one-half feet (1.5’) radially from the base of the trunk.

2. For areas with groups or groupings of trees, if the distance between trees is less than thirty feet (30’), the Tree Protection Zone may be combined and treated as one contiguous Tree Planting Zone to create a more clearly defined and manageable Tree Protection Zone.

1.4 SUBMITTALS

A. All Submittals shall be approved by the Project Manager.

B. Tree Protection Plan: Submit a tree protection plan based on the contract drawings for approval. The tree protection plan shall include the following:
   1. Existing conditions.
   2. Tree size and location of dripline.
   3. Tree Protection Zones with Tree Protection Zone sign locations.
      a. Tree protection fencing (chain link / orange plastic safety) shall correspond to level of construction activity adjacent to protected tree(s). Including but not limited to areas of high traffic, material drop off/pickup, high intensity activity, and earthwork of greater intensity than grubbing.
   4. Access Routes, including designated routes for equipment and foot traffic by work crews to minimize soil compaction.
   5. Material storage.
   6. Limits of construction.
   7. Proposed exploratory excavation locations for tree root exploration within the Tree Protection Zone and proposed methods.

C. Work Plan: Where work is proposed within a Tree Protection Zone, the Contractor shall submit a plan on how the work within these areas will be accomplished for approval including exploratory trenching.

D. Pruning: Proposed methods, materials, certified licensed arborist, and schedule for root pruning, branch pruning, and other tree maintenance shall be submitted for approval.

E. Construction Schedule: The Contractor shall submit a construction schedule which includes a time frame for work near existing trees and plants. Approval shall be obtained prior to commencement of construction near Tree Protection Zones.

F. Maintenance Schedule: The Contractor shall submit a maintenance schedule for approval.

G. Watering Plan and Schedule: The Contractor shall submit a watering plan and schedule prior to the start of work that details watering of all trees affected by the Project for approval. The below information shall be included:
   1. Area of the project site to be watered and how watering will be phased based on construction.
   2. Location, site identification number, and caliper inch of each tree to be watered
   3. Number of trees to be watered and total caliper inches. Identify the amount of water to be applied based on total caliper inches.
   4. Schedule for watering during the duration of the project.

H. Watering Log: The Contractor shall submit a tree watering log that provides the following information:

1. Tree(s) watered, identified by the site identification number.
2. Number of gallons of water applied to each tree during every watering period.
3. oil moisture level readings, on a scale of one to ten (1 – 10) throughout the Tree Protection Zone for each tree.
4. Dates of each watering.
5. The watering log shall be reviewed monthly at Construction Progress Meetings prior to the submittal of Pay Applications.

1.5 QUALITY CONTROL

A. Contractor shall comply with applicable requirements and recommendations of the most current versions of the following standards and guidelines. Where these conflict with other specified requirements, the more restrictive requirements shall govern.
1. ANSI Z133.1: American National Standard for Tree Care Operations.
2. ANSI A300: Tree, Shrub, and Other Woody Plant Management – Standard Practices.
3. Guide for Plant Appraisal – Current Edition: Authored by the Council of Tree and Landscape Appraisers; published by the International Society of Arboriculture.

B. The Project Manager shall be responsible for ensuring that all construction activities are in compliance with established standards for protection, removal, maintenance, and planting of trees with the goal of promoting the health, safety, welfare, and quality of life of the residents of the Owner through the development of a sustainable community forest and, specifically, the preservation of trees.

C. At its discretion, the Owner may hire a Project Consulting Arborist to conduct daily observation of the Contractor's field crews during the critical phases of the project, such as: demolition of existing concrete, root pruning, construction of retaining walls, irrigation, and construction of new curb or sidewalk in Tree Protection Zones.

D. Motorized equipment and trailers, including but not limited to tractors, skid loaders, bulldozers, rubber-tired excavators, tracked excavators, trucks, cars, and carts shall not be allowed access within Tree Protection Zones. Should access be necessary within designated Tree Protection Zones the Project Manager shall be notified and shall approve of the access route and driving surface prior to its use.

E. Materials, supplies, tools, and construction facilities shall not be stockpiled or stored within the Tree Protection Zones unless otherwise approved by the Project Manager. Should temporary storage be approved by the Project Manager within designated Tree Protection Zone(s), the existing grade shall be covered with plywood as identified in Part 3 – Execution to help distribute the weight of equipment and to minimize soil compaction and rutting. Plywood and/or mulch are not acceptable bridging materials for driving over exposed tree roots.

F. Under no circumstances shall any objects or materials be leaned against or supported by a tree's trunk, branches, or exposed roots. The attachment or installation of any sign, cable, wire, nail, swing, or any other material to trees that is not needed to help support the natural structure of the tree is prohibited. Standard arboricultural techniques such as bracing or cabling that are performed by professional arborists are acceptable upon approval of the Project Manager.

PART 2 - PRODUCTS

2.1 TREE PROTECTION FENCE

A. Orange plastic safety fencing – minimum of forty-eight inches (48”) in height, heavy duty T-posts.
   1. Twelve (12) gauge wire.

B. Galvanized Chain-link – Six feet (6’) in height. Steel chain link fence panels or rolls are acceptable.

C. Tree Protection Zone signs laminated by the Contractor. Contractor to coordinate sign requirements with the Project Manager.

PART 3 - EXECUTION

3.1 EXAMINATION

A. The Contractor shall follow approved work plans and access routes.

B. If it appears any work may cause damage to a tree, the Contractor shall contact the Project Manager. The Project Manager will make the determination as to whether such damage is likely, and pruning is necessary.

C. Methods for working within a Tree Protection Zone shall be approved prior to the start of work and may include the following depending on project site conditions:
   1. Compressed air excavation tool. Maximum pressure eighty pounds per square inch (80 PSI). Compressed air excavation may not be allowed when in known asbestos areas.
   2. Water excavation. Maximum pressure sixty pounds per square inch (60 PSI). Water excavation may be required when in known asbestos areas.
   3. Directional boring.
   4. Hand digging.
   5. Other methods approved by the Owner.

3.2 TREE PROTECTION FENCING

A. Tree protection fence shall be installed and approved by the Project Manager prior to any site activity and shall remain in place and maintained in the condition in which it was approved until removal is authorized by the Project Manager.

B. Tree protection fencing shall be installed one foot (1’) behind the existing or proposed hardscape.

C. Tree protection fences shall be constructed as follows (Or as approved by Project Manager):
   1. Fencing shall be installed to surround the trees within the limit(s) of work.
   2. Chain link fencing is required where heavy construction activity is adjacent to existing trees, where Heritage trees are located, or as required on the plans.
      a. Chain link fence shall have posts installed no less than ten feet (10’) on center, at a depth of twenty-four inches (24”) minimum.
      b. Installation of the posts shall not result in injury to tree above or below ground.

3. Orange plastic safety fencing is required as shown in the plans or as directed by the Project Manager.
    a. The fencing shall be secured to metal t-posts with twelve-gauge (12) wire woven through the top of fencing along the entire length.
    b. Heavy duty t-posts shall be placed every eight feet (8') so that wire and fence are taut.
    c. Installation of the posts shall not result in injury to the tree above or below ground.

D. Fines: A fine of two thousand five hundred dollars ($2,500.00) will be levied against the Contractor or any Sub-contractor for each violation of the Tree Protection Zones and/or damage. This includes fencing not maintained as originally approved by the Project Manager, and any encroachment within the designated Tree Protection Zones. This fine shall be independent of any applicable damage penalty for the appraised value of the tree(s).

3.3 TREE PROTECTION SIGNS

A. A tree protection sign shall be placed one (1) per each Tree Protection Zone, minimum, or per the direction of the Project Manager.
    1. The Contractor shall print and laminate eleven by seventeen-inch (11"x17") size tree protection signs.
        a. The Contractor shall use zip ties on all four (4) corners of the signs to attach to the tree protection fencing.
        b. The tree protection signs shall be replaced within twenty-four (24) hours if they become unreadable, destroyed, missing or per the direction of the Project Manager.

3.4 DEMOLITION

A. Caution shall be used during removal of existing street, curb, gutter, sidewalk, drain inlets, and other concrete and asphalt demolition, to minimize injury to tree root systems. The following procedures are acceptable when removing existing concrete.
    1. Breaking of the existing concrete and asphalt for removal shall be done in a manner that will minimize ground disturbance and vibration.
    2. Curbs and sidewalks within designated Tree Protection Zones shall be removed in a manner approved by the Project Manager. When removing existing sidewalks and curbs, care shall be taken to avoid injury to roots located under, over, or adjacent to paved surfaces.
    3. In instances where roots and root-trunk flares are growing over hardscape, caution shall be used to minimize damage during breaking of hardscape and removal of debris. Wood and bark tissues shall not be injured by equipment. The Contractor shall discuss methods and submit for approval from the Project Manager prior to demolition.
    4. Motorized equipment and trailers, including but not limited to tractors, skid steers, bulldozers, rubber-tired excavators, tracked excavators, trucks, cars, and carts are limited to existing paved areas only and access must be approved by the Project Manager prior to entrance into the Tree Protection Zones.
    5. All excavation and debris material shall be hauled off or deposited outside of the Tree Protection Zones. At no time shall material be stored, even temporarily, within the Tree Protection Zones.

3.5 CONSTRUCTION IN TREE PROTECTION ZONES

A. The Contractor shall protect all trees from injury due to construction related work. All injuries to trees and shall be mitigated to the satisfaction of the Project Manager, and, if appropriate in accordance with guidelines established in the "Guide for Plant Appraisal". Refer to Article 3.9 – Injuries to Existing Plans – Damage Penalties. All costs of such mitigating shall be charged to and paid by the Contractor or offending Sub-contractor.

B. If access within designated Tree Protection Zones are approved by the Project Manager, the existing grade shall be covered with twelve inches (12") of wood mulch and overtopped by three-quarter inch (3/4") plywood with overlapping sheets, six-inches (6") minimum, to help distribute the weight of equipment and to minimize soil compaction and rutting.

C. The following procedures shall be used when constructing any hardscape or drainage improvements:
   1. All materials and equipment shall be kept on existing hardscape or within approved, compacted sub-base areas.
   2. Construct new sidewalks on, or above, the existing grade instead of excavating into root zones. The new grade shall not interfere with sheet-flow drainage.
   3. Protect exposed roots from damage and contamination by stabilization materials and concrete.
   4. Locate concrete washouts outside of and away from Tree Protection Zones. Washout runoff shall be strictly contained within the washout area and shall not flow into Tree Protection Zones or proposed new planting areas.
   5. When excavating, excavated soil shall be deposited in trucks and hauled off or deposited temporarily on three quarter inch (3/4") thick plywood outside the Tree Protection Zones. Excavated and fill soil shall not be deposited, even temporarily, in Tree Protection Zones.
   6. If root pruning is needed, refer to Root Pruning section.

D. Where possible, construction shall be relocated to prevent damage to existing roots. Where relocation is not possible, hardscape shall be constructed in a manner with the least amount of impact/damage to roots.

E. The compaction of sub soil within Tree Protection Zones shall not exceed eighty percent (80%) proctor density, unless the Contractor can confirm by testing that the existing compaction within the Tree protection zones already exceeds eighty percent (80%).

F. Tree roots will continue to slowly add girth every year, therefore the base material shall be malleable (e.g. suitable subgrade aggregates, crushed granite, or compacted sand) to prevent a fulcrum or pressure point which can cause cracking or heaving.

G. Provide for easier future hardscape correction where a root may cause raising, buckling, or cracking. Install an expansion joint on either side of the root or by scoring the concrete on either side of the root to allow that particular section to be broken out and replaced.

H. Grading within the Tree Protection Zones shall be performed by hand or a method approved by the Project Manager. Any fill material that needs to be placed in the Tree Protection Zone shall be limited to a maximum of one inch (1") of fill material over the area. Fill should consist of sandy loam topsoil. Clay soils shall not be used as fill. When using fill soil, the existing surface to receive fill should be scarified by hand, while avoiding root damage, to a maximum depth of one inch (1") from the finished grade prior to placing fill material, to ensure proper

incorporation of fill material. Any filling operation should not occur during water saturated soil conditions.

I. Concrete or chemicals spilled within Tree Protection Zones shall be completely removed at the time of the spill. Contaminated soil shall be completely removed by hand and/or approved methods to minimize disturbance to root systems. Approved soil shall be added as necessary to restore the grade. Contact the Project Manager immediately in the event of a spill within a Tree Protection Zone

3.6 TRENCHING

A. Trenching approved by the Project Manager within Tree Protection Zones shall be dug by hand, pneumatic excavation, or directional boring.

B. Whenever trenching exposes roots, as called out in section “Root Pruning”, extending through the trench wall, the Contractor shall contact the Project Manager immediately for inspection and evaluation. Refer to section “Root Pruning”.

C. Directional Boring: Bore shall be thirty-six inches (36”) below grade, minimum, unless otherwise approved by the Project Manager. The bore shall have a locator to measure and maintain depth. The Contractor shall verify depth is accurate with the Project Manager.

3.7 IRRIGATION OR UTILITY INSTALLATION

A. All Excavation, Irrigation, or Utility installation occurring within the Tree Protection Zones as indicated on the Contract Documents shall be marked out in the field and methods approved by the Project Manager prior to installation.

3.8 BRANCH PRUNING

A. Shall be only done with approval from and at the direction of the Project Manager.

B. ROOT PRUNING
1. Root pruning shall be in accordance with ANSI A300 Root Management Standard latest edition and in accordance with Best Management Practices
2. Tree roots shall not be pruned or cut unless their removal is unavoidable. The Project Manager shall be notified prior to any work operation known or suspected to involve cutting of roots one half inch (1/2”) or greater.
3. All roots needing to be pruned or removed shall be cut cleanly with sharp hand tools, with oversight by the Project Manager. No wound dressings shall be used. Backfill shall promptly be installed over the exposed roots, filling all voids.
4. Recommended root pruning tools shall be free of defects and have sharp cutting edges
   a. Scissor-type lopper.
   b. Scissor-type pruner.
   c. Pruning saws designed specifically for tree work.
5. After root-pruning, cover exposed roots within thirty (30) minutes to minimize desiccation. Roots may be covered with soil, mulch, or moistened burlap, and shall be kept moist until the final grade is established
6. Where appropriate, and under the direction of the Project Manager, root restricting barriers can be installed in accordance with manufacturer’s recommendations.

C. SURFACE AND EXPOSED ROOTS
1. When encountered, exposed roots shall be worked around in a manner that does not damage the outer layer of the root surface or bark.
2. Exposed tree roots shall not be driven over. Plywood and/or mulch are not acceptable bridging materials for driving over exposed tree roots.
3. During excavation work, notify the Project Manager should tree roots become exposed.

3.9 PROJECT SITE MONITORING

A. The Contractor is responsible for monitoring and maintaining Tree Protection Zones throughout the duration of the Project until removal of the tree protection fencing is approved by the Project Manager.

B. Tree Protection Zone documentation shall be reviewed and discussed at weekly Construction Progress Meetings.

3.10 INJURIES TO EXISTING PLANTS - DAMAGE PENALTIES

A. Any plants designated as requiring retention or protection that are partially injured or lost due to Contractor neglect or improper construction activities shall be replaced by contractor or corrected as approved by the Project Manager.

B. Tree Appraisal: All trees that are damaged during construction will be evaluated and appraised.
1. Documentation for appraisals will consist of:
a. Measurement of plant size.
b. Identification by common and botanical names.
c. Current condition prior to damage or injury (overall health, injuries, overt hazard status, etc.).
d. Location factors as described in the most current addition of “Guide for Plant Appraisal”. Photographs may be taken of certain trees and to document debilitating condition factors.

3.11 TREE MAINTENANCE DURING CONSTRUCTION

A. Tree Maintenance: Proper maintenance shall include, but not be limited to, structural and remedial pruning, watering, mulching, remediating soil compaction, fertilization, insect and disease control, soil and tissue analysis, and aeration.
1. Tree Watering during construction shall consist of the following minimum requirements for all trees within a Tree Protection Zone:
a. Watering of trees shall occur throughout the year during construction.
b. Minimum watering requirements shall be twenty-five (25) gallons of water per caliper inch of every tree with an equal application of water throughout the Tree Protection Zone when daytime temperatures are at or above forty degrees (40°) F.
c. Watering frequency shall be based on the average soil moisture level throughout the Tree Protection Zone.
1) An average of six (6) “Average” on a soil moisture meter shall be maintained during the duration of Construction.
2) Readings shall be taken every two (2) weeks at a minimum during the Construction period and at a minimum of four (4) locations throughout the Tree Protection Zone.
3) Readings shall be taken at a depth of twelve inches (12”).

4) All readings, locations, and dates of each shall be recorded and provided to the Project Manager every month and prior to any pay application being approved for payment.

d. Depending on weather conditions the Project Manager may approve less frequent watering.

B. The timing duration and frequency of necessary maintenance practices should be determined and approved by the Project Manager, based on factors associated with the site and affected plants.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Measurement will be based on the percentage complete for the lump sum contract amount for Tree Retention and Protection.

4.2 PAYMENT

A. Payment will be made at the lump sum contract price, and shall include required materials, transportation, equipment, and labor, and all other items required to establish tree protection and remove the tree protection at the end of the project as required in accordance with the Contract Drawings and Specifications. Payment will also include the maintenance of the tree protection throughout the duration of the project as well as the labor, materials equipment and all other items required to restore the site to its original condition at the completion of the project.

END OF SECTION 01 56 39

SECTION 01 57 13 EROSION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions, and Division 01 Specification Sections apply to this Section.

1.2 SUMMARY

A. This section consists of requirements for the installation and maintenance of erosion and sedimentation prevention and protection measures during the construction of the project from just prior to the start of earth disturbance until final site stabilization. The cost of maintaining, repairing, and/or replacement of damaged BMP's will be at the Contractors expense.

PART 2 - PRODUCTS

2.1 Refer to Warren County Water and Sewer Department.

PART 3 - EXECUTION

3.1 Refer to Warren County Water and Sewer Department.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Measurement will be based on the percentage complete for the lump sum contract amount for Erosion and Sedimentation Control.

4.2 PAYMENT

Payment will be made at the lump sum contract price, and shall include required materials, transportation, equipment, labor, excavation, stockpiling, disposing, hauling off, watering, dust control, and all other items as required in accordance with the Contract Drawings and Specifications. The contract price shall include all material, labor and equipment required to establish and maintain specified erosion and sedimentation controls prior to and during construction. The contract price shall include removal of erosion and sedimentation controls after final stabilization.

END OF SECTION 01 57 13

SECTION 01 60 00 MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions, and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements governing the Contractor's selection of products for use in the project.

1.3 DEFINITIONS

A. Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties", "systems", "structure", "finishes", "accessories", and similar terms. Such terms are self-explanatory and have well-recognized meanings in the construction industry.
   1. Products: Are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "Product" includes the terms "material", "equipment", "system" and terms of similar intent.
   2. Named Products: Are items identified by manufacturer's product name, including make or model designation, indicated in the manufacturer's published product literature that is current as of the date of the Contract Documents.
   3. Materials: Are products that are substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
   4. Equipment: Is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.

1.4 SUBMITTALS

A. Product List: A list of products is included in each appropriate specification division. Prepare a schedule in tabular form showing each product listed. Include the manufacturer's name and proprietary product names for each item listed.
   1. Coordinate product list with the Contractor's Construction Schedule and the Schedule of Submittals.
   2. Form: Prepare product list with information on each item tabulated under the following column headings:
      a. Related Specification Section number.
      b. Generic name used in Contract Documents.
      c. Proprietary name, model number, and similar designations.
      d. Manufacturer's name and address.
      e. Supplier's name and address.
      f. Installer's name and address.
      g. Projected delivery date or time span of delivery period.

3. Initial Submittal: Within thirty (30) days after date of commencement of the Work, submit three (3) copies of an initial product list. Provide a written explanation for omissions of data and for known variations from Contract requirements.
4. Completed List: Within sixty (60) days after date of commencement of the Work, submit three (3) copies of the completed product list. Provide a written explanation for omissions of data and for known variation from Contract requirements.
5. Action: The Project Manager will respond in writing to Contractor within ten (10) working days or receipt of the completed product list. No response within this period constitutes no objection to listed manufacturers or products but does not constitute a waiver of the requirement that products comply with Contract Documents. The Project Manager's response will include a list of unacceptable product selections, containing a brief explanation of reasons for this action.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.
1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to assure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to the site in an undamaged condition in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
5. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
6. Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

1.6 GENERAL PRODUCT REQUIREMENTS

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, new at the time of installation.
1. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and the intended use and effect.
2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

B. It is the responsibility of the Contractor and his installers, as experts, to notify the Project Manager of any specified product that to his knowledge will not meet the requirements or is unsuited to the application indicated or specified.

C. The use of manufacturers and trade names is intended only to establish standards of quality and performance and not to limit competition.

D. Substitution of Materials and Equipment: All bids are to be based on those materials and equipment specified in the Contract Documents. Substitutions after the bid will be made in

accordance with the provisions of General Contract Conditions Article 406 “Substitution of Materials and Equipment”, and Division 01 Section “Substitutions”.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. The Contract Documents and governing regulations govern product selection. Procedure governing product selection include the following:
   1. Proprietary Specification Requirements: Where Specifications name only a single product or manufacturer, provide the product indicated. No substitutions will be permitted.
   2. Semi-proprietary Specification Requirements:
      a. Where Specifications name two or more products or manufacturers, provide one (1) of the products indicated. No substitutions will be permitted.
      b. Where Specifications specify products or manufacturers by name, accompanied by the term “or equal” or “or approved equal,” comply with the Contract Document provisions concerning “substitutions” to obtain approval for use of an unnamed product.
   3. Non-proprietary Specifications: When Specifications list products or manufacturers that are available and may be incorporated in the work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning “substitutions” to obtain approval for use of an unnamed product.
   4. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
   5. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements and are recommended by the manufacturer for the application indicated. Manufacturer’s recommendations may be contained in published product literature or by the Manufacturer’s Certification of Performance.
   6. Compliance with Standards, Codes and Regulations: Where Specifications only require compliance with an imposed code, standard, or regulation, select a product that complies with the standards, codes, or regulations specified.
   7. Visual Matching:
      a. Where Specifications require matching an established Sample, the Project Manager’s decision will be final on whether a proposed product matches satisfactorily.
      b. Where no product available within the specified category matches satisfactorily and complies with other specified requirements, comply with provisions of the Contract Documents concerning “substitutions” for selection of a matching product in another product category.
   8. Visual Selection: Where specified product requirements include the phase “...as selected from manufacturer’s standard colors, patterns, textures...” or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Project Manager will select the color, pattern, and texture from the product line selected.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS

A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other work. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

3.2 QUALITY ASSURANCE

A. Source Limitations:
   1. To the fullest extent possible, provide products of the same kind from a single source.
   2. Substitutions to the specified products will only be allowed in accordance with General Contract Conditions Article 8 "Contractor", and Division 01 Section "Substitutions".

B. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturers or producer's nameplates or trademarks on surfaces of products that will be exposed to view in occupied spaces or on the exterior.
   1. Labels: Locate required product labels and stamps on concealed surfaces or, where required for observation after installation, on accessible surfaces that are not conspicuous.
   2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface that is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:
      a. Name of product and manufacturer.
      b. Model and serial number.
      c. Capacity.
      d. Speed.
      e. Ratings.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. The cost of the Work described in this Section shall be included in the Contract price.

END OF SECTION 01 60 00

SECTION 01 66 00 STORAGE AND PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions, and Division 01 Specification Sections apply to this Section.

1.2 SUMMARY

A. The Work specified in this Section consists of providing storage and protection of the materials, products and supplies which are to be incorporated into the construction and indicating such storage areas on the Contract Drawings with the location and dates when such areas will be available for each purpose.

B. Reference General Contract Conditions Article 13 “Protection of Persons and Property”.

1.3 SUBMITTALS

A. Refer to Division 01 Sections “Submittals” and “Shop and Working Drawings, Product Data, and Samples” for submittal procedures. Submit concurrently with submittals required in Division 01 Section “Layout of Work and Surveys”.

B. Storage Site Plan: Submit working drawings showing locations of storage areas not indicated on the Contract Drawings.

C. Storage and Protection Methods: Submit descriptions of proposed methods and locations for storing and protecting products.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Materials required for the storage and protection of the items specified shall be durable, weatherproof and either factory finished or painted to present an appearance acceptable to the Project Manager. Storage facilities shall be uniform in appearance with similar materials used to the maximum extent possible.

PART 3 - EXECUTION

3.1 GENERAL REQUIREMENTS OF EXECUTION

A. Palletize materials, products and supplies which are to be incorporated into the construction and stored off the ground. Store these items in a manner which will prevent damage, and which will facilitate inspection. Leave seals, tags, and labels intact and legible. Maintain access to products to allow inspection. Protect products that would be affected by adverse environmental conditions.

B. Periodically inspect stored products to ensure that products are being stored as stipulated and that they are free from damage and deterioration.

C. Do not remove items from storage until they are to be incorporated into the Work.

D. The Contractor shall ensure that all protective wrappings and coverings are secure and ballasted to prevent any items from deterioration and/or subsequent dislodgment. All items on the worksite that are subject to becoming windborne shall be ballasted or anchored.

3.2 HANDLING AND TRANSPORTATION

A. Handling:
1. Avoid bending, scraping or overstressing products. Protect projecting parts by blocking with wood, by providing bracing or by other approved methods.
2. Protect products from soiling and moisture by wrapping or by other approved means.
3. Package small parts in containers such as boxes, crates, or barrels to avoid dispersal and loss. Firmly secure an itemized list and description of contents to each container.
4. Refer to Division 32 Sections related to landscape materials for proper handling and storage of plant material.

B. Transportation: Conduct the loading, transporting, unloading, and storage of products so that they are kept clean and free from damage.
1. Refer to Division 32 Sections related to landscape materials for proper transportation of plant material.

3.3 STORAGE

A. Store items in a manner that shall prevent damage to the Owner's property. Do not store hydraulic fluids, gasoline, liquid petroleum, gases, explosives, diesel fuel, and other flammables in excavations, except one day's supply of diesel fuel may be stored in open excavations.

B. Provide sheltered weather-tight or heated weather-tight storage as required for products subject to weather damage.

C. Provide blocking, platforms or skids for products subject to damage by contact with the ground.

D. All material shall be stored according to the manufacturer's recommendations. Any material that will be stored within specified temperature or humidity ranges shall have a twenty-four (24) hour continuously written recording made of the applicable condition. Should the recording show that the material was not stored within the recommended ranges the material shall be considered defective and in nonconformance. If a certification from the manufacturer's engineering design representative is provided stating that the actual variations are acceptable and will in no way harm the material or affect warranties, then the deficiency will be considered corrected.

E. Store hazardous material separately, with all material marked with a label showing the hazard and how to treat exposure to the material.

3.4 LABELS

A. Storage cabinets and sheds that will contain flammable substances and explosive substances shall be labeled FLAMMABLE--KEEP FIRE AWAY and NO SMOKING with conspicuous lettering and conforming to OSHA requirements.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. The cost of the Work described in this Section shall be included in the Contract price. See Division 01 Section “Schedule of Values” for additional requirements for the possible payment of stored material.

END OF SECTION 01 66 00

SECTION 01 71 13 MOBILIZATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section

1.2 SUMMARY

A. This Work consists of the mobilization of personnel, equipment and supplies at the Project site in preparation for the Work. This item shall also include the establishment of the Contractor's necessary facilities, and all other costs incurred or labor and operations which must be performed as part of the Contract Documents.

B. Related Sections:
1. Division 01 Section “Schedule of Values”.
2. Division 01 Section “Coordination”.
3. Division 01 Section “Project Meetings”.
4. Division 01 Section “Schedule”.
5. Division 01 Section “Submittals”.
6. Division 01 Section “Shop and Working Drawings, Product Data, and Samples”.
7. Division 01 Section “Construction Safety”.
8. Division 01 Section “Regulatory Requirements”.
9. Division 01 Section “Quality Assurance”.
10. Division 01 Section “Contractor Quality Control”.
11. Division 01 Section “Temporary Facilities”.
12. Division 01 Section “Materials and Equipment”.
13. Division 01 Section “Storage and Protection”.
14. Division 01 Section “Layout of Work and Surveys”.
15. Division 01 Section “Construction Maintenance”.
16. Division 01 Section “Cleaning”.
17. Division 01 Section “Operation and Maintenance Data”.
18. Division 01 Section “Contract Record Documents”.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

PART 4 - MEASUREMENT AND PAYMENT

1.3 MEASUREMENT

A. Measurement will be based on the percentage complete for the lump sum contract amount completed for Mobilization.

1.4 PAYMENT

A. Payment will be made at the lump sum contract price, and shall include the required materials, transportation, equipment, and labor as required in accordance with the Contract Drawings and Specifications.

END OF SECTION 01 71 13

SECTION 01 71 23 LAYOUT OF WORK AND SURVEYS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions, and Division 01 Specification Sections apply to this Section.

1.2 SUMMARY

A. This Section includes the procedures and accuracy requirements for survey services for layout of work and field measurement of work quantities to be determined by surveys.
   1. The Work is to be verified and coordinated with Contract Drawings. Variations between Contract Drawings and actual field conditions are to be immediately brought to the attention of the Project Manager.
   2. Reference Standard Specifications for Construction and General Contract Conditions, Article 7 “Owner”.

1.3 SUBMITTALS

A. Refer to Division 01 Sections “Submittals” and “Shop and Working Drawings, Product Data, and Samples” for the submittal process.

B. Field Notes: Submit Copies of original pages of field notes.

C. Closeout Submittals:
   1. Original field notebooks when filled and at end of contract.
   2. Measurements for Record Documents.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 CONSTRUCTION LINES AND GRADES

A. The Contractor shall make surveys and layouts as necessary to delineate the work. The Contractor shall make the surveys for the proper performance of the Work. As a part of such surveys, the Contractor shall furnish, establish, and maintain in good order survey control points that may be required for the completion of the Work subject to the approval of the Project Manager as to their location, sufficiency, and adequacy. However, such approval by the Project Manager shall not relieve the Contractor of his responsibility for the accuracy of his survey work.

B. The Contractor shall furnish skilled labor, instrument platforms, ladders, and such other temporary structures as may be necessary for making and maintaining points and lines regarding the surveys required.

C. The District may draw the Contractor's attention to errors or omissions in lines or grades, but the failure to point out such errors or omissions shall not give the Contractor any right or claim nor shall in any way relieve the Contractor of his obligations according to the terms of this contract.

D. The Contractor's instruments and other survey equipment shall be accurate, suitable for the surveys required in accordance with recognized professional standards and in proper condition and adjustment always. Surveys shall be performed under the direct supervision of an Ohio licensed surveyor.

3.2 DIGITAL FILES

A. If approved by the Project Manager, the Contractor may elect to utilize the Design Consultant's digital CAD files as guidance for layout and location of site elements.

B. Layout and location of site elements, grades and features from digital CAD files does not relieve the Contractor of requirements, locations and grades shown on the Contract Drawings.

C. Contractor is responsible to verify locations of elements staked with digital data to assure conformance with the Contract Drawings at a level of accuracy as stated in Section 3.3 below.

3.3 SURVEYING ACCURACY AND TOLERANCES IN SETTING SURVEY, LAYOUT, AND QUANTITY CALCULATION STAKES

A. The tolerances generally applicable in setting survey stakes shall be as set forth in the ODOT's Survey Manual, latest edition. Such tolerances shall not supersede stricter tolerances required by the drawings or specifications and shall not otherwise relieve the Contractor of responsibility for measurements in compliance therewith.

3.4 RECORD MEASUREMENTS

A. Provide record measurement for items that will be hidden or visible including all civil, mechanical and electrical, control work, and all utilities that are placed in concrete, earth, or behind walls shall be made.

B. Items located within or five feet (5') beyond a building shall be referenced to building column lines and finish floor elevations.

C. Special attention shall be paid to items requiring service, sensors, items with moving parts, access points and locations of junctions, elevation changes, and directional changes.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 01 71 23

SECTION 01 74 16 CONSTRUCTION MAINTENANCE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the requirements for maintaining the Project site during Construction until Substantial Completion. Failure to maintain the worksite will be grounds for withholding monthly payments until corrected to the satisfaction of the Project Manager.

B. Related Sections:

1. Division 01 Section “Temporary Facilities”.
2. Division 01 Section “Tree Retention and Protection”.
3. Division 01 Section “Erosion and Sedimentation Control”.
4. Division 01 Section “Material and Equipment”.
5. Division 31 Section “Watering”.
6. Division 32 Section “Turfgrass Seeding”.
7. Division 32 Section “Trees, Plants, and Groundcovers”.

1.3 JOB CONDITIONS

A. Site Requirements: The Contractor shall take responsibility for the Project site during Construction and perform required maintenance in a timely manner and as directed by the Project Manager.

B. Access: Maintain the worksite to permit access by other Owner contractors and Owner staff as required and to allow access by emergency personnel.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 WATERING

A. Watering shall be the responsibility of the Contractor during Construction until Substantial Completion.

B. The Contractor shall keep the existing landscape in a healthy condition, including turf, native grasses, perennials, and shrubs.

C. Existing trees within the Limit of Work and affected by Construction shall be watered by the Contractor per the requirements of Division 01 Section “Tree Retention and Protection”.

D. The Contractor shall take care to not over-water the Project site.

E. The Contractor shall coordinate irrigation, establishment watering and mowing schedule with Park Operations.

3.2 MOWING

A. Mowing of existing turf shall be the responsibility of the Contractor during Construction until Substantial Completion within the Limit of Work.

B. Mowing shall be completed weekly, or more as required.

C. Turf along the temporary construction and tree protection fencing shall be maintained.

D. The Contractor shall coordinate mowing within the Tree Protection Zones with the Project Manager.

3.3 WEED MANAGEMENT

A. Weed management shall be the responsibility of the Contractor during Construction until Substantial Completion.

B. The Contractor shall remove overgrown weeds within the Limits of Work and along the temporary fencing.

3.4 SNOW REMOVAL

A. Snow removal of sidewalks, park walks, trails, and detours shall be the responsibility of the Contractor during Construction until Substantial Completion.

B. Snow removal criteria is outlined below:
1. Snow shall be plowed if it is one-half inch or over.
2. A minimum of six feet (6') shall be cleared to allow for two-way traffic. The entire walk shall be cleared if it less than six feet (6') wide.
3. Snow clearing shall be completed by nine (9) am.
4. The Contractor shall continue to monitor snow and remove if it reaches on-half inch (1/2") or over within a two (2) hour-window.
5. If there is ice on the surface, ice melt shall be placed promptly, especially in shaded areas, unless it affects newly placed concrete or asphalt. If ice build-up occurs, the Contractor shall remove ice from the surface.
6. All ramps and access points must be fully cleared and safe to remain in compliance with ADA accessibility standards.
7. The Contractor shall provide a point of contact for snow removal operations.

3.5 FENCE MAINTENANCE

A. Maintenance of temporary chain link and orange tree protection fencing shall be the responsibility of the Contractor during Construction until Substantial Completion.

B. The Contractor shall ensure fencing is maintained as originally installed and approved by the Project Manager. Fencing that is damaged shall be replaced by the Contractor at no additional cost to the Owner.

3.6 TEMPORARY CLOSURES AND DETOURS

A. Temporary closures and detours shall be the responsibility of the Contractor during Construction until Substantial Completion.

B. The Contractor shall ensure closures and detours are accessible and safe and maintained as originally installed and approved by the Project Manager.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 01 74 16

SECTION 01 74 23 CLEANING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions, and Division 01 Specification Sections apply to this Section.

1.2 SUMMARY

A. This Section includes the requirements for maintaining a clean, orderly, hazard free worksite during construction, and final cleaning for the Owner's Final Acceptance. Failure to maintain the worksite will be grounds for withholding monthly payments until corrected to the satisfaction of the Project Manager.

B. Reference General Contract Conditions as listed:
   1. Article 8 "Contractor".
   2. Article 33 "Protection of Persons and Property".

1.3 JOB CONDITIONS

A. Safety Requirements: Maintain the worksite in a neat, orderly and hazard-free manner in conformance with all federal, state and local rules, codes, regulations and orders, including all OSHA requirements, until Final Acceptance of the Work. Keep catwalks, underground structures, worksite walks, sidewalks, roadways and streets, along with public and private walkways adjacent to the worksite, free from hazards caused by construction activities.
   1. Inspect those facilities regularly for hazardous conditions caused by construction activities.

B. Hazards Control:
   1. Store volatile wastes in covered metal containers and remove those wastes from worksite daily.
   2. Do not accumulate wastes which create hazardous conditions.
   3. If volatile and noxious substances are being used in spaces that are not naturally ventilated, provide artificial ventilation.
   4. Hazard controls shall conform to the applicable federal, state, and local rules and regulations.
   5. Provide appropriate waste receptacles in all areas in which employees are working. Waste receptacles shall be kept covered at all times. All materials on site shall be anchored and covered to prevent any objects from becoming wind-borne.

C. Access: Maintain the worksite to permit access by other Owner contractors as required and to allow access by emergency personnel.

PART 2 - PRODUCTS

2.1 CLEANING MATERIALS

A. Utilize the type of cleaning materials recommended by the manufacturer for the surfaces to be cleaned.

B. Maintain current Safety Data Sheets (SDS) on site for all chemicals. Refer to following link for associated OSHA requirements. https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10103

C. Ensure proper disposal of all wastes generated from the use of these materials. Must ensure compliance with all environmental regulations.

PART 3 - EXECUTION

3.1 INTERIM CLEANING

A. Clean the worksite every shift/workday for the duration of the construction contract. Maintain structures, grounds, storage areas, and other areas of worksite, including public and private properties immediately adjacent to worksite, free from accumulations of waste materials caused by construction operations. Place waste materials in covered metal containers. All hard concrete, steel, wood, and finished walking surfaces shall be swept clean daily.

B. Remove or secure loose material on open decks and on other exposed surfaces at the end of each workday or more often in a manner that will maintain the worksite hazard free. Secure material in a manner that will prevent dislodgment by wind and other forces.

C. Sprinkle waste materials with water or acceptable chemical palliative to prevent blowing of dust.

D. Promptly empty waste containers when they become full and legally dispose of the contents at dumping areas off the Owner’s property.

E. Control the handling of waste materials. Do not permit materials to be dropped or thrown from structures.

F. Immediately remove spillage of construction related materials from haul routes, work site, private property, or public rights of way.

G. Clean only when dust and other contaminants will not precipitate upon newly painted surfaces.

H. Cleaning shall be done in accordance with manufacturer’s recommendation.

I. Cleaning shall be done in a manner and using such materials as to not damage the Work.

J. Clean areas prior to painting or applying adhesive.

K. Clean all heating and cooling systems prior to operations. If the Contractor was allowed to use the heating and cooling system, it shall be cleaned prior to testing.

L. Clean all areas that will be concealed prior to concealment.

3.2 FINAL CLEANING

A. Inspect interior and exterior surfaces, including concealed spaces, in preparation for completion and acceptance.

B. Remove dirt, dust, litter, corrosion, solvents, paint, stains, and extraneous markings.

C. Remove surplus materials, except those materials intended for maintenance.

D. Remove all tools, appliances, equipment, and temporary facilities used in the construction.

E. Remove detachable labels and tags. File them with the manufacturer's specifications for that specific material for the Owner's records.

F. Repair damaged materials to the specified finish or remove and replace.

G. Clean all catch basins, manholes, drains, strainers, and filters after all trades have completed their work and just before Final Acceptance

H. Sweep roadway, driveways, floors, steps, and walks.

I. Interior areas of buildings shall be vacuumed clean and mopped.

J. Final cleanup applies to all areas within and adjacent to the site.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 01 74 23

SECTION 01 77 00 CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions, and Division 01 Specification Sections apply to this Section.

1.2 SUMMARY

A. This Section includes procedures required for Substantial Completion and Division 01 Section "Contract Record Documents".

B. Reference General Contract Conditions as listed:
1. Article 2 "Date of Commencement and Substantial Completion Date".
2. Article 12"Payments and Completion".
3. Article 2003 "Final Settlement".

1.3 PREPARATION FOR FINAL INSPECTION

A. Before requesting inspection for Final Acceptance of the Work by the Owner, inspect, clean, and repair the Work as required.

1.4 FINAL INSPECTION

A. When the work is complete the Contractor shall submit written notification that:
1. All punch list items have been completed.
2. All clean up at the project site has been accomplished.
3. Work has been inspected by the Contractor for compliance with contract documents.
4. Work has been completed in accordance with contract documents.
5. Work is ready for final inspection by the Owner.
6. All required Record Documents have been submitted and accepted.
7. All damaged or destroyed real, personal, public, or private property has been repaired or replaced.
8. All operation and maintenance manuals have been submitted and accepted and all training has been completed.

B. The Project Manager will inspect to verify the status of completion with reasonable promptness after receipt of such notification. The inspection of the work will be done in accordance with the General Contract Conditions.

C. If the Project Manager finds incomplete or defective work:
1. The Project Manager may, at their sole discretion, terminate the inspection and/or deduct all costs associated with premature inspection from final billing.
2. The Contractor shall take immediate steps to complete work and send a second written notification to the Project Manager that Work is complete.
3. The Project Manager will then re-inspect the Work.

1.5 REINSPECTION FEES

A. Should the Project Manager perform re-inspection due to failure of the Work to comply with the claims of status of completion made by the Contractor:
   1. The Contractor shall compensate the Owner for such additional services at the rate of seventy-five dollars ($75.00) per man-hour.
   2. The Owner shall deduct the amount of such compensation from the final payment to the Contractor.

1.6 FINAL ADJUSTMENT OF ACCOUNTS

A. Submit a Final Statement of Accounting to the Project Manager.

B. The Final Statement of Accounting shall reflect all adjustments to the contract amount and shall include the following:
   1. The original contract amount.
   2. Additions and deductions resulting from:
      a. Previous change orders.
      b. Allowances.
      c. Final quantities for unit price items. Along with this statement shall be detailed backup for the quantities.
      d. Deductions or corrected work.
      e. Penalties.
      f. Deductions for liquidated damages.
      g. Deductions for re-inspection payments.
      h. Owner resurveys required due to the Contractor.
      i. Other adjustments
   3. Total contract amount, as adjusted.
   4. Previous payments.
   5. Sum remaining due.

C. If required, the Project Manager will prepare a final change order, reflecting approved adjustments to the Contract sum which were not previously made by change orders.

1.7 FINAL APPLICATION FOR PAYMENT

A. The Contractor shall submit the final application for payment in accordance with the procedures and requirements stated in the General Contract Conditions Article 12 “Payments and Completion”.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 01 77 00

SECTION 01 78 23 OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

A. This Section consists of requirements for preparing and submitting operation and maintenance data for mechanical, electrical, plumbing, fixtures, structures, shelters, pavement markings, chain link fencing, modular block retaining walls, site furnishings, storm sewerage, subsurface drainage, any additional products/equipment, and other specified equipment as directed by the Project Manager.

B. Related Sections:
1. Division 32 Section “Pavement Markings”.
2. Division 32 Section “Chain Link Fencing”.
3. Division 32 Section “Modular Block Retaining Wall”.
4. Division 33 Section “Storm Sewerage”.
5. Division 33 Subdrainage Systems”.

1.3 SUBMITTALS

A. Refer to Division 01 Sections “Submittals” and “Shop and Working Drawings, Product Data, and Samples” for submittal procedures.

B. Submit one (1) digital copy of the Operation and Maintenance Data Manual prior to Substantial Completion for review and comment. Substantial Completion will not be issued until the final Operations and Maintenance Data Manual is received and comments are addressed and accepted. Format is indicated below in Part 3 – Execution.

PART 2 - PRODUCTS

A. The following are the requirements of digital copies:
1. Paper Size: 8-1/2-inches x 11-inches, as applicable.
2. Text: Typewritten.
3. Cover Page: Provide a cover sheet for each manual. The cover shall contain the information as required below in Part 3 – Execution.
4. Digital Data: Manufacturer’s catalog cuts, brochures, operation and maintenance data. Clear reproductions will be acceptable. If this data is in color, all final manuals shall be in color.
5. Digital Drawings: Original drawing size with legible text.
6. Digital Scans of Drawings: Black ink on white paper, sharp in detail, and suitable for making reproductions.

PART 3 - EXECUTION

3.1 GENERAL

A. Assemble each operation and maintenance manual using the manufacturer's latest standard commercial data.

3.2 COVER

A. Include the following information on the front cover and on the inside cover sheet:
   1. Title: "Operation and Maintenance Instructions".
   2. Title of the project and contract number including park or location.
   3. Title of the facility, structure, or system.
   4. Contractor's name, address, and contact information.
   5. General subject of the manual.
   6. Leave spaces for signatures of the Owner representatives and Substantial Completion date.

3.3 CONTENTS OF THE MANUAL

A. An index of each manual section included in the Operations and Maintenance Manual.

B. A table of contents in front of each manual section. List and combine the information for each system in the sequence of operation.

C. Names, addresses, email addresses, and telephone numbers of the following:
   1. Contractor/Sub-contractor.
   2. Suppliers.
   3. Installers.
   4. Manufacturer's nearest service representatives.
   5. Manufacturer's nearest parts vendor and service agency.
   6. Include the manufacturer's order number and description of the order.

D. Copy of warranties and guarantees in accordance with the WARRANTY/GUARANTEE section, issued to and executed in the name of the Owner.

E. Substantial Completion date of the project. If a Landscape Maintenance contract exists, include the anticipated date the Owner assumes responsibility for site maintenance.

F. Include the following information within each manual section, if applicable:
   1. Description of system and component parts, including theory of operation.
   2. Pre-operation check or inspection list.
   3. Procedures for starting, operating, and stopping equipment.
   4. Post operation check or shut down list.
   5. Inspection and adjustment procedures.
   6. Troubleshooting and fault isolation procedures for on-site level of repair.
   7. Emergency operating instructions.
   8. Accepted test data.
   9. Maintenance schedules and procedures.
   10. Installers.
   11. Manufacturer's nearest service representatives.

12. Manufacturer’s nearest parts vendor and service agency.
13. Include the manufacturer’s order number and description of the order.
14. Test procedures to verify the adequacy of repairs.
15. Each wiring diagram.
16. Each piping diagram.
17. Each duct diagram.
18. Each control diagram.
19. Each accepted shop drawing.
20. Location where all measurements are to be made
21. Each software program imputable or changeable on site.
22. Manufacturer’s parts list with catalog names, numbers, and illustrations.
23. A list of components which are replaceable by the Owner.
24. An exploded view of each piece of the equipment with part designations.
25. A list of the Manufacturer’s recommended spare parts, current prices, and recommended quantities for two (2) years of operation.
26. A list of special tools and test equipment required for the operation, maintenance, adjustment, testing and repair of the equipment, instruments, and components.
27. Scale and corrosion control procedures.
28. Disassembly and re-assembly instructions.
29. Troubleshooting and repair instructions.
30. Calibration procedures.
31. Ordering information.
32. Training course material used to train Owner staff, including slides and other presentation material.
33. Winterization and spring start-up procedures.
34. Manufacturer’s maintenance and operation instructions for pump station.
35. Manufacturer’s maintenance and operations instructions for booster pumps.
36. Hardware, including gate hardware.
37. Finishes, including polymer finishes.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 01 78 23

SECTION 01 78 35 WARRANTIES AND BONDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the requirements for preparing and submitting warranties and bonds required by these specifications.

A. Reference the General Contract Conditions as listed:
1. Article 1 “Contract Documents”
2. Article 5 “Insurance”.
3. Article 8 “Contractor”.
4. Article12 “Payments and Completion”.
5. Article 14 “Correction of Work”.
6. Article 17 “Other Terms and Conditions”.

1.3 SUBMITTALS

A. Refer to Division 01 Section “Submittals” for submittal procedures.

B. Submit executed warranties and bonds.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 WARRANTIES AND BONDS

A. Execute the warranties and bonds required by the Contract Documents. Prepare and submit a list of all warranties and bonds on the form provided by the Owner. Reference Division 01 Section “Standard Forms”.

B. Provide warranties or bonds for the materials, labor, and time period set forth in the sections of these specifications requiring such documents. All warranties shall be in accordance with the General Contract Conditions. Refer to the individual specifications sections for all specific items requiring longer warranty periods.

C. Provide all warranties and bonds that the manufacturer or supplier furnishes at no additional cost in regular commercial trade. All warranties shall be in accordance with the General Contract Conditions. Refer to the individual specifications sections for all specific items requiring longer warranty periods.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 01 78 35

SECTION 01 78 39 CONTRACT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the requirements for maintaining, marking, recording, and submitting contract record documents, including shop drawings, as builts, operations and maintenance manuals, warranties, contract documents, and Contractor records.

B. Related Sections:
1. Division 3 Section “Cast-in-Place Concrete”
2. Division 32 Section “Asphalt Pavement”
3. Division 32 Section “Concrete Walks, Curbs and Miscellaneous Flatwork”
4. Division 32 Section “Pavement Markings”
5. Division 32 Section “Chain Link Fencing”
6. Division 32 Section “Modular Block Retaining Wall”
7. Division 32 Section “Soil Preparation”
8. Division 32 Section “Turfgrass Seeding”
9. Division 32 Section “Sodding”
10. Division 32 Section “Trees, Plants and Groundcovers”
11. Division 32 Section “Landscape Maintenance”
12. Division 33 Section “Storm Sewerage”
13. Division 33 Section “Subdrainage Systems”

1.3 SUBMITTALS

A. Each submittal of record documents shall contain the following information:
1. Date.
2. Project title and numbers.
3. Contractor’s name and address.
4. Title and number of each record document.
5. Certification that each document as submitted is complete and accurate.
6. Signature of the Contractor or his authorized representative.

B. At Substantial Completion of this contract, deliver all record documents including the following:
1. Shop drawings, diagrams, illustrations, schedules, charts, brochures, and other similar data, updated to record status.
2. As Builts.
3. Operations and Maintenance manuals.
4. Warranties, guarantees, and bonds.
5. Contract documents.
6. Contractor records.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 MAINTENANCE OF DOCUMENTS

A. The Contractor shall maintain at the worksite on a current basis one record copy of all drawings, specifications, addenda, change orders, approved shop drawings, working drawings, product data, and samples in good order and marked currently to record all changes made during construction.

B. Maintain at the field office one (1) copy of the following record documents:
   1. Contract Documents:
      a. Contract drawings with all clarifications, requests for information, directives, changes and field-modified conditions clearly posted.
      b. Contract specifications with all clarifications, requests for information, changes, directives and record of the manufacturer used along with product trade name.
      c. Reference Standards in accordance with Division 01 Section “Definitions and Conventions”.
      d. One set of drawings to record the following:
         1) Horizontal and vertical location of underground utilities affected by the Work.
         2) Location of internal utilities; include valves, controls, conduit, duct work, switches, pressure reducers, size reducers, transitions, crosses, tees, filters, motors, heaters, dampers, regulators, safety devices, sensors, access doors, and appurtenances that are concealed in the construction shall be shown with dimensions given from a visible and recognizable reference to the item shown in all three dimensions. The drawing shall also reference the applicable submittal for the item being located.
         3) Field changes of dimensions and details including as-installed elevations and location (station and offset).
         4) Details not on original contract drawings but obtained through requests for information or by other communications with the Owner.

   2. Contractor Records:
      a. Daily QC Reports.
      b. Certificates of compliance for materials used in construction.
      c. Nonconformance Reports (NCRs).
      d. Remedial Action Requests (RARs).
      e. Completed inspection list.
      f. Inspection and test reports.
      g. Test procedures.
      h. Qualification of personnel.
      i. Approved submittals.
      j. Material and equipment storage records.
      k. Safety Plan.
      l. Erosion, sediment, hazardous and quality plans.
      m. Hazardous material records.
      n. First report of injuries.

3.2 RECORDING

A. Keep record documents current daily.

B. Legibly mark copies of the contract drawings to record actual construction.

C. Legibly mark up each Section of the technical specifications and contract drawings to record:
   1. Changes made by change orders, requests for information, substitutions, and variations approved by submittals.

3.3 DOCUMENT MAINTENANCE

A. Maintain Documents in a clean, dry, and legible condition, which shall be turned over to the Owner prior to final acceptance.

B. Do not use record documents for construction purposes.

C. Make documents available for inspection by the Project Manager and any others having jurisdiction.

3.4 REVIEW

A. Project Manager or their designated representative will inspect the Record Drawings at each weekly progress meeting to ensure that they are being maintained and contain the most current data.

B. Prior to any application for payment, the Project Manager or his designated representative will inspect the record documents to ensure that they are being maintained and contain the most current correct data with attention to Record Drawings.

C. If, during the inspection, the Project Manager determines that the documents are not being maintained and kept current as to as-installed conditions, an amount may be withheld from the payment request and deducted from the contract value to cover the Owner's cost of collecting and recording the Record Contract data. This cost will be determined on the basis of seventy-five dollars ($75.00) per man-hour of effort.

3.5 FIELD QUALITY CONTROL

A. Record documents shall be prepared by Contractor to a high standard of quality, such as that set forth in MIL STD 100, American National Standard Drafting Manual (ANSI Y14), or other relevant lower tier specification defining equal drafting quality for microfilming, except for daily reports.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 01 78 39

SECTION 01 99 90 STANDARD FORMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This section includes forms to be used by the Contractor throughout the duration of the work.
   1. This is not a complete listing of all required forms.
   2. Required Forms
   3. The Contractor may create their own forms listed under Sample Forms recreate some of the forms so that they are compatible with the Contractor's Project Management system. However, Contractor must receive prior approval from the Project Manager before using modified forms.
   4. The Contractor shall properly complete all forms required by the contract or the Project Manager.
   5. The Project Manager shall review and approve all submitted forms. If submitted forms are not acceptable the Contractor shall resubmit forms in an acceptable format.

1.3 REQUIRED FORMS

A. The Contractor shall provide the following forms:
   1. Submittal Log.
   2. Request for Substitution.
   3. Quality Control Report.
   4. Request for Information Log.
   5. Corrective Action Report.
   6. Pay Application Form.

1.4 SAMPLE FORMS

A. The Contractor may create their own forms to be similar in style and content of the examples listed below.
   1. Schedule.
   2. Contractor/Subcontractor Warranty (reference the General Contract Conditions).
   3. Request for Substantial Completion Letter.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 COMPLETING FORMS

A. All documents are to be filled in digitally by the Contractor using the format provided by the Project Manager or using Adobe Acrobat. It is at the discretion of the Project Manager if other forms or formats will be accepted.

3.2 SIGNING FORMS

A. Original hand-written signatures are acceptable for all documents. The Contractor is to fill out the document digitally as indicated above prior to signing the hard copy.
   1. If the form is to be submitted digitally to the Project Manager, the document shall be scanned and saved as an Adobe Acrobat file.

B. Digital signatures are acceptable for all documents. The Contractor is to fill out the document digitally in the format provided by the Project Manager or use Adobe Acrobat. The file must be signed and submitted digitally to the Project Manager.
   1. All digital signatures must contain the name of signer in plain text and the time and date the signature is executed.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 01 99 90

SECTION 02 41 00 DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions, and Division 01 Specification Sections apply to this Section.

1.2 SUMMARY

A. This Section includes the requirements for demolition and removal of:
   1. Concrete slabs.
   2. Signs.
   3. Abandoned utilities.
   4. Miscellaneous site furnishings.
   5. Miscellaneous spray features and related equipment.

B. Related Sections:
   1. Division 01 Section “Temporary Facilities”.
   2. Division 01 Section “Erosion and Sedimentation Control”.
   3. Division 01 Section “Tree Protection and Retention”.
   4. Division 31 Section “Clearing and Grubbing”.
   5. Division 31 Section “Earth Moving”.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to the Owner in a condition ready for re-use.

C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.

D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

E. Recyclable Material: Material generated during demolition operations that can be reconditioned and reclaimed for the same or different use. Such materials include asphalt, concrete, metals (steel, iron, aluminum, copper, etc), rubber, glass and paper.

1.4 PROJECT CONDITIONS

A. Keep dust to a minimum at removal areas. Use water trucks as necessary.

B. Ensure safety of persons in demolition area. Provide temporary barricades as required per Division 01 Section “Temporary Facilities and Controls”.

1.5 PRE-CONSTRUCTION MEETINGS

A. Inspect and discuss condition of construction to be selectively demolished.

B. Review structural load limitations of existing structure.

C. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.

D. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.

E. Review areas where existing construction is to remain and requires protection.

F. Additional agenda items as deemed necessary by the Contractor or the Project Manager.

1.6 INFORMATIONAL SUBMITTALS

A. Proposed Protection Measures: Submit report, including drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.

B. Schedule of Demolition Activities:
   1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure the Owner's on-site operations are uninterrupted.
   2. Interruption of utility services. Indicate how long utility services will be interrupted.
   3. Coordination for shutoff, capping, and continuation of utility services.

C. Inventory: Submit a list of items to be removed and salvaged and deliver to the Project Manager prior to start of demolition.

D. Preconstruction Photographs or Video: Submit digital photographs or videos prior to Work commencing.

1.7 CLOSEOUT SUBMITTALS

A. Inventory:
   1. Submit a list of items that have been removed and salvaged.
   2. Include documentation of the type and volume/weight of materials hauled to the nearest recycling center.

PART 2 - PRODUCTS

2.1 FILL MATERIALS

A. Soils as indicated on documents, free of debris, frozen materials, roots, and other organic matter. See Division 31 Section "Earth Moving".

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect existing conditions to remain which may include but not limited to structures, pavement, trails, utilities, irrigation, landscape, trees and vegetation. Any damage to existing conditions during construction shall be repaired or replaced at the contractors cost and to the satisfaction of the Project Manager.

B. Set up all barriers, including those for tree protection, in accordance with Division 01 Section "Temporary Facilities" and Division 01 Section "Tree Protection and Retention", prior to proceeding with any demolition.

C. Protection and Repair of Underground lines:
   1. Existing Public Utilities: Locate existing underground utilities within the limits of work. Request utility locates seventy-two (72) hours in advance of any excavations by calling the Ohio811 at 811. The Contractor is responsible for providing written and graphical documentation from the utility owner. Take whatever precautions are necessary including potholing to verify location and depth to protect these underground lines from damage. Should unmarked or incorrectly marked utilities or other piping be encountered during excavation, notify the Project Manager immediately for direction. If damage does occur, all damage shall be repaired by the utility owner and all costs of such repair shall be paid by the Contractor. Only written all clears will be acceptable from utility providers or utility locate services, verbal all clears will not be accepted.
   2. Existing Private Utilities: Locate existing underground utilities within the limits of work. The Contractor is required to contact all private utility companies including The Village of Waynesville and Warren County departments to locate all private utilities. The Contractor is responsible for providing written and graphical documentation from the private utility owner. The request for locates shall be a minimum of seventy-two (72) hours prior to proceeding with any excavation. If, after such requests, private utilities are encountered and damaged by the Contractor these shall be repaired at no cost to the Owner. If the Contractor damages staked or located private utilities it shall be repaired by the utility owner and all costs of such repair shall be paid by the Contractor. Only written all clears will be acceptable from utility providers or utility locate services, verbal all clears will not be accepted.

3.2 DEMOLITION

A. Pavement, Slabs, and Miscellaneous Concrete Items:
   1. Remove concrete slabs-on-grade, curbs, and miscellaneous concrete items as directed. Where concrete to be removed abuts concrete to remain, pavement shall be uniformly saw-cut along an existing joint. Jagged or crooked edges will not be acceptable. Concrete shall be broken up, hauled, and disposed off site.
   2. Remove asphalt paved roads, parking lots, walks, curbs, and miscellaneous asphalt as indicated on Contract Drawings. Cuts between pavement to be removed and pavement to remain shall be saw-cut to full depth, straight, smooth, and clean with no jagged edges. Asphalt shall be broken up, hauled, and disposed off site.
   3. Remove concrete pipe sections and miscellaneous concrete items as directed.
      a. Where concrete pipe is to be removed, it shall be uniformly saw-cut along an existing joint or disassembled at the joints. Jagged or crooked edges will not be acceptable. Concrete shall be broken up, hauled, and disposed off site.

b. When Asbestos Concrete Pipe (ACP) is determined or suspected to be present the Contractor will need to hand dig the pipe sections to be removed. Any ACP sections will need to remain intact. The use of mechanical trenching equipment within eighteen inches (18") of any known or suspected ACP will not be permitted. Once the section that is to be removed has been excavated, an abatement Contractor will remove the sections of the pipe that are to be replaced or removed and the pipe shall be flush cut. The Contractor is responsible for notifying the Project Manager of any ACP that needs to be removed forty-eight (48)-hours prior to excavation of the area. If ACP is excavated that has not been previously identified the Contractor is responsible to contact the Project Manager either verbally or by email immediately upon discovery. Any ACP that is discovered to be damaged must be immediately reported to the Project Manager. The Project Manager will then notify the Abatement Contractor of the work that needs to be performed. The Abatement Contractor has twenty-four (24)-hours to respond and remove the ACP section(s).

4. Remove road base material that is exposed after removing the pavement. This material shall be hauled and disposed off site unless otherwise directed by the Project Manager.

B. Abandoned Utilities: Remove aboveground utilities and terminate as approved by the utility company and the Project Manager. Remove necessary portions of underground utilities to a minimum of twenty-four inches (24") below the elevation of excavation or final grade. Cap off conduits with minimum twenty-four inch (24") long concrete plugs.

3.3 RESTORATION

A. Backfilling: Ensure that areas to be filled are free of standing water, frost, frozen material, vegetation, including roots and debris. Place fill materials in accordance with Division 31 Section "Earth Moving".

B. Grading:
1. Restored Areas: Grade surface to blend with original contours and provide free drainage flow. All ruts and depressions where any amount of standing water collets shall be re-graded to a smooth natural appearance to ensure positive drainage.
2. New Construction Areas: Grade as indicated in Division 31 Section "Earth Moving".

3.4 DISPOSAL

A. Remove trash, debris and waste materials, haul and legally dispose of it off the property. Disposal tickets or manifests shall be provided to the Contractor by the Project Manager.

B. To the greatest extent possible the Contractor shall recycle materials including but not limited to asphalt, concrete, metals, plastics. Recyclable materials shall be approved by the Project Manager and hauled to nearest recycling center.

C. Salvaged Material: All salvaged material remains the property of the Owner. Store or deliver as directed by the Project Manager.

3.5 FIELD QUALITY CONTROL

A. Comply with safety requirements for demolition, ANSI A10.6-83.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Measurement will be based on the percentage complete for the lump sum contract amount for Demolition.

4.2 PAYMENT

A. Payment will be made at the lump sum contract price, and shall include required materials, transportation, equipment, labor, excavation, stockpiling, disposing, hauling off, watering, dust control, erosion and sediment control, and all other items as required in accordance with the Contract Drawings and Specifications. The price shall include sawing or otherwise effectively cutting the existing paving, curb and gutter or concrete pipe smoothly and squarely in a manner satisfactory to the Project Manager. The price shall include the removal and offsite disposal of all materials including any base course deemed unsuitable by the Project Manager. No payment will be made for the removal and/or replacement of any paving, curb and gutter or pipe sections damaged by the Contractor beyond the authorized limits of removal.

END OF SECTION 02 41 00

SECTION 03 30 00 CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 01 Specification Sections, and related report documentation apply to this Section.

1.2 SUMMARY

A. This Section of the Work includes furnishing, placing, shoring, bracing, and anchorage of formwork, concrete reinforcement, accessories, and placing concrete in connection with cast-in-place concrete installation including installation of control and expansion joints, concrete curing, and concrete finishing

B. Related Sections:
1. Division 01 Section “Layout of Work and Surveys”.
2. Division 01 Section “Submittals”.
3. Division 01 Section “Contractor Quality Control”.
4. Division 01 Section “Erosion and Sedimentation Control”.
5. Division 31 Section “Earth Moving”.
6. Division 32 Section “Aggregate Base Course”.
7. Division 32 Section “Concrete Walks, Curbs, and Miscellaneous Flatwork”.

1.3 REFERENCES

A. Note: All references below shall be from the most current edition.

B. American Concrete Institute (ACI):
1. ACI 117 - Standard Tolerances for Concrete Construction and Materials.
2. ACI 301 - Specifications of Structural Concrete for Buildings.
3. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
4. ACI 305 and 306 - Hot and Cold Weather Protection for Concrete.
5. ACI 315 - Details and Detailing of Concrete Reinforcement.
6. ACI 318 - Building Code Requirements for Reinforced Concrete.
7. ACI 347 - Recommended Practice for Concrete Formwork.

C. American Society for Testing and Materials (ASTM):
1. ASTM A615 - Deformed and Plain Billet-Steel for Concrete Reinforcement.
2. ASTM A1064 / A1064M-17 - Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
3. ASTM C33 - Concrete Aggregates.
4. ASTM C94 - Ready-Mixed Concrete.
5. ASTM C150 – Portland Cement.
6. ASTM C260 - Air Entraining Admixtures for Concrete.
7. ASTM C494 - Water Reducing Admixtures for Concrete.
8. ASTM C618 - Fly Ash Mineral Admixture for Concrete.

9. ASTM C672 - Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals.
10. ASTM C979 - Pigments for Integrally Colored Concrete
11. ASTM C1059 - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete
12. ASTM-C1315 - Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete

D. Concrete Reinforcing Steel Institute (CRSI) - Manual of Standard Practice.

E. Ohio Department of Transportation (ODOT) - Standard Specifications for Road and Bridge Construction.

F. National Ready Mixed Concrete Association (NRMCA)

1.4 QUALITY CONTROL

A. Pre-Construction Conference: Conduct conference at location approved by the Project Manager.
1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
a. Contractor's superintendent.
b. Independent testing agency responsible for concrete design mixtures.
c. Ready-mix concrete manufacturer.
d. Concrete subcontractor.
e. Special concrete finish subcontractor.
2. Review special inspection and testing and inspecting agency procedures for field quality control, concrete finishes and finishing, cold- and hot-weather concreting procedures, curing procedures, construction contraction and isolation joints, joint-filler strips, semi-rigid joint fillers, forms and form removal limitations, shoring and reshoring procedures, vapor-retarder installation, anchor rod and anchorage device installation tolerances, steel reinforcement installation, concrete repair procedures, and concrete protection.

1.5 SUBMITTALS

A. Qualification Data: Installer to document for Owner’s Representative experience on projects of similar scope and scale successfully completed within the past five (5) years.

B. Product Data and Material Certificates: For each type of product and material indicated on the plans and in this specification.

C. Mix Designs:
1. Submit substantiating data for each concrete mix design specified for use to the Project Manager not less than four (4) weeks prior to first concrete placement. Data for each mix shall, as a minimum, include the following:
a. Mix identification designation (unique for each mix submitted).
b. Statement of intended use for mix.
c. Mix proportions.
d. Admixtures (must be approved by the Project Manager).
e. Aggregates
f. Wet and dry unit weight.
g. Entrained air content.

h. Design slump.
i. Strength qualification data.

D. Submit shop drawings for fabrication, bending and placement of concrete reinforcement. Comply with ACI Detailing Manual SP 66. Include all accessories specified and required to support reinforcement.

E. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
1. Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.

F. Field quality-control reports.

G. Minutes of Pre-Construction conference.

1.6 DELIVERY, STORAGE AND HANDLING

A. General: Materials handling and batching shall conform to applicable provisions of ASTM C94.

B. Reinforcing: Unload and store reinforcing bar so they are kept free of mud and damage.

C. Project-Site Mixing: Not allowed without prior approval from the Project Manager. If allowed, submit process description to the Project Manager for approval prior to construction.

D. Hauling Time for Concrete: Deliver and discharge all concrete transmitted in a truck mixer, agitator, or other transportation device not later than one and one-half (1-1/2) hours, or three-hundred (300) revolutions of the drum after the initial mixing water has been added, whichever is earliest.

E. Extra Water:
1. Deliver concrete to site in exact quantities required by design mix.
2. Should extra water be required for workability before depositing concrete, and the water/cement ratio of accepted mix design will not be exceeded, the General Contractor's superintendent shall have the sole authority to authorize addition of water. Additional water shall not exceed one (1) gal/cu. yd. Any additional water added to mix after leaving batch plant shall be indicated on truck ticket and signed by person responsible.
3. Where extra water is added to concrete, it shall be mixed thoroughly for thirty (30) revolutions of drum before depositing.
4. Water may be added at the site only once for each batch.
5. A full set of tests shall be performed after addition of water. Excessive slump or other out of range tests will be cause for rejection.

1.7 PROJECT CONDITIONS

A. Environmental Requirements:
1. Cold Weather Placement:
a. If the daily temperature drops below forty degrees (40°) F for three (3) days prior to concrete placement or the temperature is expected to drop below forty degrees (40°)

F on the day of the concrete placement, then comply with ACI 306R for preparation, protection, and curing of concrete.

b. The mixed concrete temperature shall be between 50 and 90 ºF at the time of placement. Water, aggregates, or both shall be heated when necessary under such control and in sufficient quantities to avoid fluctuations in the temperature of the concrete of more than 10 ºF from batch to batch.

c. If approved by the Project Manager, an accelerating admixture may be used. Admixtures shall meet requirements of Part 2. Calcium Chloride and other chloride-type accelerating admixtures are not allowed.

2. Hot Weather Placement:

a. When placing concrete in hot weather, follow recommendations of ACI 305R.

b. Placing of concrete during hot weather shall be limited by the temperature of the concrete at the time of placing. Mixed concrete which has a temperature of 90 ºF or higher, shall not be placed.

c. When air temperatures on the day of placement are expected to exceed ninety degrees (90°) F, mix ingredients shall be cooled before mixing. Flake ice or well-crushed ice of a size that will melt completely during mixing may be substituted for all or part of mix water.

d. If approved by the Project Manager, a retarding admixture may be used. Admixtures shall meet requirements of Part 2.

1.8 RIGHT OF WAY WORK

A. Contractor shall obtain all necessary permits when working with in the Right of Way.

B. Contractor shall preserve and protect all permanent land survey control markers.

PART 2 - PRODUCTS

2.1 FORM MATERIALS

A. Hand Placed Steel Forms: Hand placed steel forms are only to be used for sections that are straight and have no bend, radii, or curvature in the sections to be used.

B. Wood Forms: Forms shall be made of solid one side grade, sound, undamaged lumber with straight edges.

1. Curved elements (bends, radii, or curvature) shown on plans are to be constructed with smooth-curved plywood forms. Faceted forms composed of straight sections will not be accepted.

C. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.

2.2 STEEL REINFORCEMENT

A. Recycled Content: Provide steel reinforcement with an average recycled content of steel so postconsumer recycled content plus one-half of pre-consumer recycled content is not less than twenty five percent (25%).

B. Reinforcing Bars: ASTM A 615/A 615M, Grade 60; deformed.

C. Epoxy-Coated Reinforcing Bars: ASTM A 775/A 775M or ASTM A 934/A 934M; with ASTM A 615/A 615M, Grade 60 (Grade 420) deformed bars.
   1. Epoxy Repair Coating: Liquid, two-part, epoxy repair coating, compatible with epoxy coating on reinforcement.

D. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 (Grade 420) plain-steel bars. Cut bars true to length with ends square and free of burrs.

E. Epoxy-Coated, Joint Dowel Bars: ASTM A 775/A 775M; with ASTM A 615/A 615M, Grade 60 (Grade 420), plain-steel bars.

F. Tie Wire: ASTM A1064, minimum sixteen (16) gauge annealed type.

G. Hook Bolts: ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6), internally and externally threaded. Design hook-bolt joint assembly to hold coupling against paving form and in position during concreting operations, and to permit removal without damage to concrete or hook bolt.

H. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:
   1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.
   2. For concrete surfaces exposed to view where legs of wire bar support contact forms, use CRSI Class one (1) plastic-protected steel wire or CRSI Class two (2) stainless-steel bar supports.
   3. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.
   4. For zinc-coated reinforcement, use galvanized wire or dielectric-polymer-coated wire bar supports.

2.3 CONCRETE MATERIALS

A. Provide materials in accordance with ACI 301, unless amended or superseded by requirements of this section or general notes on structural drawings.
   1. General: Ready-mixed Concrete: ASTM C94. On-site mixed concrete not allowed.
   2. Cement: ASTM C150. Type II
   3. Fly ash: ASTM C618 Class F.
   4. Aggregate: ASTM C33.
      a. All sand and aggregates to meet C-33 Table 3 for Class 4S “Severe Weathering Region”.
         1) Fine Aggregate: Clean, natural sand.
         2) Coarse Aggregate: Clean gravel or crushed stone.
   5. Water: ASTM C 94/C 94M, clean and not detrimental to concrete.

2.4 ADMIXTURES

A. General: Unless specified, no admixtures may be used without specific approval of the Project Manager.

B. Prohibited Products: Calcium chloride or admixtures containing more than one half of one percent (0.05%) chloride ions or thiocyanates are not permitted.

C. Air-Entraining Admixture: ASTM C260.

D. Water Reducing Admixture: ASTM C494, Type A.

E. High Range Water Reducing Admixture (Superplasticizer): ASTM C494, Type F or G.

F. Warm Weather Admixtures: ASTM C494. Use of admixtures will not relax warm weather placement requirements.

G. Cold Weather Admixtures: ASTM C494. Use of admixtures will not relax cold weather placement requirements.

2.5 CONCRETE MIX

A. All Concrete mixes submitted for approval shall meet the following criteria:
   1. Mix concrete in accordance with ASTM C94 and ACI 301 Chapter 3.
   2. Cement Content: Type II cement, minimum of five hundred twenty-eight (528) pounds per cubic yard.
   3. Fly ash: Class F per ODOT Standard Specifications for Road and Bridge Construction. Fly ash shall not exceed twenty (20%) of total cementitious material by weight unless approved by the Project Manager.
   4. Maximum water-cement ratio: 0.44.
   5. Slump: Four inches (4”) maximum when hand placed.
   6. Air Entrainment: Five percent (5%) to eight percent (8%).
   7. Aggregate Size: three quarter inches (3/4”), maximum.
   8. Concrete for Footings, Walls, and Interior Slabs-on-Grade shall be Class B or Class D, as approved by the Project Manager.

2.6 ACCESSORIES

A. Expansion Joints:
   1. Interior Use or Exterior Use Where Sealants are Specified: Bituminous saturated fiber conforming to ASTM D1751, one half inch (1/2”) thick. Provide manufacturer’s certification of compatibility with specified sealants where required.
   2. Exterior Use Where Sealants are not Specified: Pre-molded asphalt and fiber conforming to ASTM D994, one half inch (1/2”) thick.
   3. Joint Sealant: Per ODOT’s approved joint and crack sealant list. Where concrete color additive is used, sealant color to match adjacent concrete.

B. Void Forms: Biodegradable paper surface, treated for moisture resistance, structurally sufficient to support weight of plastic concrete and other superimposed loads.

C. Chamfer Strips: Wood, metal, PVC, or rubber strips, shaped as sized on the drawings.

D. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.

E. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete surface.
   1. Furnish units that will leave no corrodible metal closer than two inches (2”) to the plane of exposed concrete surface, or as shown on the drawings.
   2. Furnish ties that, when removed, will leave holes no larger than one inch (1”) in diameter in concrete surface.
   3. Furnish ties with integral water-barrier plates to walls indicated to receive damp proofing or waterproofing.

F. Spray Curing and Sealing Compound: White, Waterborne, Membrane-Forming ASTM C 1315, Type two (2), Class A, dissipating.
   1. Products:
      a. Seal Cure 30
      b. Or approved equal.

G. Bonding Agent: Latex bonding adhesive shall meet ASTM C 1059.

PART 3 - EXECUTION

3.1 FIELD QUALITY CONTROL

A. Requirements of Regulatory Agencies: Comply with all applicable provisions of the state and local building and safety codes.

B. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer, unless otherwise approved by the Project Manager.

C. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
   1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities" (Quality Control Manual - Section 3, "Plant Certification Checklist").

D. Testing: All testing shall be completed by the Contractor at their expense unless otherwise specified by the contract.

E. Testing Agency Qualifications: Engage a qualified testing agency to perform material evaluation tests and to design concrete mixtures. Qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
   1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

F. Testing Frequency: Obtain at least one composite sample for each one hundred (100) cubic yards, or fraction thereof of each concrete mixture placed each day.

a. When frequency of testing will provide fewer than five (5) compressive-strength tests for each concrete mixture, testing shall be conducted from at least five (5) randomly selected batches or from each batch if fewer than five (5) are used.

2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one (1) test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C 231, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
4. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one (1) set of four (4) standard cylinder specimens for each composite sample.
5. Compressive-Strength Tests: ASTM C 39/C 39M; test one specimen at seven days and two specimens at twenty-eight (28) days. and keep one for backup in the event a sample should break.
    a. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at twenty-eight (28) days.

G. Strength of each concrete mixture will be satisfactory if average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than two-hundred (200) psi.

H. Test results shall be reported in writing to Project Manager, concrete manufacturer, and Contractor within forty-eight (48) hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at twenty-eight (28) days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both seven (7) and twenty-eight (28) day tests.

I. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Project Manager.

J. Concrete work will be considered defective if it does not pass tests and inspections.

K. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

L. Prepare test and inspection reports.

M. Record of Work: A record shall be kept by the Contractor listing the time and date of placement of all concrete for the structure. Such record shall be kept until the completion of the project and shall be available to the Project Manager for examination at any time.

N. Mockups: Prior to starting any concrete work, provide a sample panel using materials indicated for project work. For each type, color and finish of concrete specified, build panel at the site of full thickness and approximately ten feet (10’) linear at a minimum, including reinforcement, expansion joints, control joint, scales, fillers, and one radial edge. Provide the workmanship proposed for the work. Correct and replace sample panel until the Project Manager’s acceptance of the work. Retain panel(s) during construction as a standard for completed paving work.

1. Build panel approximately one-hundred (100) sq. ft. in the location indicated or, if not indicated, as directed by the Project Manager.

2. Approved mockups may become part of the completed Work if approved prior to the construction of the mock up and is undisturbed at time of Substantial Completion.
3. Notify the Project Manager a minimum of seven (7) days in advance of dates and times when mockups will be constructed.
4. Obtain the Project Manager's written approval of the mockups before starting construction.
5. If the Project Manager determines that the mockup does not meet the requirements, demolish, and remove from the site and cast another until the mockup is approved.
6. Maintain the mockups during construction in an undisturbed condition as a standard for judging the completed Work.
7. Demolish and remove mockups when directed by the Project Manager.

O. Tolerances:
1. Formed Surfaces and Building Lines: Conform to ACI 301 4.3.
2. Slab Finishing Tolerances:
a. Elevation and Cross-slope: In conformance with grading plans and ADA.
b. Thickness: Plus, three eighths-inch (3/8”), minus one quarter-inch (1/4”).
c. Surface: Gap below ten feet (10’) long, unleveled straightedge not to exceed one eighty -inch (1/8”).
d. Lateral Alignment and Spacing of Dowels: one-inch (1”).
e. Vertical Alignment of Dowels: one quarter-inch (1/4”).
f. Joint Spacing: three-inches (3”).
g. Contraction Joint Depth: Plus, one quarter-inch (1/4”), no minus.
h. Joint Width: Plus, one eighth-inch (1/8”), no minus.
3. Embedded Items: Unless noted otherwise on drawings, tolerances shall be as follows:
a. Anchor Bolts:
1) Adjacent anchor bolts in a group receiving a single fabricated setting piece: Plus or minus (+/-) one-eighth inch (1/8”).
2) Location and alignment of anchor bolt groups from designated location and alignment: Plus or minus (+/-) one-eighth inch (1/8”).

3.2 PREPARATION OF SUBGRADE

A. Excavate to required depth in accordance with geotechnical report. Remove soft, yielding material and replace with select fill. Compact to minimum ninety-five percent (95%) Standard Proctor within two percent (2%) of optimum moisture.

B. Refer to Division 31 Section: Earth Moving for requirements for subgrade testing and proof-rolling.

C. Maintain subgrade in a compacted condition until concrete is placed.

3.3 FORMS

A. Metal or uniform warp free lumber forms; coated with form release agent. Obtain approval of the Project Manager for alignment and grade of forms a minimum of forty-eight (48) hours prior to placing concrete. Any concrete work installed without obtaining approval from the Project Manager shall be subject to removal and replacement at the discretion of the Project Manager, at no cost to the Owner.

B. Construct formwork to maintain tolerances in accordance with ACI 301.

C. Verify lines, levels, and measurement before proceeding with formwork.

D. Limit concrete surface irregularities, designated by ACI 347 as abrupt or gradual, as follows:
   1. Class A, one eighth inch (1/8") for smooth-formed finished surfaces.
   2. Class B, one-quarter inch (1/4") for rough-formed finished surfaces.

E. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

F. Form Tie Holes: Form tie holes are to be filled with grout and finished to match adjacent concrete surface.

G. Elements shown as curved on plans are to be formed with flexible form material to form smooth curve transitions. Disjointed, poorly transitioned form alignments will not be accepted. Curved sections formed with straight facets will not be accepted.

H. Contractor shall notify the Project Manager a minimum of forty-eight (48) hours in advance of placing concrete for review of formwork. Contractor shall make correction within twenty-four (24) hours of review. If formwork is not in place at time of the scheduled inspection, then the Contractor will be responsible for compensation of the Project Manager's time and expenses per the General Contract Conditions.

I. Minimize form joints. Symmetrically align form joints and make watertight to prevent leakage of mortar.

J. Provide chamfer strips on all exposed corners or as indicated on construction documents.

K. Do not apply form release agent other than specified materials where concrete surfaces receive special finishes or applied coatings which may be affected by agent. Soak contact surfaces of untreated forms with clean water. Keep surfaces wet prior to placing concrete.

L. Coordinate work of other Sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, dowels, anchors, and other inserts and embedded materials.

M. Do not remove forms, shoring and bracing until concrete has sufficient strength to support its own weight, and construction and design loads which may be imposed upon it.

N. During cold weather, remove ice and snow from forms. **Do not** use deicing salts. Do not use water to clean out completed forms unless formwork and construction proceed within heated enclosure. Use compressed air to remove foreign matter.

3.4 REMOVING AND REUSING FORMS

A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than fifty degrees (50°) F for twenty-four (24) hours after placing concrete. Concrete must be hard enough to not be damaged by form-removal operations and curing and protection operations need to be maintained.

1. Leave formwork for structural elements that supports weight of concrete in place until concrete has achieved at least seventy percent (70%) of its twenty-eight (28) day design compressive strength.
2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.

B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by the Project Manager.

3.5 SHORES AND RESHORES

A. Comply with ACI 318 (ACI 318M) and ACI 301 for design, installation, and removal of shoring and reshoring.
1. Do not remove shoring or reshoring until measurement of slab tolerances is complete.

B. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

3.6 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."

3.7 STEEL REINFORCEMENT

A. Install steel reinforcement only in locations shown on Contract Drawings.

B. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

C. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.

D. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

3.8 CONCRETE PLACEMENT

A. Contractor’s Review: Contractor shall inspect forms and reinforcing prior to concrete placement to assure accurate placement of embedded items and overall acceptability.

B. Project Manager's Review: Contractor shall provide minimum of forty-eight (48) hours' notice to the Project Manager to allow review of forms and reinforcement before concrete is placed and to observe placing of concrete.

C. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated.
   1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
   2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
   3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least six inches (6") into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

E. Deposit and consolidate concrete for concrete pavements in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

   1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
   2. Maintain reinforcement in position on chairs during concrete placement.
   3. Screed slab surfaces with a straightedge and strike off to correct elevations.
   4. Slope surfaces as indicated on drawings.
   5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
   6. Allow time for bleed water to appear, then scrape or push off all bleed water. Do not work water into surface.
   7. Final level, light bull float, but do not trowel surface.
   8. Broom or drag surface or other specified finish, per Subsection 3.8 this Section.
   9. Do not use evaporative retarders as finishing aid.

F. Cold-Weather Placement: Comply with ACI 306R. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
   1. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
   2. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
   3. Comply with concrete protection temperature requirements of ACI 306R. Record concrete temperatures during specified protection period at intervals not to exceed sixteen (16) hours and no less than twice during any twenty-four (24) hour period.

G. Hot-Weather Placement: Comply with ACI 305R.
   1. Spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.
   2. Protect to prevent rapid drying. Start finishing and curing as soon as possible.

H. Ensure reinforcement, inserts, embedded parts and formed joints are not disturbed during concrete placement.

3.9 CONCRETE FINISHING

A. Smooth Form Finish: Use form material to impart smooth, hard, uniform texture, and arrange form panels in orderly and symmetrical pattern with minimum seams. Repair and patch defective areas and completely remove and smooth all fins and other projections.

3.10 CONCRETE CURING AND SURFACE TREATMENTS

A. General:
   1. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Maintain concrete with minimal moisture loss at a relatively constant temperature for the period necessary for hydration of the cement and hardening of concrete.
   2. Curing shall commence as soon as free water has disappeared from the concrete surface after placing and finishing. The curing period shall be seven days for all concrete unless test cylinders, made and kept adjacent to the structure and cured by the same methods, are tested with the average compressive strength equal to seventy percent (70%) of the specified twenty-eight (28) day strength.
   3. Curing shall be in accordance with ACI 301 procedures. Avoid rapid drying at the end of the curing period. During hot and cold weather, cure concrete in accordance with ACI 305R and ACI 306R.

B. Curing Methods: Perform curing of concrete by moisture curing, by moisture-retaining cover curing, by curing compound, or by combinations thereof, as herein specified and in accordance with ACI 308.1. Coordinate with and choose a curing method that is compatible with the requirements for subsequent material usage on the concrete surface.
   1. Provide moisture retaining cover curing as follows: Cover concrete surfaces with a moisture-retaining cover for curing concrete, placed in widest practical width with sides and ends lapped at least three inches (3”) and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
   2. Provide curing and sealing compound to interior slabs left exposed, and to exterior slabs, walks and curbs as follows:
      a. Apply specified curing and sealing compound to concrete slabs as soon as final finishing operations are complete. Apply uniformly in continuous operation by power-spray or roller in accordance with manufacturer’s directions. Recoat areas subjected to rainfall within three hours after initial application.
      b. Maintain continuity of coating and repair damage during period.
      c. Do not use membrane curing compounds on surfaces which are to be covered with materials applied directly to concrete: liquid floor hardener, waterproofing, damp proofing, painting, other coating, and finish materials.

C. Curing Formed Surfaces: Where wooden forms are used, cure formed concrete surfaces by moist curing with forms in place for full curing period or until forms are removed. When forms are removed, continue curing by methods specified above for specified curing time.

D. Curing Unformed Surfaces:

1. Cure unformed surfaces, such as slabs, floor topping, and other flat surfaces by application of appropriate curing method.

3.11 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by the Project Manager.
   1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.

3.12 FORM REMOVAL

A. Removal of Forms: Supplement and Modify ACI 301 as follows:
   1. ACI 301 4.5.4: Formwork not supporting weight of concrete such as sides of grade beams, walls, and similar parts of the work, may be removed after cumulatively curing at not less than fifty degrees (50°) F for twenty-four (24) hours after placing the concrete provided:
      a. The concrete is sufficiently cured to be undamaged by form removal.
      b. Required shores and supports are so arranged that they will not be loosened or disturbed during form removal.
      c. Supplemental curing and protection is provided for exposed concrete surfaces.

3.13 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by the Project Manager. Remove and replace concrete that cannot be repaired and patched to the Project Manager's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of one-part portland cement to two and one-half parts fine aggregate passing a Number sixteen (#16) sieve, using only enough water for handling, and placing. Achieve approval of the Project Manager prior to any patching as to location of patches and patch material.

C. Patch Testing: On a portion of the work which will, in the finished condition, be concealed, test patch materials and methods and obtain the Project Manager’s approval prior to patching concrete surfaces needing repair that will be visible in the final construction.

D. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
   1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than one half inch (1/2”) in any dimension to solid concrete. Limit cut depth to three quarter inches (3/4”). Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
   2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color

and texture. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.

3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by the Project Manager.

E. Repairing Unformed Surfaces: Test unformed surfaces, such tops of walls, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped for trueness of slope and smoothness; use a sloped template.

1. After obtaining approval of the Project Manager, repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks more than one-one hundredths inch (0.01") wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
    a. If, after repairs are complete, the Project Manager deems the repairs did not successfully correct the original deficiencies, the pavement or concrete element in question is to be removed and replaced per Subsection 3.13. E.1. above.
2. After concrete has cured at least fourteen (14) days, test for low and high spots in finished surface. Areas that do not conform to the tolerances set forth in Division 32 and in other reference standards identified in this specification are to be sawcut to the nearest joint as approved by the Project Manager, defective concrete removed, and new conforming paving reinstalled. Color and finish is to match adjacent concrete.
3. If approved by the Project Manager, repair random cracks and single holes one inch (1") or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least seventy-two (72) hours.

F. Perform structural repairs of concrete, subject to the Project Manager's approval, using epoxy adhesive and patching mortar.

G. Repair materials and installation not specified above may be used, subject to Project Manager approval.

3.14 CLEANING

A. Perform cleaning during installation of the Work and upon completion of the Work. Remove all excess materials, debris, and equipment from the site. Repair any damage resulting from installation of the concrete.

B. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

3.15 PROTECTION

A. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.

B. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material.

3.16 ACCEPTANCE

A. Concrete work will be accepted when it meets the specified strength and all other requirements of this specification.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Measurement will be based on the percentage complete for the lump sum contract amount for Cast-in-Place Concrete.

4.2 PAYMENT

A. Payment will be made at the lump sum contract price, and shall include required materials, transportation, equipment, labor, excavation, stockpiling, disposing, hauling off, watering, dust control, erosion and sediment control, compaction, sub-grade preparation, formwork, placing of concrete, reinforcing, joints, curing, finishing and all other items required to complete the work as required in accordance with the Contract Drawings and Specifications.

END OF SECTION 03 30 00

SECTION 31 11 00 CLEARING AND GRUBBING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 01 Specification Sections, and related report documentation apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for stripping sod, and removing and disposing of vegetation and debris.

B. Related Sections:
1. Division 01 Section “Temporary Facilities”.
2. Division 01 Section “Erosion and Sedimentation Control”.
3. Division 01 Section “Tree Retention and Protection”.
4. Division 31 Section “Earth Moving”.

1.3 DEFINITIONS

A. Clearing and Grubbing: Refers to removing all surface objects and protruding objects not designated to remain shall be cleared and grubbed. This shall include but is not limited to trees, brush, stumps, logs, grass, weeds, roots, decayed vegetable matter, poles, stubs, rubbish, refuse dumps, sawdust piles, and loose boulders of one cubic yard (1 yd^3) or less existing outside of the construction limits, debris resting on or protruding through the ground surface, or appearing on the construction limits before final acceptance of the work. Clearing also includes removing and disposing of obstructions, such as fences, bridges, buildings, and other incidental structures within the construction limits and shown on the Site Demolition Plans.

B. Sod Stripping: Shall be used when the vegetative material to be removed is mowable and generally less than twelve inches (12”) tall.

C. Tree Removal: Tree removal shall be performed by a tree Contractor with and ISA-Certified Arborist on staff.

D. Subsoil: All soil beneath the topsoil layer of the soil profile and typified by the lack of organic matter and soil organisms.

E. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil and is the zone where plant roots grow, and ; reasonably free of subsoil, clay lumps, gravel, and other objects more than two-inches (2”) in diameter; and free of subsoil and weeds, roots, toxic materials, or other non-soil materials.

F. Plant-Protection Area: Area surrounding shrub beds or massings, or other vegetation or sensitive areas to be protected during construction, and indicated on Contract Drawings.

G. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction, see Division 01 Section “Tree Retention and Protection”.

H. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 SUBMITTALS

A. Existing Conditions: Documentation of existing conditions, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.
   1. Use sufficiently detailed digital photographs or videos.
   2. Include plans and notations to indicate specific damaged conditions of existing construction, site elements, and landscape.

B. Tree Removal Permit: Tree removal requirements, listing department, and permit application if applicable.

1.5 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
   1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Project Manager.
   2. Provide alternate routes around closed or obstructed traffic ways if required by Project Manager.

B. Improvements on Adjoining Property: Not allowed without prior approval from Project Manager. Work only within Work Limit Line as defined on drawings.

C. Salvable Items: Carefully remove items indicated to be salvaged and store on Owner property where indicated.

D. Protection and Repair of Underground lines:
   1. Existing Public Utilities: Locate existing underground utilities within the limits of work. Request utility locates seventy-two (72) hours in advance of any excavations by calling the Ohio 811 at 811. The contractor is responsible for providing written and graphical documentation from the utility owner. Take whatever precautions are necessary including potholing to verify location and depth to protect these underground lines from damage. Should unmarked or incorrectly marked utilities or other piping be encountered during excavation, notify the Project Manager immediately for direction. If damage does occur, all damage shall be repaired by the utility owner and all costs of such repair shall be paid by the contractor. Only written all clears will be acceptable, verbal all clears will not be accepted.
   2. Existing Private Utilities: Locate existing underground utilities within the limits of work. The contractor is required to contact all private utility companies including the Village of Waynesville and Warren County departments are to locate all private utilities. The Contractor is responsible for providing written and graphical documentation from the private utility owner. The request for locates shall be a minimum of seventy-two (72) prior to proceeding with any excavation. If, after such requests, private utilities are encountered and damaged by the contractor these shall be repaired at no cost to the Owner. If the contractor damages staked or located private utilities, they shall be

repaired by the utility owner and all costs of such repair shall be paid by the contractor. Only written all clears will be acceptable, verbal all clears will not be accepted.

E. Do not commence site clearing operations until temporary erosion- and sedimentation-control and tree and or plant protection measures are in place.

1.6 DELIVERY STORAGE AND HANDLING

A. All materials except for stripped topsoil and those materials indicated to remain or to be stockpiled, shall remain the property of the Owner. All other materials shall be removed at the Contractor's expense.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PROTECTION

A. Protect existing site conditions from damage during construction.
   1. Restore existing conditions damaged by Contractor during the work of this Contract to their original condition, as acceptable by Project Manager.

3.2 TRANSPLANTING

A. See Division 32 Section “Tree Transplanting”.

3.3 CLEARING

A. Remove brush and vegetation from areas designated to be cleared. As directed by Project Manager and the Urban Forestry Division, trim low hanging, unsound, or unsightly branches on existing trees and shrubs designated to remain. All cuts shall be in accordance with the Urban Forestry Division’s standards.

3.4 GRUBBING

A. Remove all stumps, roots, and debris a minimum of twelve-inches (12”) below finish grade in all areas as required. Use hand methods for grubbing inside the tree protection zone of trees to remain. Backfill and compact stump and root holes to a maximum of eighty-five percent (85%) in landscape areas and ninety-five percent (95%) under hardscape or as directed by the Project Manager and the Urban Forestry Division.

3.5 TOPSOIL STRIPPING

A. See Division 31 Section “Earth Moving”.

3.6 SOD STRIPPING

A. Strip sod in all areas to be re-graded to a depth of one-inch (1”), so that a relatively clean dirt surface remains.

3.7 TREE REMOVAL

A. In all proposed landscaped areas, stumps and surface roots shall be ground to a minimum of twelve-inches (12”) below finish grade. In proposed hardscape areas, all roots shall be removed entirely.

3.8 DISEASED TREE REMOVAL AND DISPOSAL

A. The removal of diseased and infested trees includes the requirement of offsite burial of all parts of the trees immediately following removal. This includes logs, stumps, roots, branches and composted and un-composted chips. Under no circumstances should diseased or infected wood be left or taken for firewood, mulch or taken to a wood processing mill.

3.9 DISPOSAL

A. Haul and dispose of all removed materials, trash, debris and waste materials legally inside and outside of the Owner’s property. All recyclable materials shall be hauled to nearest recycling center and any non-recyclable materials shall be hauled off site and disposed of properly.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Measurement will be based on the percentage complete for the lump sum contract amount for Clearing and Grubbing.

4.2 PAYMENT

A. Payment will be made at the lump sum contract price, and shall include required materials, transportation, equipment, labor. The lump sum price shall include all clearing and grubbing of miscellaneous debris or items defined in Part 1 - General, including all other work necessary to ensure a clear dirt surface remains on the site. Price shall include the removal and offsite disposal of all materials. All recyclable materials shall be hauled to the nearest recycling center and any non-recyclable materials shall be hauled off site and disposed of properly. No payment will be made for the removal of any brush and vegetation damaged by the Contractor beyond the authorized limits of removal.

END OF SECTION 31 11 00

SECTION 31 20 00 EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 01 Specification Sections, related report documentation, and Department of Public Works Technical Specifications, apply to this Section.

1.2 SUMMARY

A. This Section includes the requirements for excavation, re-grading, stripping, and stockpiling of topsoil, filling, backfilling, compaction, hauling, and legal off-site disposal of spoil materials to meet the required lines and grade as specified to complete the work.

B. Related Sections:
1. Division 01 Section “Erosion and Sedimentation Control”.
2. Division 01 Section “Tree Retention and Protection”.
3. Division 01 Section “Clearing and Grubbing”.
4. Division 02 Section “Demolition”.
5. Division 31 Section “Excavation and Backfilling of Trenches”.
6. Division 32 Section “Topsoil”.

1.3 DEFINITIONS

A. Excavation: The removal of material encountered to subgrade or over-excavation and subsequent disposal or placement of materials removed.

B. Unclassified Excavation: The term “unclassified excavation”, as used herein, includes the excavation of all materials required for the work obtained within construction limits of project, including bedrock, surface boulders, wasted sections of concrete, asphalt or other debris including historic landfills that may be encountered. All excavation will be considered unclassified unless otherwise noted.

C. Classified Excavation: The term “classified excavation”, as used herein, defines the soil conditions that are expected to be encountered and makes provisions for measurement and payment of any rock encountered at an agreed upon unit price.

D. Unauthorized Excavation: Inadvertent or purposely removing materials beyond indicated subgrade elevations or dimensions without specific direction of the Project Manager. Unauthorized excavation, as well as remedial work resulting from unauthorized excavation shall be at Contractor’s expense.

E. Unsuitable Materials: For the purposes of classified excavation, unsuitable material shall be defined as material below subgrade elevation that exhibits excessive pumping or that does not meet density requirements due to unsatisfactory material as determined by geotechnical engineer and/or Project Manager.

F. Subgrade: The undisturbed earth or the compacted soil layer immediately below proposed pavement and topping materials.

G. Structure: Walls, foundations, slabs, pavement or other man-made stationary features occurring above or below ground surface.

H. Structural Fill: The term "structural fill", as used herein, includes soil materials used for general site filling under pavements or structures.

I. Rough Grade: Cutting and filling the earth for preparation of finish grade. Elevation shall be within +/- one-tenth (.10') of a foot to the elevation indicated for that point.

J. Finished Grade: Any surface which has been cut to or built to the elevation indicated for that point. Elevation shall be +/- five one-hundredths (.05') of a foot from required elevation.

1.4 SUBMITTALS

A. Samples for Verification: For the following products, in sizes indicated below:
   1. Warning Tape: Twelve inches (12") long; of each color.

B. Qualification Data: For qualified testing agency.

C. Material Test Reports: For each on-site and borrow soil material proposed for fill and backfill as follows:
   1. Location of soil source.
   2. Classification according to ASTM D 2487.
   3. Laboratory compaction curve according to ASTM D 698.

D. Provide a minimum of one (1) gallon sample of imported fill material for approval by the Project Manager.

E. For imported fill materials, general or structural, the Contractor shall provide, at a minimum, a soils report indicating gradation tests, liquid limit, plasticity index and standard proctor density test and free of environmental contaminants. Depending on the use of the imported backfill materials the Project Manager may request that a soils analysis be performed to determine percent organic content of the soils, salt levels, and environmental contaminants of concern. Division 32 Section "Topsoil" for additional information.

F. A source for imported fill materials shall be submitted for approval by the Project Manager.
   1. Imported Material from a Quarry: A letter shall be submitted to the Project Manager and specifying the type of material.
   2. Imported Material from a Source Other than a Quarry: Submit a Phase I Environmental Assessment (ESA) and sampling protocol and/or a Phase II ESA or similar.

G. Pre-excavation Photographs or Video: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earth moving operations. Submit before earth moving begins.

1.5 QUALITY CONTROL

A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E 329 and ASTM D 3740 for testing indicated.

B. Comply with requirements within all Related Report Documentation.

C. Imported Soil:
   1. Submit source location for soil to be imported to site for approval by the Project Manager.
      a. Any fill material to be moved to and placed on Owner's property must be free of contamination (observed or previously documented) and be acceptable for unrestricted residential use. Imported soil or material that contains stains, odors, or debris regardless of analytical results shall not be imported to Owner's property.
   2. The Contractor shall submit appropriate environmental information to the Project Manager and.

D. Onsite Backfill of Disturbed Soil:
   1. Any disturbed soil for reuse on site with suspected or observed contamination or debris must be segregated and adequately characterized.
   2. If potential environmental impacts or debris are suspected or observed contact the Project Manager to determine project-specific protocols.

E. Offsite Reuse of Disturbed Soil:
   1. If excess soil will be reused offsite, contact Project Manager to determine project-specific protocols.
   2. Disturbed soils that contain stains, odors, or debris shall not be reused offsite.
   3. Soil sampling will be required. Sampling parameters differ based on the planned soil disposition – coordinate with Project Manager

F. Codes and Standards: Comply with all applicable local, state and Federal rules, regulations and ordinances concerning sloping of excavation, trenching and safety of workers, including the latest version of OSHA requirement.

G. Testing Agency: All testing required to determine compliance for the work of this section will be completed as specified in Division 01 Section "Contractor Quality Control". Testing Agency to test the following, and as stated throughout this Section:
   1. Determine prior to placement of fill that site has been prepared in compliance with requirements.
   2. Determine that fill material and maximum lift thickness comply with requirements.
   3. Determine, at the required frequency, that in-place density of compacted fill complies with requirements.

H. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable.

1.6 PROJECT CONDITIONS

A. Protection and Repair of Underground lines:
   1. Existing Public Utilities: Locate existing underground utilities within the limits of work. Request utility locates seventy-two (72) hours in advance of any excavations by calling

the Ohio 811 at 811. The Contractor is responsible for providing written and graphical documentation from the utility owner. Take whatever precautions are necessary including potholing to verify location and depth to protect these underground lines from damage. Should unmarked or incorrectly marked utilities or other piping be encountered during excavation, notify the Project Manager immediately for direction. If damage does occur, all damage shall be repaired by the utility owner and all costs of such repair shall be paid by the Contractor. Only written all clears will be acceptable, verbal all clears will not be accepted.

2. Existing Private Utilities: Locate existing underground utilities within the limits of work. The Contractor is required to contact all private utility companies and Village of Waynesville and Warren County departments to locate all utilities. The Contractor is responsible for providing written and graphical documentation from the private utility owner. The request for locates shall be a minimum of seventy-two (72) hours prior to proceeding with any excavation. If, after such requests, private utilities are encountered and damaged by the Contractor these shall be repaired at no cost to the Owner. If the Contractor damages staked or located private utilities, they shall be repaired by the utility owner and all costs of such repair shall be paid by the Contractor. Only written all clears will be acceptable, verbal all clears will not be accepted.

B. Use of Explosives: Use of explosives is not permitted.

C. Protection of Persons and Property: The Contractor is responsible for installing barricades and posting warning lights with all open excavations occurring as part of the work.

1. Protect structures, utilities, walkways, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

D. Environmental Requirements: Blasting is not permitted. Employ jack hammering and other loud noises and methods sparingly; comply with all applicable noise abatement ordinances or regulations. Onsite burning is not allowed.

E. Existing Benchmarks: Carefully preserve and maintain existing benchmarks, vertical/horizontal control, monuments, property line pipes and pins, and other reference points. If disturbed or destroyed, restore or replace at no additional cost to the Owner.

F. Do not commence earth moving operations until temporary erosion- and sedimentation-control measures, specified in Division 01 Sections "Temporary Facilities and Controls” and “Tree Retention and Protection”, and Division 31 Section "Clearing and Grubbing," are in place.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: All fill material, regardless of intended use category, must be clean and free from organic matter, roots, brush or other vegetation, trash, debris or other detrimental substances, and rocks or unbroken lumps larger than three-inches (3”). The Project Manager is to approve material prior to placement.

1. The Contractor is responsible for furnishing load tickets and providing a daily log of cubic yards of soil materials imported or exported.

B. Structural Fill: Shall be Class 1 or Class 2 material composed of non-organic mineral aggregates and soil from excavations of existing soils obtained from on-site or imported fill, including granular or aggregate base course from removed pavements. Fill containing organic matter or any other deleterious substances, including overly wet soils, bedrock, or high swell content soils will not be accepted. If sufficient materials meeting the above requirements are not available from on-site sources, provide additional material obtained from off-site sources and approved by the testing and inspections agency, at no additional cost to the Owner. The soil must be compactable and pass, at minimum, a proof roll prior to being accepted for supporting paving materials.

C. On-Site Topsoil: The top four-inches (4") minimum of organic material in the excavation zone shall be stripped stockpiled prior to other earthwork operations. All stockpiled topsoil shall be reused on site unless otherwise noted.

2.2 ACCESSORIES

A. Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, six-inches (6") wide and four (4) mils thick, continuously inscribed with a description of the utility.

B. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of six-inches (6") wide and four (4) mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to thirty-inches (30") deep.

C. Tape: Colored as follows:
1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas where the Work of this Section will be performed for compliance with requirements and conditions affecting installation and performance.
1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within the work area.
2. Proceed with installation only after unsatisfactory conditions have been corrected and approved by Project Manager.

3.2 GENERAL PROCEDURES

A. Comply with Division 01 Section "Erosion and Sedimentation Control" and all local, state and national erosion control requirements.

B. Erosion Control shall be maintained during all phases of site excavation and site development and maintained throughout the construction period in order to protect adjacent properties, streets, and storm sewers from erosion and sediment runoff during the construction process. Do not commence excavation and grading work until erosion control measures are in place and have been inspected by the Project Manager. Contractor shall be responsible for maintaining erosion control measures throughout construction. Frequent monitoring, cleaning and other work required for proper operation shall be Contractor's responsibility. Contractor shall modify/replace all erosion control measures to fit field conditions following direction for corrective actions from Project Manager and or Wastewater Management Inspector.

3.3 FIELD QUALITY CONTROL

A. Testing and inspections shall be coordinated and paid for by the Contractor.

B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by the Project Manager.

D. Field tests will be performed at the following locations and frequencies at a minimum:
   1. Paved Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every two thousand (2,000) sq. ft. or less of paved area or building slab, but in no case fewer than three (3) tests.
   2. Foundation Wall Backfill: At each compacted backfill layer, at least one test for every 50 feet (50') or less of wall length, but no fewer than two (2) tests.
   3. Trench Backfill: At each compacted initial and final backfill layer, at least one test for every one hundred fifty feet (150') or less of trench length, but no fewer than two tests.
   4. Landscaped areas: At least one test every twenty thousand (20,000) sq. ft or less of disturbed landscaped area, but in no case fewer than two (2) tests.

E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; re-compact and retest until specified compaction is obtained.

3.4 DEWATERING

A. Wherever possible, prevent surface water and subsurface or groundwater from flowing into excavations and from flooding the project site and surrounding area.

B. Contractor shall be required to dewater excavated areas by pumping, or otherwise control the water so that the project can be constructed in accordance with the plans. Any controlling of the water must be performed in such a manner that recently constructed portions of the project are not damaged. Repairs shall be at the Contractor's expense.

C. Damage to adjacent property that results from the Contractor's alteration of any surface drainage, ground water flows or pumped water shall be repaired by the Contractor at no additional cost to the Owner.

3.5 GROUND SURFACE PREPARATION

A. Complete clearing and grubbing operations in accordance with Division 31 Section “Clearing and Grubbing”. Where new material is to be placed on compacted subgrade, scarify ground surface until surface is free from ruts, hummocks or other uneven features, which would prevent uniform compaction and bond between old and new material.

B. Prior to placing any new sections of asphalt or concrete pavement, the entire subgrade shall be scarified to a depth of six-inches (6”). In areas where existing pavement is to be removed and replaced the existing compacted subgrade may be reused if the subgrade meets specified compaction. In areas of existing subgrade that do not meet the specified compaction, materials shall be removed, replaced and compacted to meet the specified proctor density. Adjust moisture content and compact as hereinafter specified.

3.6 STRIPPING AND STOCKPILING TOPSOIL

A. Strip all topsoil from the excavation zone for new facilities (four-inches (4”) in depth for all disturbed areas). Stockpile topsoil in locations indicated on the Drawings or as directed by the Project Manager.

B. Placing topsoil, refer to Division 32 Section “Topsoil”.

3.7 EXCAVATION

A. Stability of excavations: Comply with local codes, ordinances, and requirements of agencies having jurisdiction to include the latest revision to OSHA standards.

B. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.
   1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
   2. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:
      a. Twenty-four inches (24”) outside of concrete forms other than at footings.
      b. Twelve-inches (12”) outside of concrete forms at footings.
      c. Six-inches (6”) outside of minimum required dimensions of concrete cast against grade.
      d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
      e. Six-inches (6”) beneath bottom of concrete slabs-on-grade.
      f. Six-inches (6”) beneath pipe in trenches, and the greater of twenty-four inches (24”) wider than pipe or forty-two inches (42”) wide.

C. Classified Excavation: Excavate to subgrade elevations. Material to be excavated will be classified as earth and rock. Do not excavate rock until it has been classified and cross sectioned by the Project Manager and approved by the Project Manager. The Contract Sum will be adjusted for rock excavation according to unit prices included in the Contract Documents. Changes in the Contract Time may be authorized for rock excavation.

1. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; together with soil, boulders, and other materials not classified as rock or unauthorized excavation.
    a. Intermittent drilling; ram hammering; or ripping of material not classified as rock excavation is earth excavation.
2. Rock excavation includes removal and disposal of rock. Remove rock to lines and subgrade elevations indicated to permit installation of permanent construction without exceeding the following dimensions:
    a. Twenty-four inches (24") outside of concrete forms other than at footings.
    b. Twelve-inches (12") outside of concrete forms at footings.
    c. Six-inches (6") outside of minimum required dimensions of concrete cast against grade.
    d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
    e. Six-inches (6") beneath bottom of concrete slabs-on-grade.
    f. Six-inches (6") beneath pipe in trenches, and the greater of twenty-four inches (24") wider than pipe or forty-two inches (42") wide.

3.8 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimensions shown on Contract Drawings within a tolerance of plus or minus (+/-) one-tenth of a foot (0.1'). If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.
    1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
    2. Pile Foundations: Stop excavations six to twelve inches (6" – 12") above bottom of pile cap before piles are placed. After piles have been driven, remove loose and displaced material. Excavate to final grade, leaving solid base to receive concrete pile caps.

3.9 EXCAVATION FOR WALKS AND PAVEMENTS

A. See project Geotechnical Report.

B. Excavate to indicated elevations and dimensions within a tolerance of +/- one-tenth (0.1') of a foot.

C. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.
    1. Prior to placing the pavement section, the entire subgrade should be scarified to a depth of six-inches (6"), adjusted to a moisture content near optimum and compacted as indicated in the Geotechnical Report.

3.10 INSPECTION

A. Subgrade and Rough Grade Inspection:
    1. Contractor shall notify Project Manager when excavations have reached required subgrade.
    2. If Project Manager determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

3. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices.
4. For concrete subgrade preparation, proof-roll subgrade in locations identified by the Project Manager with a pneumatic-tired and loaded ten (10-wheel), tandem-axle dump truck weighing not less than fifteen (15) tons to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
    a. Completely proof-roll subgrade in one direction. Limit vehicle speed to three (3) mph.
    b. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by the Project Manager, and replace with compacted backfill or fill as directed.
5. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by the Project Manager, without additional compensation.

3.11 SPECIAL CONDITIONS

A. Cold Weather Protection: Protect excavation bottoms against freezing when atmospheric temperature is less than thirty five degrees (35°) F.

B. Dust Control: Provide dust control to alleviate dust nuisance to the public, to adjacent properties and other work underway at the project site.

C. Unanticipated Conditions: Notify the Project Manager immediately upon finding subsurface or other conditions which are not shown or which cannot be reasonably assumed from existing surveys. Secure Project Manager's instructions before proceeding with further work in such areas.

D. Unsatisfactory Soils: Remove or otherwise correct unsanitary, sour, or otherwise unsatisfactory soil. Remove contaminated or unsuitable material from under paved areas.

E. Additional Excavation: When excavation has reached required subgrade elevations, the Contractor shall contact the testing agency, which will make an observation of conditions. If unsuitable bearing materials are encountered at required subgrade elevations, carry excavations deeper and replace excavated material as directed by the testing agency.

3.12 FILL AND BACKFILL

A. General: Place soil material in layers to required subgrade elevations, for each area classification listed below, using materials specified in this Section.
1. Under grassed areas, use satisfactory, excavated, or borrow material.
2. Under walks and pavements, use satisfactory, excavated, or borrow materials, or a combination to meet structural fill requirements.

B. Backfill excavations as promptly as work permits, but not until completion of the following:
1. Inspection, testing, approval, and recording locations of underground utilities have been performed and recorded.
2. Removal of all trash and debris from excavation.

3.13 PLACEMENT AND COMPACTION

A. Abide by requirements of project Geotechnical Report unless otherwise directed by Project Manager.

B. Ground Surface Preparation: Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Ground surfaces that are steeper than four-to-one (4:1) (horizontal to vertical) shall be stripped of vegetation, scarified to a depth of six-inches (6") and create excavated benches to ensure that fill material will bond with the existing surface.
   1. Present remediation options to Project Manager for any soils that do not meet the specified standard proctor density to bring those soils into compliance with the specifications.

C. Place backfill and fill materials in layers not more than eight-inches (8") in loose depth for material compacted by heavy compaction equipment, and not more than four-inches (4") in loose depth for material compacted by hand-operated tampers, each layer to be compacted to meet requirements herein.

D. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Compact each layer to required percentage of maximum dry density or relative dry density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.

E. Compaction of Fill for Hardscape Areas:
   1. Select fill material shall be placed and mixed in evenly spread layers. After each fill layer has been placed, it shall be uniformly compacted. Fill materials shall be placed such that the thickness of loose material does not exceed eight-inches (8") and the compacted lift thickness does not exceed six-inches (6").
   2. Compaction shall be obtained by the use of sheepsfoot rollers, multiple-wheel pneumatic-tired rollers, or other equipment required to meet specifications. Granular fill shall be compacted using vibratory equipment or other equipment required to meet specifications. Compaction of each layer shall be continuous over the entire area. Compaction equipment shall make sufficient passes to ensure that the required density is obtained. Refer to Paragraph 3.12.I herein for criteria.
   3. Prior to placement of any base or surfacing materials, one hundred percent (100%) of the subgrade shall be proof rolled with a fully loaded tandem-axle truck.

F. Compaction of Landscape Slope Areas:
   1. Fill slopes shall be compacted by means of sheepsfoot rollers or other suitable equipment. Compaction operations shall be continued until slopes are stable, compact to a density as specified in Paragraph 3.12.I. Permanent fill slopes shall not exceed four-to-one (4:1) (horizontal to vertical).
   2. Where natural slopes are steeper than twenty percent (20%) in grade and the placement of fill is required, cut benches shall be provided at the rate of one bench for each five feet (5') in height (minimum of two benches). Benches shall be at least ten feet (10') in width. Fill shall be placed on completed benches as outlined within this specification.

G. Control soil and fill compaction, providing minimum percentage of density specified. Correct improperly compacted areas or lifts as directed if soil density tests indicate inadequate compaction.

H. Moisture Control: Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade or layer of soil material. Apply water in minimum quantity as necessary to prevent free water from appearing on surface during or subsequent to compaction operations.
   1. Moisture Content: The Contractor may be required to add moisture to the excavation materials in the stockpile area if it is not possible to obtain uniform moisture content by adding water on the fill surface. The Contractor may be required to rip or disc the fill soils to provide uniform moisture content through the soils.
   2. The application of water to the embankment materials shall be made with any type of watering equipment which will give the desired results. Water jets from the spreader shall not be directed at the embankment with such force that fill materials are washed out.
   3. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
   4. Stockpile or spread soil material that has been removed because it is too wet to permit compaction. Assist drying by disking, harrowing, or pulverizing until moisture content is reduced to a satisfactory value.

I. Density Tests: Field density tests shall be made by the Contractor per Division 01 Section "Contractor Quality Control" locations and depths selected by the Project Manager. Where sheepsfoot rollers are used, the soil may be disturbed to a depth of several-inches. Density tests shall be taken in compacted material below the disturbed surface. When density tests indicate that the density or moisture content of any layer of fill or portion thereof is below that required, the particular layer or portion shall be reworked until the required density or moisture content has been achieved. Criteria for acceptance are as follows:
   1. Under pavements and structures: Intervals and quantities of tests required shall be established by the Project Manager. On-site or imported clay materials shall be compacted to at least ninety five percent (95%) of maximum standard Proctor dry density (ASTM D 698) at moisture content within two percent (2%) of optimum. Granular material, whether imported or developed on-site, shall be moisture conditioned to within two percent (2%) of optimum and compacted to at least 95% of maximum modified Proctor dry density (ASTM D 1557).
   2. Under landscape areas (top 12-inches): Eighty five percent (85%) of maximum standard Proctor dry density at moisture content within two percent (2%) of optimum (ASTM D 698).

3.14 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
   1. Stockpile soil materials away from edge of excavations. Do not store within drip line of existing trees or within Tree Protection Fencing. Refer to Division 01 Section "Tree Retention and Protection".

3.15 PLACING STOCKPILED TOPSOIL

A. Refer to Division 32 Section "Topsoil".

3.16 FINISH GRADING

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

B. Subgrade tolerances are as follows:
   1. Lawn, Seeded, and Unpaved Areas: Finish areas to receive topsoil to within not more than +/- five one-hundredths (.05') of a foot above or below required subgrade elevations.
   2. Athletic Fields: Finish areas to receive topsoil to within not more than +/- two one-hundredths (0.02') of a foot from required elevation.
   3. Pavements: Shape surface of areas under pavement to line, grade, and cross-section, with finish surface not more than five one-hundredths (.05') of a foot above or below required subgrade elevation.

C. Under no circumstances shall variations from specified grade elevations create any ponding or retention of water on intermediate pavement levels, or finished surfaces.

3.17 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
   1. Scarify or remove and replace soil material to depth as directed by Project Manager; reshape and re-compact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
   1. Restore appearance, quality, and condition of finished surfacing to match adjacent work.

3.18 MAINTENANCE

A. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape, and compact to required density prior to further construction.

B. Settling: Where settling is measurable or observable at excavated areas during general project warranty period, remove surface (pavement, lawn, or other finish), add backfill material, compact, and replace surface treatment. Restore appearance, quality, and condition of surface or finish to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.19 DISPOSAL OF EXCESS AND WASTE MATERIALS

A. Removal from Owner's Property: Remove waste materials, including materials not allowed for fill, backfill or site grading as specified within, trash, contaminated materials, and debris, and legally dispose of it off Owner's property at Contractor's expense for hauling and recycling.

All recyclable materials shall be hauled to nearest recycling center and any non-recyclable materials shall be hauled off site and disposed of properly.

B. Remove any excess fill material from the site, unless otherwise directed by the Project Manager.

C. Remove any materials determined to be hazardous or contaminated to Owner designated facilities.

D. Removal of unsuitable material and its replacement as directed will be paid on basis of Conditions of the Contract relative to changes in work.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Measurement will be based on the percentage complete for the lump sum contract amount for Earth Moving.

4.2 PAYMENT

A. Payment will be made at the lump sum contract price, and shall include required materials, transportation, equipment, labor, excavation, stockpiling, disposing, hauling off, importing fill, re-transporting to fill locations (from locations of excavation or from onsite stockpiles), watering, compaction, sub-grade preparation, measuring of subgrade to bring within tolerances, backfilling, dust control, erosion and sediment control, rough grading, fine grading, and all other items as required in accordance with the Contract Drawings and Specifications. Stripping and stockpiling of topsoil shall be paid for separately under Division 32 Section “Topsoil”.

END OF SECTION 31 20 00

SECTION 31 23 16 EXCAVATION AND BACKFILLING OF TRENCHES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 01 Specification Sections, and related report documentation apply to this Section.

B. All work shall be done in conformance with the Owner Technical Specifications, if applicable.

1.2 SUMMARY

A. This Section includes requirements for the excavation and backfill for all piping, conduit, or related appurtenances, as shown on the plans and as specified herein.

B. All electric fixtures and utilities, including but not limited to outlets and lights, shall be located at outside perimeter of tree planting areas within hardscape. In tree lawns, fixtures shall be placed minimum 3 (three) feet radially from base of trunk.

C. Related Sections: Contractor shall comply with the requirements of the following Sections when installing underground utilities.
1. Division 01 Section “Layout of Work and Surveys”.
2. Division 01 Section “Tree Retention and Protection”.
3. Division 31 Section “Clearing and Grubbing”.
4. Division 31 Section “Earth Moving”.
5. Division 32 Section “Soil Preparation”.
6. Division 32 Section “Topsoil”.
7. Division 32 Section “Turfgrass Seeding”.
8. Division 32 Section “Native Seeding”.
9. Division 32 Section “Sodding”.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 31 23 16

SECTION 31 32 50 WATERING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for furnishing, hauling, and applying water required for compaction of embankments, backfills, sub-grade, and for landscaping, dust control, and other construction operations.

B. Related Sections:
1. Division 01 Section “Erosion and Sedimentation Control”.
2. Division 31 Section “Earth Moving”.
3. Division 31 Section “Excavation and Backfilling of Trenches.
4. Division 32 Section “Aggregate Base Course”.
5. Division 32 Section “Turfgrass Seeding”.
6. Division 32 Section “Sodding”.
7. Division 32 Section “Trees, Plants, and Groundcovers”.

PART 2 - PRODUCTS

2.1 WATER

A. Water for the project may be available through existing park infrastructure.

B. If water supply is from a hydrant, the Contractor shall supply a locally approved and calibrated water meter to measure water usage and be responsible to pay all costs related to water usage. The cost of water shall be charged at the current Owner rate through local provider.

C. Water applied for moisture density control, pre-wetting, and as dust palliative shall be free of debris, organic matter, and other objectionable substances.

D. Water for landscaping shall be free from oils, acids, salts or any substance that may be harmful to plant life. Non-potable water may be accepted on a case-by-case basis as approved by Project Manager.

E. When the water source proposed for use by the Contractor is not known, the Contractor shall provide an analysis of water samples from an approved testing laboratory. The analysis shall be provided to the Project Manager prior to use.

PART 3 - EXECUTION

3.1 APPLICATION

A. Pressure type distributors or a pipeline equipped with sprinkler system.

B. Moisture and Density Control: Ensure a uniform and controlled application of water without ponding or causing erosion for optimum moisture content.

C. Pre-wetting: Pre-wetting material in excavation areas prior to removal for placement in embankments will be allowed as approved by the Project Manager. Prior to excavation the Contractor shall drill, bore or dig test holes to the full depth of excavation to determine moisture requirements. The contractor will identify and confirm with the Project Manager the areas for pre-wetting, including equipment to be used for the pre-wetting operations.

D. Landscape Watering: The Contractor shall provide water for seeding, mulching, planting, transplanting, sodding, herbicide treatment, maintenance operations including watering during establishment periods or any other landscape related activities when called out on the Contract Drawings or Specifications.

E. If overwatering occurs during any of the above operations, de-water at no additional expense to the Owner.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. No separate measurement shall be made for work under this Section.

4.2 PAYMENT

A. No separate payment will be made for work under this Section. The cost of the work described in this Section shall be included in the Contract price.

END OF SECTION 31 32 50

SECTION 32 11 16 AGGREGATE BASE COURSE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 01 Specification Sections, and related report documentation apply to this Section.

1.2 SUMMARY

A. This Section includes the requirements for furnishing and placing crushed aggregate, bonded with fine aggregate, constructed on a prepared underlying course in accordance with these specifications and in conformity with the dimensions, typical cross section, and the lines and grades shown on the Contract Drawings. The locations where aggregate base course will be used is shown on the Contract Drawings.

B. Related Sections:
1. Division 01 Section “Layout of Work and Surveys”.
2. Division 01 Section “Contractor Quality Control”.
3. Division 01 Section “Erosion and Sedimentation Control”.
4. Division 31 Section “Earth Moving”.
5. Division 32 Section “Asphalt Pavement”.
6. Division 32 Section “Concrete Walks, Curbs, and Miscellaneous Flatwork”.

1.3 SUBMITTALS

A. See Division 01 Section “Submittals” for submittal requirements.

B. Certification: Contractor shall provide a certificate of compliance for any imported Aggregate Base Course materials.

C. Gradation and Standard Proctor Density Test Results: For imported backfill materials, at a minimum, submit results of gradation tests and standard proctor density test.

D. Sample: Provide a 1-pound (1#) sample of material(s) for approval.

PART 2 - PRODUCTS

2.1 AGGREGATE BASE COURSE

A. Aggregate base course shall meet the requirements of ODOT Standard Specifications for Road and Bridge Construction, latest revision, or as specified by the Soils Engineer and on Contract Drawings.

2.2 RECYCLED CONCRETE

A. May be substituted for Aggregate base Course, if acceptable to the Project Manager.

2.3 AGGREGATE

A. The use of this term implies the use of Aggregate Base Course within this Section only.

PART 3 - EXECUTION

3.1 EQUIPMENT

A. All equipment necessary for the proper construction of this work shall be in working condition, and shall be free of fluid leaks. Project Manager reserves the right to have any piece of equipment removed from the site if it is deemed inoperable and/or is leaking fluids.

3.2 PREPARING SUBGRADE

A. The underlying subgrade or base course shall be tested at the Contractors expense and accepted by the Project Manager before placing and spreading operations are started. See Division 01 Section “Contractor Quality Control”.

3.3 METHOD OF SPREADING

A. The aggregate material shall be placed on the prepared underlying course and compacted in layers not to exceed six-inches (6”) in depth before compaction. The depositing and spreading of material shall commence where designated and shall progress continuously without breaks. The material shall be deposited and spread in a uniform layer and without segregation of size to a uniform thickness.

B. The aggregate spread shall be of uniform grading with no pockets of fine or course materials. During the spreading process, sufficient caution shall be exercised to prevent the incorporation of underlying materials in the aggregate.

3.4 COMPACTION OF AGGREGATE BASE COURSE

A. When aggregate base course is used as part of asphalt roadway system (asphalt and base course composite section), the aggregate base course shall be compacted to 95% of Modified Proctor per ASTM D-1557, within 2% of optimum moisture.

B. Aggregate material shall be placed and mixed in evenly spread layers. After each fill layer has been placed, it shall be uniformly compacted. Fill materials shall be placed such that the thickness of loose material does not exceed eight-inches (8”) and the compacted lift thickness does not exceed six-inches (6”).

C. Compaction shall be obtained by the use of vibratory rollers, multiple-wheel pneumatic-tired rollers, or other equipment approved by the Project Manager. Granular fill shall be compacted using vibratory equipment or other equipment approved by the Project Manager. Compaction of each layer shall be continuous over the entire area. Compaction equipment shall make sufficient passes to ensure that the required density is obtained.

D. Prior to placement of any base or surfacing materials, one-hundred percent (100%) of the subgrade shall be proof rolled with a fully loaded tandem-axle truck.

3.5 CLEANING

A. Perform cleaning during installation of the Work and upon completion of the Work. Remove all excess materials, debris, and equipment from site. Repair any damage resulting from installation of aggregate base course.

3.6 PROTECTION AND MAINTENANCE

A. Spreading of aggregate shall not take place when temperatures are below freezing. When the aggregate base course contains frozen material or the underlying subgrade is frozen, construction shall not occur.

B. Following the completion of the aggregate base course, the Contractor shall perform all maintenance work necessary to keep the aggregate in a satisfactory condition until final acceptance of the project. The surface shall be kept clean and free from foreign material. The aggregate base course shall be properly drained at all times. Any work, maintenance or necessary repairs shall be performed at the expense of the Contractor.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Measurement will be based on the percentage complete for the lump sum contract amount for Aggregate Base Course.

4.2 PAYMENT

A. Payment will be made at the lump sum contract price, and shall include required materials, transportation, equipment, labor, excavation, de-watering, stockpiling, placement, grading, compaction, hauling off, watering, dust control, erosion and sediment control, and all other items as required in accordance with the Contract Drawings and Specifications.

END OF SECTION 32 11 16

SECTION 32 13 13 CONCRETE WALKS, CURBS, AND MISCELLANEOUS FLATWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 01 Specification Sections, related report documentation, and Department of Public Works Technical Specifications, apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for furnishing, placing, shoring, bracing, and anchorage of formwork, concrete reinforcement, accessories, and placing concrete flatwork, including walks, curbs and gutters, ramps, and pans, including installation of control and expansion joints, concrete curing and concrete finishing.

B. Related Sections:
1. Division 01 Section “Layout of Work and Surveys”.
2. Division 01 Section “Submittals”.
3. Division 01 Section “Contractor Quality Control”.
4. Division 01 Section “Erosion and Sedimentation Control”.
5. Division 03 Section “Cast-In-Place Concrete”.
6. Division 31 Section “Earth Moving”.
7. Division 32 Section “Aggregate Base Course”.

1.3 REFERENCES

A. Note: All references below shall be from the most current edition.

B. American Concrete Institute (ACI):
1. ACI 117 - Standard Tolerances for Concrete Construction and Materials.
2. ACI 301 - Specifications of Structural Concrete for Buildings.
3. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
4. ACI 305 and 306 - Hot and Cold Weather Protection for Concrete.
5. ACI 315 - Details and Detailing of Concrete Reinforcement.
6. ACI 318 - Building Code Requirements for Reinforced Concrete.
7. ACI 347 - Recommended Practice for Concrete Formwork.

C. American Society for Testing and Materials (ASTM):
1. ASTM A615 - Deformed and Plain Billet-Steel for Concrete Reinforcement.
2. ASTM C33 - Concrete Aggregates.
3. ASTM C94 - Ready-Mixed Concrete.
4. ASTM C150 - Portland Cement.
5. ASTM C260 - Air Entraining Admixtures for Concrete.
6. ASTM C494 - Water Reducing Admixtures for Concrete.
7. ASTM C618 - Fly Ash Mineral Admixture for Concrete.
8. ASTM C672 - Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals.
9. ASTM-C800 - Curing Compound, Concrete, for New and Existing Surfaces.

10. ASTM C1059 - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete
11. ASTM-C1315 - Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete

D. Concrete Reinforcing Steel Institute (CRSI) - Manual of Standard Practice.

E. Ohio Department of Transportation (ODOT) – Standard Specifications for Road and Bridge Construction, latest edition

F. National Ready Mixed Concrete Association (NRMCA)

1.4 QUALITY CONTROL

A. Pre-Construction Conference: Conduct conference at location approved by the Project Manager.
1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with concrete to attend, including the following:
a. Contractor's superintendent.
b. Independent testing agency responsible for concrete design mixtures.
c. Ready-mix concrete manufacturer.
d. Concrete subcontractor.
e. Special concrete finish subcontractor.
2. Review special inspection and testing and inspecting agency procedures for field quality control, concrete finishes and finishing, cold- and hot-weather concreting procedures, curing procedures, construction contraction and isolation joints, and joint-filler strips, semi-rigid joint fillers, forms and form removal limitations, shoring and reshoring procedures, vapor-retarder installation, anchor rod and anchorage device installation tolerances, steel reinforcement installation, concrete repair procedures, and concrete protection.

1.5 SUBMITTALS

A. Qualification Data: Installer to document for Owner’s Representative experience on projects of similar scope and scale successfully completed within the past five (5) years.

B. Product Data and Material Certificates: For each type of product and material indicated on the plans and in this specification.

C. Mix Designs:
1. Submit substantiating data for each concrete mix design specified for use to the Project Manager not less than four (4) weeks prior to first concrete placement. Data for each mix shall, as a minimum, include the following per section 2.7.B:
a. Mix identification designation (unique for each mix submitted).
b. Statement of intended use for mix.
c. Mix proportions.
d. Aggregates.
e. Admixtures (must be approved by the Project Manager)
f. Wet and dry unit weight.
g. Entrained air content.

h. Design slump.
i. Strength qualification data.

D. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
1. Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.

E. Field quality-control reports.

F. Minutes of Pre-Construction conference.

1.6 DELIVERY, STORAGE AND HANDLING

A. General: Materials handling and batching shall conform to applicable provisions of ASTM C94.

B. Reinforcing: Unload and store reinforcing bars so they are kept free of mud and damage.

C. Project-Site Mixing: Not allowed without prior approval from the Project Manager. If allowed, submit process description to the Project Manager for approval prior to construction.

D. Hauling Time for Concrete: Deliver and discharge all concrete transmitted in a truck mixer, agitator, or other transportation device not later than one and one-half (1-1/2) hours from batch time, or three hundred (300) revolutions of the drum after the initial mixing water has been added, whichever is earliest.

E. Extra Water:
1. Deliver concrete to site in exact quantities required by design mix.
2. Should extra water be required for workability before depositing concrete, and the water/cement ratio of accepted mix design will not be exceeded, the General Contractor's superintendent shall have the sole authority to authorize addition of water. Additional water shall not exceed one (1) gallon/cu. yd. Any additional water added to mix after leaving batch plant shall be indicated on truck ticket and signed by person responsible.
3. Where extra water is added to concrete, it shall be mixed thoroughly for thirty (30) revolutions of drum before depositing.
4. Water may be added at the site only once for each batch.
5. A full set of tests shall be performed after addition of water. Excessive slump or other out of range tests will be cause for rejection.

1.7 PROJECT CONDITIONS

A. Environmental Requirements:
1. Cold Weather Placement:
a. If the daily temperature drops below forty degrees (40°) F for three (3) days prior to concrete placement or the temperature is expected to drop below forty degrees (40°) F on the day of the concrete placement, then comply with ACI 306R for preparation, protection, and curing of concrete.
b. The mixed concrete temperature shall be between 50 and 90 ºF at the time of placement. Water, aggregates, or both shall be heated when necessary under such

control and in sufficient quantities to avoid fluctuations in the temperature of the concrete of more than 10 ºF from batch to batch.

c. If approved by the Project Manager, an accelerating admixture may be used. Admixtures shall meet requirements of Part 2. Calcium Chloride and other chloride-type accelerating admixtures are not allowed.

2. Hot Weather Placement:

a. When placing concrete in hot weather, follow recommendations of ACI 305R.

b. Placing of concrete during hot weather shall be limited by the temperature of the concrete at the time of placing. Mixed concrete which has a temperature of 90 ºF or higher, shall not be placed.

c. When air temperatures on day of placement are expected to exceed ninety degrees (90°) F, mix ingredients shall be cooled before mixing. Flake ice or well-crushed ice of a size that will melt completely during mixing may be substituted for all or part of mix water.

d. If approved by the Project Manager, a retarding admixture may be used. Admixtures shall meet requirements of Part 2.

1.8 RIGHT OF WAY WORK

A. Contractor shall obtain all necessary permits when working with in the Right of Way.

B. Contractor shall preserve and protect all permanent land survey control markers. Per the General Contract Conditions Article 319 “Preservation of Permanent land Survey Control Markers”.

PART 2 - PRODUCTS

2.1 FORM MATERIALS

A. Hand Placed Steel Forms: Hand placed steel forms are only to be used for sections that are straight and have no bend, radii or curvature in the sections to be used.

B. Wood Forms: Forms shall be made of solid one side grade, sound, undamaged lumber with straight edges.

1. Curved elements (bends, radii, or curvature) shown on plans are to be constructed with smooth-curved plywood forms. Faceted forms composed of straight sections will not be accepted.

C. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.

2.2 STEEL REINFORCEMENT

A. Recycled Content: Provide steel reinforcement with an average recycled content of steel so postconsumer recycled content plus one-half of pre-consumer recycled content is not less than twenty five percent (25%).

B. Reinforcing Bars: ASTM A 615/A 615M, Grade 60; deformed.

C. Epoxy-Coated Reinforcing Bars: ASTM A 775/A 775M or ASTM A 934/A 934M; with ASTM A 615/A 615M, Grade 60 (Grade 420) deformed bars.
   1. Epoxy Repair Coating: Liquid, two-part, epoxy repair coating, compatible with epoxy coating on reinforcement.

D. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 (Grade 420) plain-steel bars. Cut bars true to length with ends square and free of burrs.

E. Epoxy-Coated, Joint Dowel Bars: ASTM A 775/A 775M; with ASTM A 615/A 615M, Grade 60 (Grade 420), plain-steel bars.

F. Tie Wire: ASTM A1064, minimum sixteen (16) gauge annealed type.

G. Hook Bolts: ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6), internally and externally threaded. Design hook-bolt joint assembly to hold coupling against paving form and in position during concreting operations, and to permit removal without damage to concrete or hook bolt.

H. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:
   1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.
   2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.

2.3 CONCRETE MATERIALS

A. Provide materials in accordance with ACI 301, unless amended or superseded by requirements of this section or general notes on structural drawings.
   1. General: Ready-mixed Concrete: ASTM C94. On-site mixed concrete not allowed.
   2. Cement: ASTM C150. Type II
   3. Fly Ash: ASTM C618 Class F.
   4. Aggregate: ASTM C33.
      a. All sand and aggregates to meet C-33 Table 3 for Class 4S “Severe Weathering Region”.
         1) Fine Aggregate: Clean, natural sand.
         2) Coarse Aggregate: Clean gravel or crushed stone.
   5. Water: ASTM C 94/C 94M, clean and not detrimental to concrete.

2.4 ADMIXTURES

A. General: Unless specified, no admixtures may be used without specific approval of the Project Manager.

B. Prohibited Products: Calcium chloride or admixtures containing more than 0.05% chloride ions or thiocyanates are not permitted.

C. Air-Entraining Admixture: ASTM C260.

D. Water Reducing Admixture: ASTM C494, Type A.

E. High Range Water Reducing Admixture (Superplasticizer): ASTM C494, Type F or G.

F. Warm weather admixtures: ASTM C494. Use of admixtures will not relax warm weather placement requirements.

G. Cold Weather Admixtures: ASTM C494. Use of admixtures will not relax cold weather placement requirements.

2.5 CONCRETE MIX

A. All Concrete mixes submitted for approval shall meet the following criteria.
   1. Mix concrete in accordance with ASTM C94 and ACI 301 Chapter 3.
   2. Cement Content: Type II cement, minimum of five hundred twenty-eight (528) pounds per cubic yard.
   3. Fly Ash: Class F per ODOT Standard Specifications for Road and Bridge Construction. Fly ash shall not exceed twenty (20%) of total cementitious material by weight unless approved by the Project Manager.
   4. Maximum water-cement ratio: 0.44.
   5. Slump: Four inches (4") maximum when hand placed.
   6. Air Entrainment: five percent (5%) to eight percent (8%).
   7. Aggregate Size: three quarter-inch (3/4") maximum.
   8. Concrete for Exterior Flatwork, including Pavement, Curb and Gutter, and Drainage Pans shall be Class P, as approved by the Project Manager.

2.6 FIBROUS CONCRETE REINFORCEMENT

A. Shall be one hundred percent (100%) virgin polypropylene, fibrillated fibers containing no reprocessed olefin materials and specifically manufactured to an optimum gradation utilizing twenty-five (25) individual fiber designs for use as concrete secondary reinforcement. Volume per cubic yard shall be one and one-half (1.5) pounds, or in accordance with manufacturer's recommendations. Fiber manufacturer must document evidence of five (5) year satisfactory performance history, compliance with applicable building codes and ASTM C1116 Type III 4.1.3 and ASTM C1116 Performance Level I.
   1. Fibrous concrete reinforcement shall be utilized in all flatwork applications.

2.7 EXPANSION JOINT MATERIAL

A. Interior Use or Exterior Use where sealants are specified: Bituminous saturated fiber conforming to ASTM D1751, one half-inch (1/2") thick. Provide manufacturer's certification of compatibility with specified sealants where required.

B. Pre-molded closed cell polyethylene foam backer rod if required.

C. Joint Sealant: ASTM D 5893 Type NS, Silicone per ODOT's approved joint and crack sealant list. Where concrete color additive is used, sealant color to match adjacent concrete.

2.8 SLIP JOINTS

A. Speed Dowel Model PSD09/#4TX, 9” long sleeve to accommodate 18” smooth steel round bar, 5/8” diameter. Manufactured by Sika/Greenstreak, or approved equal.

2.9 CURING MATERIALS

A. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth made from jute or kenaf, weighing approximately nine (9) oz./sq. yd. dry.

B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

C. Spray Curing and Sealing Compound: White, Waterborne, Membrane-Forming ASTM C 1315, Type two (2), Class A, dissipating.
   1. Products:
      a. Horncure
      b. Or approved equal.

2.10 RELATED MATERIALS

A. Chemical Surface Retarder: Water-soluble, liquid, set retarder with color dye, for horizontal concrete surface application, capable of temporarily delaying final hardening of concrete to a depth of one eighth-inch (1/8”) to one quarter-inch (1/4”) to match the Project Manager’s sample.

2.11 TRUNCATED DOME INSERTS FOR RAMPS

A. All truncated domes within Parks maintained areas shall be unpainted grey cast iron plates conforming ASTM A-48 class 30.

PART 3 - EXECUTION

3.1 FIELD QUALITY CONTROL

A. Requirements of Regulatory Agencies: Comply with all applicable provisions of the state and local building and safety codes.

B. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer, unless otherwise approved by Project Manager.

C. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
   1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities" (Quality Control Manual - Section 3, "Plant Certification Checklist").

D. Testing: All testing shall be completed by the Contractor at their expense unless otherwise specified by the contract.

E. Testing Agency Qualifications: Engage a qualified testing agency to perform material evaluation tests and to design concrete mixtures. Qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
   1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

F. Testing Frequency: Obtain at least one composite sample for each one hundred (100) cubic yards, or fraction thereof of each concrete mixture placed each day.
      a. When frequency of testing will provide fewer than five (5) compressive-strength tests for each concrete mixture, testing shall be conducted from at least five (5) randomly selected batches or from each batch if fewer than five (5) are used.
   2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one (1) test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
   3. Air Content: ASTM C 231, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
   4. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one (1) set of four (4) standard cylinder specimens for each composite sample.
   5. Compressive-Strength Tests: ASTM C 39/C 39M; test one specimen at seven days and two specimens at twenty-eight (28) days and keep one for backup in the event a sample should break.
      a. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at twenty-eight (28) days.

G. Strength of each concrete mixture will be satisfactory if average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than two-hundred (200) psi.

H. Test results shall be reported in writing to Project Manager, concrete manufacturer, and Contractor within forty eight (48) hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at twenty eight (28) days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both seven (7) and twenty eight (28) day tests.

I. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Project Manager.

J. Concrete work will be considered defective if it does not pass tests and inspections.

K. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

L. Prepare test and inspection reports.

M. Record of Work: A record shall be kept by the Contractor listing the time and date of placement of all concrete for the structure. Such record shall be kept until the completion of the project and shall be available to the Project Manager for examination at any time.

N. Mockups: Prior to starting any concrete work, provide a sample panel using materials indicated for project work. For each type, color and finish of concrete specified, build panel at the site of full thickness and approximately ten feet (10') by 10 feet (10'), including expansion joints, control joint, scales, fillers, and one radial edge. Provide the workmanship proposed for the work. Correct and replace sample panel until Project Manager's acceptance of the work. Retain panel(s) during construction as a standard for completed paving work.
   1. Build panel approximately one-hundred (100) sq. ft. in the location indicated or, if not indicated, as directed by the Project Manager.
   2. Approved mockups may become part of the completed Work if approved prior to the construction of the mock up and is undisturbed at time of Substantial Completion.
   3. Notify the Project Manager a minimum of seven (7) days in advance of dates and times when mockups will be constructed.
   4. Obtain the Project Manager's written approval of the mockups before starting construction.
   5. If the Project Manager determines that the mockup does not meet the requirements, demolish and remove from the site and cast another until the mockup is approved.
   6. Maintain the mockups during construction in an undisturbed condition as a standard for judging the completed Work.
   7. Demolish and remove mockups when directed by the Project Manager.

O. Tolerances: Comply with tolerances in ACI 117, the Contract Drawings, and as follows:
   1. Elevation and Cross-slope: In conformance with grading plans and ADA.
   2. Thickness: Plus, three eighths-inch (3/8"), minus one quarter-inch (1/4").
   3. Surface: Gap below ten feet (10') long, unleveled straightedge not to exceed one eighth - inch (1/8").
   4. Lateral Alignment and Spacing of Dowels: one-inch (1").
   5. Vertical Alignment of Dowels: one quarter-inch (1/4").
   6. Joint Spacing: three-inches (3").
   7. Contraction Joint Depth: Plus, one quarter-inch (1/4"), no minus.
   8. Joint Width: Plus, one eighth-inch (1/8"), no minus.

3.2 PREPARATION OF SUBGRADE

A. Excavate to required depth in accordance with geotechnical report. Remove soft, yielding material and replace with select fill. Compact to minimum ninety-five percent (95%) Standard Proctor within two percent (2%) of optimum moisture.

B. Refer to Division 31 Section: Earth Moving for requirements for subgrade testing and proof-rolling.

C. Maintain subgrade in a compacted condition until concrete is placed.

3.3 FORMS

A. Metal, plastic, or uniform warp free lumber forms, coated with form release agent. Slope forms to give slabs positive drainage and stake securely. Obtain approval of the Project Manager for alignment and grade of forms a minimum of forty-eight (48) hours prior to placing concrete. Any concrete work installed without obtaining approval from the Project Manager shall be subject to removal and replacement at the discretion of the Project Manager, at no cost to the Owner.

B. Radii shall be continuous and flowing to avoid angular intersections in the horizontal alignment, radial forming shall use bender board or approved equal as directed by the Project Manager.

3.4 REMOVING AND REUSING FORMS

A. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

3.5 STEEL REINFORCEMENT

A. Install steel reinforcement only in locations shown on Contract Drawings.

B. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

C. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.

D. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

3.6 CONCRETE PLACEMENT

A. Prior to placing any new sections of concrete pavement, the entire subgrade shall be scarified to a depth of 6-inches. In areas where existing pavement is to be removed and replaced the existing compacted subgrade may be reused if the subgrade meets specified compaction. In areas of existing subgrade that do not meet the specified compaction, materials shall be removed, replaced and compacted to meet the specified proctor density. Adjust moisture content and compact as hereinafter specified.

B. Contractor’s Review: The Contractor shall inspect forms and reinforcing prior to concrete placement to assure accurate placement embedded items and overall acceptability.

C. Project Manager’s Review: Contractor shall provide minimum of forty-eight (48) hours’ notice to the Project Manager to allow review of forms and reinforcement before concrete is placed and to observe placing of concrete.

D. Do not place concrete on frozen surfaces.

E. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

F. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.

G. Do not add water to concrete during delivery.

H. Deposit and spread concrete in a continuous operation between transverse joints. Do not use vibratory equipment to move concrete into place.

I. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.
   1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies**,** reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.

J. Screed paving surface with a straightedge and strike off.

K. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

L. Curbs and Gutters: Use design mixture for automatic machine placement. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing.

M. Slip-Form Paving: Use design mixture for automatic machine placement. Produce paving to required thickness, lines, grades, finish, and jointing.
   1. Compact subbase and prepare subgrade of sufficient width to prevent displacement of slip-form paving machine during operations.

N. Cold-Weather Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:
   1. When air temperature has fallen to or is expected to fall below forty degrees (40°) F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than fifty degrees (50°) F and not more than eighty degrees (80°) F at point of placement.
   2. If subgrade is frozen, as determined by Geotechnical Engineer and/or Project Manager, thaw subgrade to depth of eight (8”) prior to placing concrete.
   3. Do not use frozen materials or materials containing ice or snow.
   4. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.

O. Hot-Weather Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:
   1. Cool ingredients before mixing to maintain concrete temperature below ninety degrees (90°) F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
   2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
   3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.7 CONCRETE FINISHING

A. Allow time for bleed water to appear, then scrape or push off all bleed water. Do not work water into surface.

B. Final level, light bull float, but do not trowel surface.

C. After darbying or bullfloating, stop finishing until bleeding has ceased and until concrete can support foot pressure with only about one eighth-inch (1/8") indentation. During or after the first floating, check planeness of surface with a ten foot (10') straightedge applied at not less than two different angles, and then cut down all high spots and fill all low spots to achieve a true plane within one eighth-inch (1/8") in ten feet (10').

D. Finishes:
   1. Medium Broom Finish: Provide a medium broom finish for all exterior concrete unless otherwise noted. Immediately after float finishing and tool work, roughen surface with fiber-bristle broom to match the approved mockup panel. Confirm direction or pattern of broom finish with the Project Manager prior to commencing slab placement.

E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a three eighths-inch (3/8") radius. Final concrete finish to completed following jointing. Surface/edging tool marks are not acceptable.

F. Accessible Ramps:
   1. Install per the Village of Waynesville or Warren County Technical Specifications, if applicable.

G. Do not use evaporative retarders as finishing aid.

3.8 CONCRETE CURING AND SURFACE TREATMENTS

A. General:
   1. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Maintain concrete with minimal moisture loss at a relatively constant temperature for the period necessary for hydration of the cement and hardening of concrete.
   2. Curing shall commence as soon as free water has disappeared from the concrete surface after placing and finishing. The curing period shall be seven days for all concrete unless test cylinders, made and kept adjacent to the structure and cured by the same methods, are tested with the average compressive strength equal to seventy percent (70%) of the specified twenty-eight (28) day strength.
   3. Curing shall be in accordance with ACI 301 procedures. Avoid rapid drying at the end of the curing period. During hot and cold weather, cure concrete in accordance with ACI 305R and ACI 306R.

B. Curing Methods: Perform curing of concrete by curing and sealing compound, by moisture curing, by moisture-retaining cover curing, or by combinations thereof, as herein specified. Coordinate with and choose a curing method that is compatible with the requirements for subsequent material usage on the concrete surface.
   1. Provide curing and sealing compound to exterior slabs, walks, curbs, etcetera as follows:
      a. Apply specified curing and sealing compound to concrete slabs as soon as final finishing operations are complete. Apply uniformly in continuous operation by power-spray or roller in accordance with manufacturer's directions. Recoat areas subjected to rainfall within three hours after initial application.
      b. Maintain continuity of coating and repair damage during period.
   2. Provide moisture curing by one of the following methods:
      a. Keep concrete surface continuously wet by covering with water.
      b. Continuous water-fog spray.

c. Covering concrete surface with specified absorptive cover, thoroughly saturating cover with water and keeping it continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with 4-inch lap over adjacent absorptive covers.

3. Provide moisture retaining cover curing as follows: Cover concrete surfaces with a moisture-retaining cover for curing concrete, placed in widest practical width with sides and ends lapped at least 3-inches and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

C. Curing Formed Surfaces: Where wooden forms are used, cure formed concrete surfaces by moist curing with forms in place for full curing period or until forms are removed. When forms are removed, continue curing by methods specified above for specified curing time.

3.9 JOINT

A. Construct joints true to line with faces perpendicular to surface.

B. Expansion Joints: Expansion joint material shall be provided at the following locations and shall be in place prior to the placing of concrete:
1. As shown on the Contract Drawings; or
2. At each end of curb return.
3. Between sidewalk and driveway slabs or service walks.
4. Between new concrete and existing concrete.
5. Between new concrete and fixed vertical objects.
6. At maximum one hundred twenty foot (120') spacing.
7. Provide half-inch (1/2”) thick by depth of the slab material, allow half-inch (1/2”) thickness for joint sealer.
8. As directed by Project Manager.
9. Thoroughly clean all surfaces prior to installation of sealant material.

C. Slip Joints:
1. To be used at all Expansion Joints except at buildings, curbs, ramps and stairs.
2. Dowels to be placed no closer than twelve-inches (12”) from edge of concrete and twenty-four-inches (24”) on-center.
3. Attach bases to the face of concrete forms using a double-headed nail or self-tapping screw.
4. Center of base shall be centered on form.
5. Prior to placing concrete, Speed Dowel sleeve shall be slipped over base.
6. Concrete shall not be placed directly over the Speed Dowel System. Place concrete minimum eighteen inches (18”) from Speed Dowel system and work concrete around the Speed Dowel System.
7. Concrete forms shall be removed with bases still attached. Bases may be reused.
8. Install slip dowels to the full depth of the embedded Speed Dowel sleeve and proceed with next concrete pour.
9. Greasing of dowels is not required. Embedded Speed Dowel Sleeve accommodates expansion and shrinkage movements that may occur.
10. Bent or badly sheared slip dowels shall not be used. Saw cut dowels recommended, deburr ends.
11. Place edge forms plumb. Out of plumb forms may result in misaligned dowels.

D. Contraction (Control) Joints in Walks: Contraction joints shall be formed with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut one eighth-inch (1/8") wide joints into concrete that has hardened sufficiently that cutting action will not tear, abrade, or otherwise damage surface, but before development of random contraction cracks. Saw cut joints shall be spaced at a distance equal to the width of the walk, but not over ten feet (10') unless approved by the Project Manager. Depth of joints shall be one-fourth (1/4) the slab thickness.

1. Tooled joints will not be allowed on concrete trails, unless directed by the Project Manager.

E. Curb and Gutter Contraction (Control) Joints: Space curb and gutter joints not more than twelve foot six-inches (12'-6") on center, and align them with sidewalk joints. Contraction joints shall be tooled. Form plane of weakness by inserting and later removing a metal divider, finish with an edger or groover, or by saw cutting a previously tooled joint.

3.10 FORM REMOVAL

A. Remove forms after concrete surface is hard enough so as not to be damaged in any way. Reasonable care is to be used in removing forms. Repair minor defects with high strength grout as per the Project Manager's direction. Plastering will not be permitted on exposed faces.

3.11 CLEANING

A. Perform cleaning during installation of the Work and upon completion of the Work. Remove all excess materials, debris, and equipment from the site. Repair any damage resulting from installation of the concrete.

B. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

3.12 PROTECTION AND REPAIR

A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Project Manager.

B. Drill test cores, where directed by the Project Manager, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory paving areas with portland cement concrete bonded to paving with epoxy adhesive.

C. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.

D. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material.

3.13 ACCEPTANCE

A. Concrete work will be accepted when it meets the specified strength and all other requirements of this specification.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Measurement will be based on the percentage complete for the lump sum contract amount for Concrete Walks, Curbs and Miscellaneous Flatwork.

4.2 PAYMENT

A. Payment will be made at the contract unit lump sum contract price, and shall include required materials, transportation, equipment, labor, excavation, stockpiling, disposing, hauling off, watering, dust control, erosion and sediment control, compaction, sub-grade preparation, formwork, placing of concrete, reinforcing, joints, curing, finishing and all other items required to complete the work as required in accordance with the Contract Drawings and Specifications.

END OF SECTION 32 13 13

SECTION 32 17 23 PAVEMENT MARKINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for furnishing and applying traffic markings as shown on the Contract Drawings and as directed by the Project Manager. All work shall be done in accordance with the Village, County, and/or ODOT Standards.

B. Related Sections:
1. Division 01 Section “Operations and Maintenance Data”.
2. Division 31 Section “Asphalt Pavement”.
3. Division 31 Section “Concrete Walks, Curbs, and Miscellaneous Flatwork”.

1.3 REFERENCES

A. All references below shall be from the most current edition.

B. Ohio Department of Transportation (ODOT) Construction Specifications.
1. Division 700: Materials, Section 713

1.4 SUBMITTALS

A. Product Data: For each type of product.
1. Include technical data and tested physical and performance properties.

B. Shop Drawings: For pavement markings.
1. Indicate pavement markings, colors, lane separations, defined parking spaces, and dimensions to adjacent work.
2. Indicate, with international symbol of accessibility, spaces allocated for people with disabilities.

C. Samples: For each exposed product and for each color and texture specified; on rigid backing, eight-inches (8”) square.

D. Turnover of paint used on the Project, one (1) gallon minimum of each type and/or color.

E. Operation and Maintenance Manual: See Division 01 Section “Operation and Maintenance Data” for manual requirements.

1.5 PROJECT CONDITIONS

A. Striping shall be applied on asphalt or portland cement concrete pavements when the air and pavement temperatures are as follows: for high-build waterborne paint, at least 45 °F and

expected to remain 45 °F or above for at least 24 hours; for low temperature waterborne paint, at least 35 °F and expected to remain 35 °F or above for at least 24 hours.

B. The pavement surface shall be dry and clean, and free of all latent materials, in accordance with the manufacturer's recommendations. Weather conditions shall be conducive to satisfactory results.

1.6 WARRANTY

A. Refer to Division 01.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver pavement marking materials to the Project site in the original packaging with seals unbroken with the manufacturer's labels containing brand name, type of material, date of manufacture, and directions for storage.

B. Store pavement marking materials in a clean, dry, protected location within temperature range required by the manufacturer. Protect stored materials from direct sunlight.

PART 2 - PRODUCTS

2.1 PAVEMENT MARKING PAINT

A. Waterborne Traffic Marking Paint, lead and chromate free, ready mixed, flat finish, VOC compliant with drying time of less than thirty (30) minutes. The following requirements shall be met, abrasion resistance, ASTM D968, bleed resistance, ASTM D969, flexibility ASTM D522, reflectance ASTM-E97, scrub resistance ASTM D2486.
   1. Color: As indicated

PART 3 - EXECUTION

3.1 EXAMINATION

A. Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of forty (40) deg F for oil-based materials and fifty-five (55) deg F for water-based materials, and not exceeding ninety-five (95) deg F.

B. Proceed with pavement marking only after unsatisfactory conditions have been corrected.

3.2 QUALITY CONTROL

A. Pre-installation Conference: Conduct at Project Site.
   1. Review methods and procedures related to marking pavement including, but not limited to, the following:
      a. Pavement aging period before application of pavement markings.
      b. Review requirements for protecting pavement markings, including restriction of traffic during installation period.

3.3 PREPARATION.

A. Do not apply pavement markings until layout, colors, and placement have been verified with the Project Manager.

B. Allow paving to age for a minimum of thirty (30) days before starting pavement marking.

C. Pavement surface shall be cleaned entirely of dust, dirt, debris, and loose material where markings are to be applied by brooming, air blasting, or other acceptable method. The surface shall be thoroughly dry prior to application.

3.4 PAVEMENT MARKING PAINT APPLICATION

A. Apply pavement parking paint in accordance with the manufacturer's recommendations.

B. Line Location: Before applying paint, chalk all striping locations for inspection by the Project Manager to ensure accurate location of line.

C. Parking Lot Striping: Lines shall be four-inches (4") wide (+/- one-quarter-inch (1/4")). Double lines shall be six-inches (6") apart. Stop lines shall be twenty four-inches (24") wide (+/- one-quarter-inch (1/4")).

D. Symbols and Lettering:
1. Apply graphic symbols and lettering with paint-resistant, die-cut stencils, firmly secured to pavement. Mask an extended area beyond edges of each stencil to prevent paint application beyond the stencil. Apply paint so that it cannot run beneath the stencil.

E. Equipment: Spray machine equipped with mechanical agitator, multiple applicators, and automatic skip control, capable of painting a clean-edged stripe of the designated width with straight edges. Bead dispenser shall be directly behind and synchronized with paint applicator. Spray nozzle and bead dispenser shall be shielded to prevent over spraying. Use adequate hand operated equipment in areas not accessible to striping machine.

F. Minimum Application Rates:
1. Minimum application rate shall be as recommended by the manufacturer to complete the Work.

3.5 CLEANING

A. Perform cleaning during installation of the Work and upon completion of the Work. Remove all excess materials, debris, and equipment from site. Repair any unsatisfactory markings, overspray, or spills that occurred during the project.

3.6 PROTECTION

A. Protect pavement markings until dry or bonded.

3.7 QUALITY ASSURANCE

A. Refer to Division 1 Section "Quality Assurance".

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Measurement will be based on the percentage complete for the lump sum contract amount for Pavement Markings.

4.2 PAYMENT

A. Payment will be made at the lump sum contract price, and shall include required materials, transportation, equipment, labor, as required in accordance with the Contract Drawings and Specifications.

END OF SECTION 32 17 23

SECTION 32 91 13 SOIL PREPARATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 01 Specification Sections, and related report documentation apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for the preparation of soil for seeding, sodding, or planting operations. Soil preparation consists of ripping, fertilizing, soil conditioning, and fine grading the topsoil. Soil preparation as specified herein must precede all seeding, sodding, and planting.

B. Related Sections:
1. Division 01 Section “Erosion and Sedimentation Control”.
2. Division 31 Section “Clearing and Grubbing”.
3. Division 31 Section “Earth Moving”.
4. Division 32 Section “Topsoil”.
5. Division 32 Section “Turfgrass Seeding”.
6. Division 32 Section “Sodding”.
7. Division 32 Section “Trees, Plants, and Groundcovers”.
8. Division 32 Section “Landscape Maintenance.”

1.3 DEFINITIONS

A. Fertilizer: A substance that is added to soil to help the growth of plants.

B. Soil Amendment: Any substance which is intended to improve the physical, chemical, or other characteristics of the soil.

C. Soil Conditioner: Combination of slow-release fertilizer, humate, and Mycorrhiza.

1.4 SUBMITTALS

A. See Division 01 Section “Submittals” for submittal requirements.

B. Testing Agency Qualifications: The Project Manager to approve prior to construction.

C. Soils Test Data: See Quality Control.
1. Material Test Reports
a. Soil analysis for native soils at the project site.

D. Product Data (for each type of product):
1. Include recommendations for application and use.
2. Include test data substantiating that products comply with requirements.
3. Material Certificates: For each type of soil conditioner, soil amendment, and fertilizer before delivery to the site, according to the following:

a. Manufacturer's qualified testing agency's certified analysis of standard products.
b. State, Federal, and other inspection certificates shall accompany invoice for materials showing source or origin.

E. Samples: For each bulk-supplied material, one (1) quart volume of each in sealed containers labeled with content, source, and date obtained. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of composition, color, and texture.

1.5 QUALITY CONTROL

A. Testing Agency: Retain an independent, state-operated, or university operated laboratory experienced in soil science, soil testing, and plant nutrition; with the experience and capability to conduct the testing indicated and that specializes in the types of tests to be performed.
1. Laboratories: Subject to compliance with requirements, provide testing of materials in the Section by a qualified testing laboratory approved by the Project Manager.
2. Multiple Laboratories: Work may be divided among qualified testing laboratories specializing in physical testing, chemical testing, and fertility testing.

B. Preconstruction Testing
1. Engage the approved testing agency to perform preconstruction soil analyses on existing on-site soil, imported topsoil, and pre-amended imported soil.
2. Notify Project Manager seventy-two (72) hours in advance of the dates and times when laboratory samples will be taken.

C. Soil Sampling Requirements
1. Sample Collection and Labeling: Have samples taken and labeled by the Contractor in the presence of the Project Manager and under the direction of the testing agency.
2. Number and Location of Samples: Minimum of five (5) samples for projects up to one (1) acre in size and two (2) additional samples for each additional acre of project size. Samples shall be collected randomly throughout the areas to receive similar soil preparation, including seed/sod, native seeding, planting beds, and gardens. Provide a site plan of the sampling locations to the Project Manager for approval, prior to sampling.
3. Procedures and Depth of Samples: Collect composite samples to a depth of six inches (6”) and combine in a clean plastic container.
4. Mixing of Samples: Mix samples together thoroughly, removing plant debris and breaking up clods.
5. Labeling: Label each sample with the date, location keyed to a site plan or other location system, visible soil condition, and sampling depth.

D. Testing Requirements
1. Soil Texture: Soil-particle, size-distribution analysis by the following methods according to SSSA's "Methods of Soil Analysis - Part 1-Physical and Mineralogical Methods":
a. Sieving Method: Report sand-gradation percentages for very coarse, coarse, medium, fine, and very fine sand; and fragment-gradation (gravel) percentages for fine, medium, and coarse fragments; according to USDA sand and fragment sizes.
b. Hydrometer Method: Report percentages of sand, silt, and clay.
2. Fertility Testing: Soil-fertility analysis shall, include the following:
a. Percentage of organic matter.
b. CEC, calcium percent of CEC, and magnesium percent of CEC.
c. Soil reaction (acidity/alkalinity pH value).
d. Buffered acidity or alkalinity.

e. Lime estimate.
f. Soil texture estimate.
g. Nitrogen ppm.
h. Phosphorous ppm.
i. Potassium ppm.
j. Manganese ppm.
k. Zinc ppm.
l. Iron ppm.
m. Boron ppm.
n. Copper ppm.
o. Sodium ppm
p. Sodium absorption ratio (SAR).
q. Soluble-salts ppm.
r. Presence and quantities of problem materials including salts and metals cited in the Standard protocol. If such problem materials are present, provide additional recommendations for corrective action.
s. Other deleterious materials, including their characteristics and content of each.

E. Recommendations: Based on the test results, provide recommendations for soil treatments, amendments, and conditioners to be incorporated to produce a soil suitable for healthy viable plant growth for the species indicated in the Contract Documents. Include, at a minimum, recommendations for nitrogen, phosphorous, and potassium fertilization, and for micronutrients.
1. Fertilizers and Soil Amendment Rates: State recommendations in weight per one thousand (1,000) sq. ft. for six inch (6") depth of soil.
2. Soil Reaction: State the recommended liming rates for raising pH or sulfur for lowering pH according to the buffered acidity or buffered alkalinity in weight per one thousand (1,000) sq. ft. for six inch (6") depth of soil.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and compliance with State and Federal laws if applicable.

B. Bulk Materials:
1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Do not move or handle materials when they are wet or frozen.
4. Accompany each delivery of bulk fertilizers and soil amendments with appropriate certificates.

C. Notify the Project Manager of delivery schedule in advance so material can be inspected upon arrival at the project site. Immediately remove unacceptable material from the project site.

1.7 PROJECT/SITE CONDITIONS

A. General: Do not perform work when climate and existing site conditions will not provide satisfactory results.

B. Vehicular site access shall be limited to the area(s) indicated on the Contract Drawings or as defined by the Project Manager.

C. Damage to turf, natural areas, pavements, irrigation systems, underground utilities, and other improvements shall be repaired by the contractor at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Topsoil: Shall be as specified under Division 32 Section “Topsoil”.

B. Soil Amendments:
   1. Class I compost material shall consist of aged organic matter, free of weed or other noxious plant seeds, lumps, stones, or other foreign contaminants harmful to plant life, and having the following characteristics based on a nutrient test performed no longer than 3 months prior to its incorporation into the project:
      a. Organic matter: twenty-five (25%) percent maximum.
      b. Salt content: Five (5.0) mmhos/cm maximum.
      c. pH: 7.5, maximum.
      d. Carbon to nitrogen ratio shall be less than 20:1.
   2. Mountain peat, aspen humus, gypsum and sand will not be accepted.

C. Soil Conditioners:
   1. In general, native seed areas shall receive Soil Conditioners unless otherwise noted or specified by the Project Manager. For the purpose of bidding the contractor shall assume the products listed below will be applied at the rate specified by the manufacturer for each planting type identified in the Construction Documents. Once soils tests have been received and a determination is made on the proper amount to be added to the site-specific soils, the rate to be applied may be adjusted per the price based on the Schedule of Values for Soil Conditioner.
      a. Organic slow-release fertilizer (6-1-1), acceptable product: “Biosol” or approved equal.
      b. Granular Humic Acid soil conditioner, acceptable product: “Menefee Humate Soil Conditioner”.
      c. Mycorrhizal Fungi:
         1) Woody Plantings: Dry, granular inoculant containing at least ninety-five (95) million spores per lb (0.45 kg) of ectomycorrhizal fungi, thirty-three percent (33%) hydrogel, and a maximum of five and one-half percent (5.5%) inert material.

PART 3 - EXECUTION

3.1 SITE EXAMINATION

A. Examine the site for compliance with requirements and other conditions affecting performance.
   1. General: Verify that existing site conditions are as specified and indicated on the Contract Drawings before beginning work under this Section.

2. Grades: Inspect to verify rough grading is within +/- one tenth of one foot (0.1') of grades indicated and specified.
3. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within the work area.
4. Unsatisfactory Conditions: The General Contractor shall notify the Project Manager in writing of any known unsatisfactory site conditions. If the soil is found to be unfit to support planting as described above, it is to be removed and replaced with clean soil from a source approved by the Project Manager.

B. Locate all utilities (sewer, water, irrigation, gas, electric, phone, and other conduits and subsurface equipment) prior to commencing work. The Contractor shall be responsible for the protection of all new and existing infrastructure and repair any damages caused by work under this Section at no additional cost to the Owner.

C. Protect grade stakes set by others until removal is directed by the Project Manager.

3.2 PREPARATION

A. In general, turf and planting areas shall receive Soil Amendments unless otherwise noted or specified by the Project Manager. For the purpose of bidding, the Contractor shall assume all areas to receive soil amendments will be at four (4) cubic yards per one thousand (1,000) square feet. Once soils tests have been received and determination is made on the proper amount to be added the site-specific soils the rate to be applied may be adjusted per the price based on the Schedule of Values for Soil Amendment.

B. Weed Seed Eradication: Perform pesticide treatment over the entire area to be planted during the growing season. Allow enough time to successfully complete the entire pesticide treatment process (germinate / terminate) before proceeding with planting.
1. Water surface one half (1/2") inch per week for two (2) weeks prior to application if natural precipitation does not supply this amount to encourage weed seed germination.
2. Notify Project Manager forty-eight (48) hours in advance of each pesticide treatment.
3. Apply pesticide in accordance with manufacturer's recommendations.
4. Two (2) weeks after the first pesticide application, review surface for evidence of plant growth.
5. If there is no evidence of plant growth, obtain the Project Manager's approval of surface conditions to proceed with Soil Preparation.
6. If more than 10% of the area to be planted contains new plant growth, the pesticide and watering application shall be repeated until new plant growth is satisfactorily eradicated.
7. Remove plant debris from treated area.

C. Areas of Compacted Topsoil: Areas within the work limits, or as defined on Contract Drawings or by the Project Manager, that have vegetation that is sparse, stunted, anemic, weedy or was used as construction staging, a parking area, and/or subjected to heavy use will require ripping to prepare the soil for planting. Scarify compacted soil to an eight-inch (8") minimum depth to loosen topsoil.

D. Areas of Disturbed Topsoil: Areas disturbed but not severely compacted, as determined by the Project Manager, shall be deep tine aerated or shattered to prepare the soil for revegetation.

E. Areas of Undisturbed Natural Topsoil: Undisturbed sites that are or were supporting healthy plant growth need only surface seedbed preparation prior to sowing seed.

3.3 INSTALLATION OF SOIL AND SOIL AMENDMENTS

A. Proceed with installation only after unsatisfactory conditions have been corrected and approved by the Project Manager.

B. Beginning of installation means Acceptance of existing conditions by the Contractor.

C. Install topsoil as required in Division 31 section "Earth Moving" and Division 32 Section "Topsoil".

D. Timing: Perform soil preparation just prior to planting operations and in accordance with final planting schedule.
   1. Coordinate with irrigation system installation to avoid damage.

E. Soil Preparation in Turf Grass and Planting Bed Areas:
   1. Apply Soil Amendments at the following rates:
      a. Soil Amendments: Bid quantity to be four (4) cubic yards per one thousand (1,000) square feet, or per soil test recommendations.
      b. Fertilizer: Refer to Related Sections. Mycorrhizal inoculants: Apply per manufacturer's instructions and quantities appropriate to the planting type.
   2. After applying Soil Amendments, thoroughly till area to depth of six inches (6") minimum by plowing, rototilling, harrowing, or disking until soil is well pulverized and thoroughly mixed. Soil Conditioners and Fertilizer shall be applied topically once final grade has been established and just prior to sodding or seeding.
   3. Take soil samples, in similar locations to pre-construction testing, and test amended soil to ensure the final product meets the laboratory recommendations prior to planting.

F. Soil Preparation in Native Grass Areas:
   1. Apply Soil Amendments/Conditioners per manufacturer's recommendation, at the quantities indicated in soil test results.
   2. Thoroughly till the area to depth of six inches (6") minimum by plowing, rototilling, harrowing, or disking until soil thoroughly mixed.

G. Fine Grading in all Landscape Areas:
   1. Complete fine grading for all areas prior to seeding or planting. Allow for natural settlement.
   2. For ground surface areas surrounding buildings to be landscaped, maintain required positive drainage away from buildings.
   3. Establish finish grades as follows:
      a. Lawn, Seeded, and Unpaved Areas: Finish areas to within not more than +/- five one-hundredths (.05') of a foot above or below required elevations.
      b. Athletic Fields: Finish areas to within not more than +/- two one-hundredths (0.02') of a foot from required elevation.
   4. Finish grade shall be below edge of pavement prior to sodding, seeding or planting.
      a. Sodded Areas: Allow one and one-half inches (1-1/2") for sod.
      b. Seeding Areas: Allow one inch (1") for seed.
      c. Planting Beds: Allow four inches (4") for mulch.

5. Compaction of Surface Grade Prior to Landscape Installation: Firm, but not hard, eighty five percent (85%) standard Proctor density within two percent (2%) optimum moisture.
6. Turfgrass Lawn Areas: Prior to acceptance of grades, hand rake to smooth, even surface, free of debris, clods, rocks and organic matter greater than one inch (1").
7. Native Seed Areas: Area shall not be graded smooth but left in a rough condition after tilling. Tilling shall occur parallel to the contours only.
8. Restore planting areas to specified condition if eroded or otherwise disturbed after fine grading and prior to planting.

3.4 INSPECTION

A. Provide notice to the Project Manager requesting inspection at least seventy-two (72) hours prior to anticipated date of the work.

B. Deficiencies: The Project Manager will specify deficiencies to the Contractor who shall make satisfactory adjustments and shall again notify the Project Manager for an additional inspection.

3.5 CLEANING

A. Protect areas adjacent to soil preparation and planting areas from contamination. Keep adjacent paving and construction clean and work area in an orderly condition.

B. Remove debris and excess materials from site. Clean out drainage inlet structures. Clean all paved and finished surfaces that are soiled as a result of work under this Section.

3.6 PROTECTION AND REPAIR

A. Provide and install barriers as required and as directed by the Project Manager to protect completed areas against damage from pedestrian and vehicular traffic until Acceptance by the Owner.

B. Protect areas of in-place soil from additional compaction, disturbance, and contamination. Prohibit the following practices within these areas except as required to perform planting operations:
1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Vehicle traffic.
4. Foot traffic.
5. Erection of sheds or structures.
6. Impoundment of water.
7. Excavation or other digging unless otherwise indicated.

C. If prepared soil or subgrade is disturbed or contaminated prior to planting, the Contractor shall restore or replace the planting soil as directed by the Project Manager at no cost to the Owner.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Measurement will be based on the percentage complete for the lump sum contract amount for Soil Preparation.

4.2 PAYMENT

A. Payment will be made at the lump sum contract price, and shall include required materials, transportation, equipment, labor, earthwork, stockpiling, disposing, hauling off, watering, dust control, erosion and sediment control, fine grading, and all other items as required in accordance with the Contract Drawings and Specifications.

END OF SECTION 32 91 13

SECTION 32 91 20 TOPSOIL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 01 Specification Sections, and related report documentation, apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for furnishing, stockpiling, and placing topsoil on a previously prepared subgrade.

B. Related Sections:
1. Division 01 Section “Erosion and Sedimentation Control”.
2. Division 31 Section “Earth Moving”
3. Division 32 Section “Soil Preparation”.
4. Division 32 Section “Turfgrass Seeding”.
5. Division 32 Section “Sodding”.
6. Division 32 Section “Trees, Plants, and Groundcovers”.
7. Division 32 Section “Landscape Maintenance.”

1.3 DEFINITIONS

A. Duff Layer: The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.

B. Finish Grade: Elevation of finished surface of planting soil.

C. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.

D. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

E. Planting Area: Areas to be planted.

F. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

G. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

H. Subsoil: All soil beneath the topsoil layer of the soil profile and typified by the lack of organic matter and soil organisms.

I. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.

1.4 SUBMITTALS

A. See Division 01 Section “Submittals” for submittal requirements.

B. Testing Agency Qualifications: The Project Manager to approve prior to construction.

C. Soil Analysis Report: See Quality Control.
   1. Material Test Reports
      a. Soil analysis for each imported topsoil to be used.
      b. Soil analysis for each amended planting soil.
      c. Soil analysis for each manufactured topsoil.

D. Product Data (for each type of product):
   1. Include recommendations for application and use.
   2. Include test data substantiating that products comply with requirements.
   3. Material Certificates: For each type of soil conditioner, soil amendment, and fertilizer before delivery to the site, according to the following:
      a. Manufacturer's qualified testing agency's certified analysis of standard products.
      b. State, Federal, and other inspection certificates shall accompany invoice for materials showing source or origin.

E. Samples: One (1) quart volume per five hundred (500) cubic yards for each type of soil used. Soil shall be in sealed containers with content, source, and date obtained. Each Sample shall be typical of the lot of material to be furnished and provide an accurate representation of composition, color, and texture and be accompanied by the results of the analysis.

F. A source for imported material (imported topsoil, amended planting soil, manufactured topsoil, etc) shall be submitted for approval by the Project Manager.
   1. Imported Material from a Quarry: A letter shall be submitted to the Project Manager specifying the type of material.
   2. Imported Material from a Source Other than a Quarry: Submit a Phase I Environmental Assessment (ESA) and sampling protocol and/or a Phase II ESA or similar.

1.5 QUALITY CONTROL

A. Existing On-Site Topsoil:
   1. Sample Collection and Labeling: Samples shall be taken and labeled by the Contractor in the presence of the Project Manager.
   2. A map of the site illustrating the locations of each sample is to be submitted to the Project Manager for approval prior to collecting the samples. Samples shall be collected randomly throughout the areas to receive similar topsoil, including seed/sod, native seeding, planting beds, and gardens.
   3. Follow instructions from soil testing laboratory when collecting samples.
   4. A minimum of five (5) samples for projects up to one (1) acre in size and two (2) additional samples for each additional acre of project size. Individual tests are to be completed for each sample.

5. Submit soil analysis report for stockpiled on-site topsoil from the State University Agricultural Extension Service or other approved soil testing laboratory. Report shall cover soil textural classification (percentages of sand, silt, and clay), pH, percentage organic matter, and soluble salts (electric conductivity in millimos/centimeter) and shall include additive recommendations.
6. Testing will be at the expense of the Contractor.

B. Imported Topsoil:
1. Submit source location for topsoil to be imported to site for approval by the Project Manager.
   a. Any topsoil or fill material to be moved to and placed on Owner's property must be free of contamination (observed or previously documented) and be acceptable for unrestricted residential use. Imported topsoil or material that contains stains, odors, or debris regardless of analytical results shall not be imported to Owner's property.
   b. The Contractor shall submit appropriate environmental information to the Project Manager.
2. A soil analysis report for topsoil imported to site shall be provided, from the State University Agricultural Extension Service or other approved soil testing laboratory. Report shall cover soil textural classification (percentages of sand, silt, and clay), pH, percentage organic matter, and soluble salts (electric conductivity in millimos/centimeter) and shall include additive recommendations.
   a. One 1-quart sample per five hundred (500) cubic yards of imported soil is required, with individual tests completed for each sample.
   b. Follow instructions from soil testing laboratory when collecting samples.
3. Testing will be at the expense of the Contractor.

C. Manufactured Topsoil:
1. A soil analysis report for stockpiled on-site topsoil shall be provided from the State University Agricultural Extension Service or other approved soil testing laboratory. Report shall cover soil textural classification (percentages of sand, silt, and clay), pH, percentage organic matter, and soluble salts (electric conductivity in millimos/centimeter)]
   a. Test is to be completed within sixty (60) days preceding delivery to site. Report shall cover soil textural classification (percentages of sand, silt, and clay), pH, percentage organic matter, and soluble salts (electric conductivity in millimos/centimeter).

1.6 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver or place topsoil in a frozen, wet, or muddy condition.

B. Protect stored and placed topsoil from vehicular traffic, equipment storage, material storage, or from contaminants or pollution sources. Topsoil that is compacted or tainted during construction is to be removed from site and disposed of at a licensed landfill at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 ON-SITE TOPSOIL

A. Topsoil previously stripped and stockpiled prior to earthwork operations. See Division 31 Section “Earth Moving”.

2.2 IMPORTED TOPSOIL

A. All topsoil shall be a loam or sandy loam conforming to ASTM D 5268. At least ten (10) days prior to topsoil delivery, notify the Project Manager of the source(s) from which topsoil is to be furnished. Topsoil shall be furnished by the Contractor and shall be a natural, friable soil representative of productive soils and shall meet the following conditions.
   1. It shall be obtained from the top six-inches (6”) of well drained areas.
   2. Fertile, friable, loamy soil, reasonably free from subsoil, refuse, roots, heavy or stiff clay, stones larger than one-inch (1”), coarse sand, noxious seeds, sticks, brush, litter, and other deleterious substances; suitable for the germination of seeds and the support of vegetative growth.
   3. The pH value shall be between 6.5 and 7.5.
   4. Soil Texture:
      a. Sand:thirty percent (30%) – fifty percent (50%)
      b. Silt: thirty percent (30%) – fifty percent (50%)
      c. Clay: five percent (5%) – thirty percent (30%)
   5. Additives: As determined by soil fertility tests.
   6. Percent Organic Content:
      a. Turf grass shall be three to five percent (3-5%) maximum after amending or conditioning.
      b. Native grass shall be one to three percent (1-3%) maximum after amending or conditioning.
   7. Soluble Salts: Electric conductivity (EC) shall be less than two (2.0) mmhos/cm for turfgrass areas, dryland areas, and planting beds.

PART 3 - EXECUTION

3.1 SITE EXAMINATION

A. Examine areas where the Work of this Section will be performed for compliance with requirements and conditions affecting installation and performance.

   1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within the work area.
   2. Verify that final grades are completed in accordance with the Contract Drawings.

B. Proceed with installation only after unsatisfactory conditions have been corrected and approved by Project Manager.

3.2 INSTALLATION OF TOPSOIL

A. Scarify compacted subgrade to an eight-inch (8”) depth to bond topsoil to subsoil. Place topsoil to a minimum depth of six inches (6”) after settlement. Topsoil shall be free from weeds, sod, and material larger than 1-inch (1”), toxic substances, litter, or other deleterious material. Spread evenly and grade to elevations and slopes shown on the Contract Drawings. Hand rake inaccessible areas to machine grading.

B. Utilize salvaged topsoil as the top layer to the extent available. If enough on-site material is not available, the Contractor shall furnish and install imported topsoil in the manner described above. Topsoil shall be mixed thoroughly with the salvaged topsoil prior to placement.

3.3 CLEANING

A. Keep adjacent paving and other areas free of topsoil. Maintain a clean and orderly work area.

B. Remove debris and excess materials from site. Clean out drainage inlet structures. Clean all paved and finished surfaces that are soiled as a result of work under this Section.

3.4 PROTECTION AND REPAIR

A. Provide and install barriers as required and as directed by the Project Manager to protect completed areas against damage from pedestrian and vehicular traffic until Acceptance by the Owner.

B. Protect areas of topsoil from additional compaction, disturbance, and contamination. Prohibit the following practices within these areas except as required to perform planting operations:
1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Vehicle traffic.
4. Foot traffic.
5. Erection of sheds or structures.
6. Impoundment of water.
7. Excavation or other digging unless otherwise indicated.

C. If prepared soil or subgrade is disturbed or contaminated prior to planting, the Contractor shall restore or replace the planting soil as directed by the Project Manager at no additional cost to the Owner.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. On-Site Stockpiled Topsoil: Measurement will be based on the percentage complete for the lump sum contract amount for Topsoil.

B. Imported Topsoil: Measurement will be based on the percentage complete for the lump sum contract amount for Topsoil.

C. Manufactured Topsoil: Measurement will be based on the percentage complete for the lump sum contract amount for Topsoil.

4.2 PAYMENT

A. Payment will be made at the lump sum contract price, and shall include required materials, transportation, equipment, labor, earthwork, stripping, stockpiling and placing of topsoil, loading, transporting, re-transporting to new locations (from onsite or off site stockpiles) spreading to specified depth disposing of unusable materials, hauling off, watering, dust control, erosion and sediment control, finish grading, and all other items required to bring the site to the required lines and grades as required in accordance with the Contract Drawings and Specifications.

END OF SECTION 32 91 20

SECTION 32 92 19 TURFGRASS SEEDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 01 Specification Sections, and related report documentation apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for installation of turfgrass lawns, hydromulch, and establishment of the seeded areas the be achieved as outlined in these Specifications until Final Acceptance.

B. Related Sections:
1. Division 01 Section “Erosion and Sedimentation Control”.
2. Division 31 Section “Earth Moving”
3. Division 31 Section “Watering”.
4. Division 32 Section “Soil Preparation”.
5. Division 32 Section “Topsoil”.
6. Division 32 Section “Trees, Shrubs, and Groundcovers”.
7. Division 32 Section “Landscape Maintenance”.

1.3 REFERENCES

A. Comply with U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act and be equal to or better in quality than the standards for Certified Seed.

B. Ohio Department of Transportation (ODOT) – Standards Specifications for Road and Bridge Construction.

1.4 DEFINITIONS

A. Finish Grade: Elevation of finished surface of planting soil.

B. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, Pesticides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

C. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

D. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

E. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or top surface of a fill or backfill before planting soil is placed.

F. Subsoil: All soil beneath the topsoil layer of the soil profile and typified by the lack of organic matter and soil organisms.

G. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil, but in disturbed areas such as urban environments, the surface soil can be subsoil.

H. Weeds: Any weed listed as a "prohibited noxious weed" in Ohio, including but not limited to:

1. Shatter cane (Sorghum bicolor).
2. Russian thistle (Salsola Kali var. tenuifolia).
3. Johnsongrass (Sorghum halepense).
4. Wild parsnip (Pastinaca sativa).
5. Grapevines (Vitis spp.), when growing in groups of one hundred or more and not pruned, sprayed, cultivated, or otherwise maintained for two consecutive years.
6. Canada thistle (Cirsium arvense).
7. Poison hemlock (Conium maculatum).
8. Cressleaf groundsel (Senecio glabellus).
9. Musk thistle (Carduus nutans).
10. Purple loosestrife (Lythrum salicaria).
11. Mile-A-Minute Weed (Polygonum perfoliatum).
12. Giant Hogweed (Heracleum mantegazzianum).
13. Apple of Peru (Nicandra physalodes).
14. Marestail (Conyza canadensis)
15. Kochia (Bassia scoparia).
16. Palmer amaranth (Amaranthus palmeri).
17. Kudzu (Pueraria montana var. lobata).
18. Japanese knotweed (Polygonum cuspidatum).Yellow Groove Bamboo (Phyllostachys aureasculata), when the plant has spread from its original premise of planting and is not being maintained.
19. Field bindweed (Convolvulus arvensis).
20. Heart-podded hoary cress (Lepidium draba sub. draba).
21. Hairy whitetop or ballcress Lepidium appelianum).
22. Perennial sowthistle (Sonchus arvensis).
23. Russian knapweed (Acroptilon repens).
24. Leafy spurge (Euphorbia esula).
25. Hedge bindweed (Calystegia sepium).
26. Serrated tussock (Nassella trichotoma).
27. Columbus grass (Sorghum x almum).
28. Musk thistle (Carduus nutans).
29. Forage Kochia (Bassia prostrata).
30. Water Hemp (Amaranthus tuberculatus).

1.5 SUBMITTALS

A. See Division 01 Section "Submittals" for submittal requirements.

B. Materials: The Contractor shall submit to the Project Manager for approval a complete list of all materials to be used during this portion of the work prior to delivery of any materials to the

site. Include complete data on source, amount, and quality. This submittal shall in no way be construed as permitting substitution for specific items described on the plans or in these specifications unless approved in writing by the Project Manager.

1. Certification of Grass Seed: From seed vendor for each grass seed monostand or mixture stating the botanical and common name, percentage by weight of each species and variety, percentage of purity, germination, and weed seed. Include the year of production and the date of packaging.
    a. Submit to the Project Manager lab germination test results for all grass species. Submit an affidavit that describes estimated purity for all forb species that are not typically tested.
2. Pesticides (if applicable): Include product label and manufacturer's application instructions specific to the Project.
3. Fertilizers (if applicable): Include product label and manufacturer's application instructions specific to the Project.
4. Mulch: Include product label and manufacturer's application instructions specific to the Project. The Contractor shall provide ship tickets to verify application rates.
5. Tackifier: Include product label and manufacturer's application instructions specific to the Project.
6. Product Certificates: For soil amendments and fertilizers, from the manufacturer.

C. Qualification Data: Qualified landscape maintenance contractor.

D. Pesticide application records, per State requirements, if applicable.

E. Material Test Reports:
1. Soil analysis for native soils at the project site: See Division 32 Section "Soil Preparation".
2. Soil analysis for each topsoil to be used.
3. Analysis for each soil amendment.

F. Analysis and standards: Wherever applicable, for non-packaged materials, provide digital copies of analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists.

G. Planting schedule: Submit in writing the proposed planting schedule, indicating dates for topsoil placing, site preparation, pesticide treatments, soil preparation, sodding, seeding, and coordination with plant procurement, planting soil preparation, plant delivery and planting. Schedule all work during specified planting seasons. Once accepted, revise dates only as approved by the Project Manager, after documentation of reasons for delays.

H. Maintenance Instructions: Procedures for maintenance per Division 32 Section "Landscape Maintenance" or per establishment subsection.

I. Contract Closeout Submittals:
1. Operating and Maintenance Data: At completion of work, submit one (1) digital copy to the Project Manager in accordance with Division 01 Section "Contract Closeout". Include directions for irrigation, aeration, mowing, fertilizing, and spraying as required for continued and proper maintenance through full growing season and dormant period.
2. Warranty for Turfgrass Seed Areas: At Substantial Completion, submit a written warranty to the Project Manager based upon specified requirements.

1.6 QUALITY CONTROL

A. Maintenance Qualifications: The maintenance contractor shall not be more than two (2) hours normal travel time from the project site.
   1. Pesticide Applicator: Applicators shall be an Ohio State Licensed, Commercial Applicator.

B. Soil Analysis: See Division 32 Section “Soil Preparation” and Division 32 Section “Topsoil”

C. Pre-installation Conference: Conduct a meeting at the Project site to coordinate the seeding process with the Project Manager and other trades. This meeting shall include coordination of equipment movement within planting areas to avoid soil compaction, reviewing proposed methods of installation, reviewing performance criteria and maintenance procedures, and reviewing underground utility location maps and plans. This meeting shall be coordinated by the Contractor and comply with requirements in Division 01.

D. Standards: All materials and methods used during this portion of the work shall meet or exceed applicable federal, state, county, and local laws, and regulations. All seed shall be free from insects and disease. Species shall be true to their scientific name as specified.

E. Any turfgrass seed species substitutions shall be submitted to and approved by the Project Manager prior to installation.

F. All grass species shall be supplied as pure live seed.

G. Equipment: The Contractor shall furnish all equipment free of noxious weeds, weed seed, plant material, and contaminated soil.

H. The Project Manager reserves the right to reject the seed at any time prior to Acceptance and that fails to meet specification requirements. Promptly remove rejected seed from site.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Bulk Materials:
   1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
   2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
   3. Accompany each delivery of bulk fertilizers and soil amendments with appropriate certificates.

B. Seed and Other Packaged Materials: Deliver seed and packaged materials in original unopened containers bearing weight, certified analysis, and name of supplier. Store in a manner to prevent the materials from becoming wet and deteriorating. Seed that has become wet, moldy, or damaged in transit or in storage will not be acceptable.

C. Fertilizer: Deliver inorganic or chemical fertilizer to site in original unopened container bearing manufacturer’s guaranteed chemical analysis, name, trade name, trademark, and conformance to state law, and bearing name and warranty of producer.

D. Material will be inspected upon arrival at project site. The Project Manager will reject any opened or unacceptable materials as described above.

E. Immediately remove unacceptable material from job site.

1.8 PROJECT/SITE CONDITIONS

A. Work scheduling: Proceed with and complete landscape work as rapidly as portions of the site become available, working within the specified planting season and approved schedule.

B. Vehicular accessibility on site shall be as directed by the Project Manager.

C. Seeding Season: Seeding shall occur as specified below.

Seed Type	**Irrigated Areas Only**	**Non-Irrigated Areas**
Bluegrass Lawn	April 15-Sept 1	N/A

D. Coordination:
1. Coordinate with construction of utilities on site. Do not begin placing turfgrass seed until underground work is completed in the area.
2. Coordinate seeding with the approved schedule. Limit construction access to areas where topsoil has been placed and seeding will occur. Limit fine grading to areas that can be prepared for planting within twenty-four (24) hours after fine grading.
3. No vehicular or equipment access shall be allowed within areas that have been seeded.
4. Coordinate with Contractors work requiring access to site over seeded areas.
5. Coordinate with installation of underground irrigation system.

1.9 WARRANTY

A. Warranty for Seeded Turf Areas: Warrant areas in seed to be in a healthy, vigorous growing condition, and for consistency and completion of coverage for a period of one (1) year from date of Substantial Completion as a full stand of grass. After seed germination, re-seed any spots where seed has not germinated within the total seeded area. Continue this procedure until a successful stand of grass is growing and accepted by the Project Manager.

B. Reseeding will not be allowed in any season considered unfavorable for seeding by the Project Manager.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Soil Preparation: See Division 32 Section “Soil Preparation.

B. Topsoil: See Division 32 Section “Topsoil”.

C. Turf Seed:
1. Seed shall be fresh, clean and new crop mixture mixed by an approved method.

2. Blend: Kentucky bluegrass minimum ninety percent (90%) and Perennial ryegrass maximum ten percent (10%):
    a. Include at least four (4) improved Kentucky bluegrass cultivars, each of a different type classification. At least one cultivar shall be an aggressive type and one shall be shade tolerant. Submit list of proposed varieties to the Project Manager a minimum of ten (10) days prior to seeding.
    b. Application rate:
        1) Mechanical Seeding: Four (4) pounds pure live seed (PLS) per one thousand (1,000) square feet.
        2) Hand Broadcast Seeding: Eight (8) pounds pure live seed (PLS) per one thousand (1,000) square feet.
3. The formula used for determining the quantity of PLS shall be:
   Pounds of Seed x (Purity x Germination) = Pounds of PLS.

D. Mulch:
1. Straw: Shall be certified weed free. Straw in a stage of decomposition will not be accepted.
2. Engineered Wood Strand Erosion Control Mulch: All wood material composed of loose, thin wood pieces with a high length to width ratio. Predominant species shall be Lodge-pole Pine, Hemlock, White Fir, Douglas Fir, and other conifer species with no more than ten percent (10%) fine material or dust. Shall be free of noxious weeds and chemicals.
    a. Length: 2 ½" to 8".
    b. Width: 3/16".
    c. Thickness: 1/10" to 1/7".
3. Hydromulch: Shall consist of virgin wood fibers manufactured from clean, whole wood chips. Fiber shall not be produced from sawdust, paper, cardboard, or residue from paper pulp. The fiber mulch shall be dyed green and shall be biodegradable and not inhibit plant growth. The wood cellulose fiber shall consist of the following properties:
    a. Percent Moisture Content: 10.0% +/- 3.0%.
    b. Percent Organic Matter: 99.3% +/- 0.2%.
    c. Percent Ash Content: 0.7% +/- 0.2%.
    d. pH: 4.9 +/- 0.5.
    e. Water Holding Capacity: 1200-1600 grams.

E. Tackifier: Tackifier shall consist of free flowing, non-corrosive powder produced from the natural plant gum of Plantago insularis (desert Indianwheat). The powder shall consist of the following properties:
1. Protein Content: 1.6 +/- 0.2%
2. Ash Content: 2.7 +/- 0.2%.
3. Fiber: 4.0 +/- 0.2%.
4. pH 1% Solution: 6.5-8.0.

F. Fertilizer: Inorganic mixture with following chemical composition: (20-5-10) with fifty percent (50%) sulfur coated urea (no iron), or as recommended by testing lab based on soil sample results.

G. Water: Water shall be free of substances that may be harmful to seed growth. Hoses and other watering equipment necessary to water the seed to be furnished by Contractor.

2.2 PESTICIDES

A. General: Pesticide, registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use 'Restricted Use' pesticides unless authorized in writing by the Project Manager and authorities having jurisdiction.

B. Ensure that applications adhere to the product label for restrictions and landscape sites.

C. Selective for either of the following types:
   1. Broadleaf:
      a. 2,4-D Amine,
      b. Clopyralid,
      c. Aminopyralid,
      d. Triclopyr,
      e. Or approved equal.
   2. Grasses:
      a. Imazapic,
      b. Indaziflam,
      c. Or approved equal.

D. Non-Selective: Broadleaf or Grasses
   1. Glyphosate,
   2. Or approved equal.

2.3 EROSION-CONTROL MATERIALS

A. Erosion-Control Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended steel wire staples, six (6") inches long.

B. Erosion-Control Fiber Mesh: Biodegradable burlap or spun-coir mesh, a minimum of 0.92 lb/sq. yd., with fifty (50%) to sixty-five (65%) percent open area. Include manufacturer's recommended steel wire staples, six (6") inches long.

C. Erosion-Control Mats: Cellular, non-biodegradable slope-stabilization mats designed to isolate and contain small areas of soil over steeply sloped surface, of three (3")-inch nominal mat thickness. Include manufacturer's recommended anchorage system for slope conditions.
   1. Products: Subject to compliance with requirements, provide one of the following:
      a. Invisible Structures, Inc.; Slopetame 2.
      b. Presto Products Company, a business of Alcoa; Geoweb.
      c. Tenax Corporation - USA; Tenweb.

2.4 SUBSTITUTIONS

A. All substitutions shall be submitted to and approved by the Project Manager prior to installation.

PART 3 - EXECUTION

3.1 SITE EXAMINATION

A. Examine areas to be planted for compliance with requirements and other conditions affecting performance.
   1. Grades shall be in conformance with Division 31 Section “Earth Moving”. Finish grades shall have consistent slopes as indicated on the Contract Drawings.
   2. Soil preparation of seeded areas shall be in conformance with Division 32 Section “Soil Preparation”.
   3. Verify that no foreign or deleterious material or liquid such as, but not limited to, paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in the soil within the work area.

B. Locate, protect, and maintain the irrigation system during seeding operations. Verify that the irrigation system is operable, and a coverage test has been completed and approved prior to seeding by the Project Manager. Irrigation system components damaged during seeding operations shall be replaced or repaired to current Indy Parks irrigation standards at the Contractor’s expense.

C. Protect grade stakes set by others until removal is directed by the Project Manager.

3.2 PREPARATION

A. Notify the Project Manager at least seven (7) working days prior to start of seeding operations.

B. Utilize equipment having low unit pressure ground contact within seeding areas.

C. Limit subgrade preparation to areas that can be seeded within twenty-four (24) hours. Seeding beyond twenty-four (24) hours of preparation shall only be done with the approval of the Project Manager.

D. Uniformly moisten excessively dry soil that is not workable.

E. The Contractor shall prepare the soil of all areas to be sodded in accordance with the requirements of Division 32 Section “Soil Preparation”.
   1. Do not mix or place soils and soil amendments in frozen, dry, or, excessively wet conditions.
   2. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.

F. Weed Control: See Division 32 Section “Soil Preparation” for required weed control procedures. Do not proceed with planting until the Project Manager has approved the specified and completed weed control measures.

G. Fine Grading: See Division 32 Section “Soil Preparation”.
   1. Verify all areas are graded to drain at a minimum of two percent (2%) or as indicated on the Contract Drawings. Maintain positive drainage, prevent ponding and direct run-off into catch basins, drainage structures, etc., and provide well-contoured surface prior to proceeding.

2. Verify that the subsurface drainage system and drain inlets, if present, are operative.
3. . . A firm weed-free seed bed is required. The seed bed shall be totally free from rock or clay clods or any materials over one inch (1") in diameter. Remove sticks, roots, rubbish, and other extraneous matter and legally dispose of them off-site.

H. Transition Grading: When areas of new seed abut existing turf areas, grade shall transition to prevent any abrupt grade breaks.

I. When grading is completed, the soil shall be firmed by float dragging, followed by steel raking, to provide for the proper seeded surface.
1. Newly Graded Subgrades: Loosen subgrade to a minimum depth of six inches (6").
2. Unchanged Subgrades: If turf is to be planted in areas unaltered or undisturbed by excavating, grading, or surface-soil stripping operations, prepare surface soil as follows:
   a. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
   b. Loosen surface soil per Division 32 Section "Soil Preparation".
   c. Legally dispose of waste material, including grass, vegetation, and turf, off site.

J. Obtain the Project Manager's approval of finished grade prior to proceeding with seeding operations.

3.3 INSTALLATION OF TURFGRASS SEEDING

A. Proceed with installation only after unsatisfactory conditions have been corrected and approved by the Project Manager.

B. Beginning of installation means Acceptance of existing conditions by the Contractor.

C. Install turfgrass seed only after all other landscape and irrigation items have been installed and accepted by the Project Manager.

D. Areas up to one (1') foot wide can be seeded or as approved by the Project Manager.

E. Seed shall be uniformly applied at the specified rate with a mechanical seeder, (half in one direction and the other half at right angles to the first application). The direction of the final application shall always be at right angle to the slope or running in the direction of the contour. Seed shall be installed at a depth between one-quarter (1/4") inch and one-half (1/2") inch.

F. Areas that are too small or steep for mechanical seeding may be hand seeded. Seed shall be uniformly applied at the specified rate utilizing a broadcast spreader and then hand rake to a depth of no more than one-half (1/2") inch, then roll seed bed to ensure proper contact to the soil.

G. Watering: Refer to Division 31 Section "Watering".

H. Review seasonal restrictions prior to seeding.

3.4 PREPARATION FOR EROSION CONTROL MATERIALS

A. Review erosion control measures with the Project Manager prior to installation. The Contractor shall take measures and furnish equipment and labor necessary to control and prevent soil

erosion, blowing soil and accumulation of wind-deposited materials on the site throughout the duration of work.

B. For erosion-control mats, install planting soil in two (2) lifts, with second lift equal to thickness of erosion-control mats. Install erosion-control mat per manufacturer's recommendations.

C. Fill cells of erosion-control mat with planting soil and compact before planting.

D. For erosion-control blanket or mesh, install from top of slope, working downward, and as recommended by the manufacturer. Fasten the blanket per manufacturer's recommendations.

3.5 MULCHING

A. Straw Mulch Application: Straw shall be applied uniformly with no bare soil showing. It shall be crimped in with a crimper or other approved equipment. The seeded area shall be mulched within four (4) hours of seeding. Immediately apply tackifier evenly across the surface of straw mulch applications per the manufacturer's recommendations.

B. Engineered Wood Strand Erosion Control Mulch Application: Wood mulch shall be applied per manufacturer's recommendations. The seeded area shall be mulched within four (4) hours of seeding.]

C. Hydromulch Application: Utilize an approved hydromulcher to apply cellulose fiber at a rate of two thousand (2,000) pounds per acre. The Contractor shall provide verification of application rates in the form of ship tickets.

D. Mulching shall not be installed when surface water is present resulting from rains, melting snow irrigation or other causes.

E. Areas not properly mulched, or any damage that may occur during construction is the responsibility of the Contractor and shall be repaired and re-mulched in an acceptable manner at the Contractor's expense. Mulching removed by wind, rain or other causes prior to Final Acceptance shall be re-established by the Contractor at their own expense.

F. The seeded area shall be mulched within four (4) hours of seeding. Areas not mulched within twenty-four (24) hours after seeding must be re-prepped and re-seeded with the specified seed mix at the Contractor's expense.

3.6 CLEANING

A. Perform cleaning during installation of the work and upon completion of the work. Remove all excess materials, debris, and equipment from site.

B. Remove non-degradable erosion control measures after the establishment period or at the direction of the Project Manager.

C. Protect adjacent and adjoining areas from hydromulching overspray. The Contractor shall remove all hydromulch from surfaces not specified for seeding, including, but not limited to plant materials, fences, paved areas, signs, mulch beds, irrigation components and all other objects as directed by the Project Manager.

3.7 PROTECTION AND REPAIR

A. The Contractor shall protect existing utilities, irrigation, paving, and other facilities from damage caused by seeding operations. The Contractor shall repair any damage at their expense. Any areas outside the Contract Limits that are disturbed as a result of construction operations shall be restored to Parks standards at no additional cost to the Owner.

B. The Contractor shall repair damage to prepared topsoil and existing surfaces, caused by vehicular access and movement during work under this section, to original condition at no additional cost to the Owner.

C. The Contractor shall protect and restrict access from seeded areas until the areas are established and accepted. Temporary fencing, barricades, and warning signs shall be installed as required, or by direction of the Project Manager at no additional cost to the Owner. Maintain fencing and barricades throughout the site until the Project Manager approves removal.

3.8 ESTABLISHMENT

A. If Maintenance is required per the Contract, refer to Division 32 Section “Landscape Maintenance”.

B. If Maintenance is not required per the Contract, then the turfgrass seed establishment is per the Acceptance sub-section.

C. Establishment of the seeded areas are the responsibility of the Contractor until Final Acceptance per the following requirements:
   1. The establishment period shall begin immediately after each area is seeded and continue until Final Acceptance for the entire project.
   2. The Contractor shall provide all supervision, labor, material, and equipment to develop and maintain the seeded areas.
   3. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
   4. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
   5. Mowing and Trimming: When turfgrasses reach three and one-half inches (3-1/2”) in height, begin weekly mowing program to maintain turf at two and one-half inches (2-1/2”) to three inches (3”) inches in height.
      a. Do not remove more than one third (1/3) the height of the grass leaf in single mowing.
      b. Do not mow when grass is wet.
      c. All clippings from adjacent paved areas shall be removed and clippings from mowed turf areas shall be removed at the direction of Project Manager and Parks Operations Supervisor.
   6. Fertilizing: Within sixty (60) days of seeding and every sixty (60) days thereafter until final acceptance, apply specified fertilizer to maintain optimal turf vigor or per the direction of the Project Manager.
   7. Weed Control: Control annual weeds by mowing. Do not use pesticides unless approved by the Project Manager and Parks Operations Supervisor.
   8. Insect and Disease Control: As needed, apply pesticide approved by the Project Manager and the Parks Operations Supervisor.

3.9 ACCEPTANCE

A. Substantial Completion shall be granted when seed has been applied and stabilized or per the discretion of the Project Manager.

B. Final Acceptance will be granted when turfgrass seed areas have uniform and consistent growth over the entire seeded area and are in a healthy, vigorous growing condition. Turf installations shall meet the following criteria as determined by the Project Manager
   1. Sixty (60) days after seeding, the seeded areas shall be reviewed by the Project Manager and the Contractor.
   2. Any areas as determined by the Project Manager where the seed has failed to germinate shall be reseeded and raked to cover the seed.
   3. In any area where the seed has failed to grow, reseeding shall be at the Contractor's expense until grass is established and accepted.
   4. Acceptable uniform plant growth shall be defined as scattered bare spots, not greater than one (1) square foot, and do not exceed two percent (2%) of the seeded area.

C. Use approved materials to reestablish turf that does not comply with the requirements of these specifications and continue maintenance until turf meets the requirements and reaches Final Acceptance.

D. After Final Acceptance, the turfgrass areas will become the responsibility of the Owner.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Measurement will be based on the percentage complete for the lump sum contract amount for Turfgrass Seeding.

4.2 PAYMENT

A. Payment will be made at the lump sum contract price, and shall include required materials, transportation, equipment, labor, earthwork, stockpiling, disposing, hauling off, watering, dust control, erosion and sediment control, fine grading, furnishing and installation of seeds and mulches installation and maintenance of temporary protection by fencing or other means, watering and all maintenance required until Final Acceptance of the work as required in accordance with the Contract Drawings and Specifications.

END OF SECTION 32 92 19

SECTION 32 93 00 TREES, PLANTS, AND GROUNDCOVERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 01 Specification Sections, and related report documentation apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for furnishing, installing, and maintaining live woody plant material.

B. Related Sections:
1. Division 01 Section “Tree Retention and Protection”.
2. Division 31 Section “Clearing and Grubbing”.
3. Division 31 Section “Earth Moving”
4. Division 32 Section “Watering”.
5. Division 32 Section “Soil Preparation”.
6. Division 32 Section “Topsoil”.
7. Division 32 Section “Landscape Maintenance”.

1.3 DEFINITIONS

A. ANSI: American National Standards Institute. Z60.1 is the national standard for nursery stock.

B. Backfill: The soil used from original excavation site or the act of placing soil in an excavation.

C. Balled and Burlapped Stock: Plants dug with firm, natural balls of earth in which they were grown wrapped with burlap, tied, rigidly supported, and drum laced with twine with the root flare visible at the surface of the ball as recommended by ANSI Z60.1.

D. Bare-Root Stock: Plants with a well-branched, fibrous-root system developed by transplanting or root pruning, with soil or growing medium removed, and with not less than the minimum root spread according to ANSI Z60.1 for type and size of plant required.

E. Caliper: Caliper of a trunk as measured by a diameter tape at a height six-inches (6”) above the root flare for trees up to, and including, four-inch (4”) size at this height; and as measured at a height of twelve-inches (12”) above the root flare for trees larger than four-inch (4”) size.

F. Cane: A cane shall be considered a primary stem which starts from the ground or at a point close to the ground at a point not higher than one-fourth (1/4) the height of the plant, and which reaches the minimum height stated in the plant size specification.

G. Central leader: Also referred to as leader or the dominant leader. A continuation of the main trunk located in the center of the crown, beginning at the lowest main scaffold branch and extending to the top of the tree. Central leaders should be straight withrout defects.

H. Circling root(s): One or more roots whose diameter is greater than ten percent (10%) of the trunk caliper circling more than one-third of the trunk. Circling roots are unacceptable.

I. Clear Trunk: The portion of the trunk below the main crown which may include shortened temporary branches.

J. Co-dominant: Two or more vigorous, upright branches or stems of relatively equal diameter that originate from a common point, usually where the leader was lost or removed. Co-dominant stems are unacceptable.

K. Container-Grown: Healthy, vigorous, well-rooted plants grown in a container, with a well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for type and size of plant required.

L. Crown: The portion of a tree beginning at the lowest main scaffold branch extending to the top of the tree. On younger trees, the crown may be comprised of temporary branches.

M. Cultivar: A named plant selection from which identical or nearly identical plant characteristics can be produced, usually by vegetative propagation or cloning.

N. Diameter Breast Height (DBH): Diameter of a trunk as measured by a diameter tape at a height 54-inches (54") above the ground line for trees with caliper of six-inches (6") or greater as measured at a height of twelve-inches (12") above the root flare. Per ANSI Z60 American Standard for Nursery Stock.

O. Drip Zone: The outermost edge of the tree's canopy or branch spread. The area within a tree's drip line is all the ground under the total branch spread.

P. Finish Grade: Elevation of finished surface of planting soil.

Q. Genus: Biological classification name for a group of related plants that share similar characteristics or features.

R. Included Bark: Bark embedded in the union between a branch and the trunk or between two or more stems that prevents the formation of a normal branch bark ridge. Included bark is unacceptable.

S. Kinked Root: A main root that is sharply bent. Kinked roots are unacceptable.

T. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant. Some sources classify herbicides separately from pesticides.

U. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

V. Root Ball: Root mass of a tree or shrub after digging or removal of the container. Depth is measured from the base of the root flare to the bottom of the root ball. Width is measured

horizontally across the root ball with an approximately circular form or the least dimension for non-round root balls, centered around the trunk within a 10% Root tolerance according to ANSI Z60.1

W. Root Collar: Also referred to as the root flare. The transition zone where the trunk and root zone meet.

X. Root Flare: Also called “trunk flare”. The area at the base of the tree's stem or trunk where the stem or trunk broadens to form first order roots; the area of transition between the root system and the stem or trunk.

Y. Scaffold Branches: Large main branches originating from the trunk that form the main structure of the crown.

Z. Species: Biological classification name for a subgroup of plants within a genus.

AA. Stem-girdling Root: A circling, bent, or straight root that touches or rests on the trunk or root flare that can become a permanent root. Stem-girdling roots are unacceptable.

BB. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

CC. Temporary Branch: A small branch that is temporarily retained along the lower trunk of young trees to promote general health and trunk taper.

DD. Tree Protection Zone: The zone equal to eighteen inches (18”) radially from the tree for every one-inch (1”) of trunk diameter at breast height.

EE. Trunk: The main stem of a tree, beginning at the root collar and ending at the lowest main scaffold branch.

FF. Taper: The thickening of a trunk to the root flare or branch toward its parent base.

GG. Variety: A naturally occurring named plant selection subtype of a species.

1.4 SUBMITTALS

A. See Division 01 Section “Submittals” for submittal requirements.

B. Product Data: For each type of product.
   1. Plant Materials: Include quantities, sizes, quality, and sources for plant materials.

C. Product Samples: At a minimum provide the following samples for approval by the Project Manager, additional product samples may be required at the direction of the Project Manager.
   1. Mulch: one (1) gallon bag minimum of each type of mulch.
   2. Tree Stakes: one (1) of each type.
   3. Tree Straps: one (1) each.
   4. Guy Material: one (1) linear foot.
   5. Guy Signal: one (1) linear foot.
   6. Tree Wrap: one (1) linear foot.

D. Pesticides: Product label, Safety Data Sheet (SDS) labels and manufacturer's application instructions specific to Project.

E. Proper Identification: All plants shall be true to name as ordered or shown on planting plans and shall be labeled individually or in groups by species and cultivar (as appropriate).

F. Contractor shall provide a complete list of all plant material for approval by the Project Manager a minimum of ten (10) days prior to delivery. Any substitutions of plant material, including but not limited to size, type, species, and variety shall be listed and submitted to the Project Manager for approval.

G. Tree Planting Permit: The contractor shall obtain a tree planting permit, if applicable.

H. Contractor shall provide the following certificates:
   1. State Inspection Certificate from the origin nursery.
   2. Certificate from origin state.
   3. Quarantine Certificate from origin state.
   4. Any Certificates required by the USDA Animal and Plant Health Inspection Service (APHIS) and ANSI-Z-60 and accompanying Rules and Regulations.

I. Analysis of existing soil shall be per Division 32 Sections “Topsoil” and “Soil Preparation”.

J. Contract Close Out Submittals:
   1. Warranty for Trees, Plants, and Groundcovers: At completion of work, furnish written warranty to the Project Manager based upon specified requirements.

1.5 QUALITY CONTROL

A. All plant material shall comply with federal and state laws and regulations requiring inspection for plant diseases, pests, and weeds. Inspection certificates required by law shall accompany each shipment of plants. Clearance from the local county agricultural commissioner, if required, shall be obtained before planting trees originating outside the county in which they are to be planted. Even though trees may conform to county, state, and federal laws, the Owner may impose additional requirements that pertain to local issues.

B. The Contractor shall arrange for the inspection of plant material upon delivery to the site for compliance with the Specifications and Contract Drawings. The Project Manager has the right to reject plant material that does not meet Specifications until Final Acceptance. Inspection of materials is primarily for quality, size, form, variety, damage, and proper rooting but other requirements are not waived even though initial visual inspection results in approval. Rejected material shall be removed from the site within twenty-four (24) hours.

C. The Project Manager has the right to cull a pre-determined quantity of plant material representative of the genus to invasively inspect for root defects. Upon discovery of defects that will impact future health and growth, other plant material may be inspected as well to determine quality of overall plant material and possible rejection.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Materials: Deliver materials in original containers with tags showing genus, species, and size. Protect materials from damage during delivery and while stored at site. The Project Manager

reserves the right to inspect containers before or after installation to verify compliance with Specifications.

B. Bulk Materials:
   1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants or in tree protection zones.
   2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
   3. Accompany each delivery of bulk materials with appropriate certificates.

C. Trees: Nursery stock shall be harvested and planted during the same growing season. Do not prune, except as approved by the Project Manager. Protect bark, branches, and root systems from sun scald, drying, sweating, whipping, and other handling and transportation damage. Do not bend, tie, or deliver trees in such a manner as to destroy natural shape. Root balls should be moist and provide protective covering during delivery. Plant materials delivered without protective covering may be rejected. Protect root balls from damage during digging, transferring, loading, unloading, and planting. All trees shall be labeled with a securely attached waterproof tag bearing a legible plant name. Remove all tags and flagging as directed by the Project Manager.

D. Deliver bare-root stock plants within twenty-four (24) hours of digging. Immediately after digging up bare-root stock, pack root system in wet straw, hay, or other suitable material to keep root system moist until planting. Transport in covered, temperature-controlled vehicles, and keep plants cool, and protected from sun, and wind at all times.

E. Store bulbs, corms, and tubers in a dry place at sixty degrees to sixty-five degrees (60° to 65°) F until planting.

F. Handle planting stock by the root ball only, providing support to top.

G. Deliver trees after preparations for planting have been completed and install immediately. If planting is delayed more than six (6) hours after delivery, set planting materials in shade, protect from weather and mechanical damage, and keep roots moist.
   1. Set balled stock on ground and cover ball with wood chips, or other acceptable material.
   2. Do not remove container-grown stock from containers before planting.
   3. Water root systems of trees stored on site with a fine-mist spray. Water as often as necessary to maintain root systems in a moist condition.
   4. Root balls should be stored in shade and be covered with moist mulch if stored on site for longer than twelve (12) hours.

1.7 PROJECT/SITE CONDITIONS

A. Vehicular accessibility on site shall be as directed as shown on approved plans or by the Project Manager. Repair damage to prepared topsoil and existing surfaces, caused by vehicular access and movement during work under this section, to original condition at no additional cost to the Owner.

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be

obtained. Apply products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.

1.8 COORDINATION AND SCHEDULING

A. Coordinate installation of planting materials during normal planting seasons for each type of plant material required, avoiding temperature extremes. Planting materials should be generally planted between April 15 and October 1, or at the direction of the Project Manager. If irrigation is not available at the time of planting, then the Contractor is responsible for watering of all plant material at no additional cost to the Owner, refer to Division 31 Section “Watering”.

B. Plant trees after final grades have been accepted and prior to seeding or sodding, unless otherwise authorized by the Project Manager.

1.9 WARRANTY

A. Warranty: The warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrently with, other warranties made by the Contractor under requirements of the Contract Documents.

B. Trees, Plants, and Groundcovers shall be warranted for a period of one (1) year after date of Substantial Completion, against defects including death, structural failures, dieback as determined by the Project Manager. Warranty shall not cover defects resulting from lack of adequate maintenance, neglect or abuse by Owner staff, hail, or incidents that are beyond Contractor’s control.

C. The Warranty shall not be enforced should any plant die due to vandalism after Substantial Completion.

D. Remedial Actions:
   1. Replace any plant materials that have been excessively pruned, more than twenty percent (20%) percent die back in the central leader, or in an unhealthy or declining condition immediately upon notice from the Project Manager during warranty period.
   2. Immediately remove dead plants and replace unless required to plant in the succeeding planting season.

E. All plants shall be true to name and meet all conditions of these specifications. Any plant that is not true to name as indicated by form, leaf, flower, or fruiting characteristics shall be replaced at the Contractor’s expense.

F. All tree stabilization materials shall be removed by the end of the Warranty period, if not done prior, unless otherwise directed by the Project Manager.

PART 2 - PRODUCTS

2.1 PLANT MATERIALS

A. General: Furnish and install nursery-grown trees and shrubs conforming to the requirements of ANSI-Z-60 and ANSI A300, Part 6, with healthy root systems developed by transplanting or

root pruning. Provide well shaped, symmetrical, fully branched, healthy, and vigorous stock free of disease, insects, eggs, larvae, girdling, and defects such as sun scald, injuries, abrasions, and disfigurement.

B. Label all plants of each size, caliper genus, species cultivar or variety with a securely attached waterproof tag bearing legible designation of botanical and common name.

C. All plants shall be the genus, species, variety, or cultivar designated on the Contract Drawings. No substitutions will be accepted without the prior written approval of the Project Manager. Contractor must provide proof of non-availability.

2.2 TREES

A. These specifications shall apply to deciduous, broadleaf evergreen and coniferous species. Note that leaf characteristics will not be evident on deciduous trees during the dormant season.

B. Crown: The form and density of the crown shall be typical for a young specimen of the species/cultivar. Changes in form caused by wind, pruning practices, pests, or other factors shall not substantially alter the form for the species/cultivar. These crown specifications do not apply to plants that have been specifically trained in the nursery to be: topiary, espalier, multi-stem, or clump; or unique selections such as contorted or weeping cultivars.
1. Trees shall have a single, relatively straight trunk, and central leader, unless noted on plans to be “Multi-trunk” or “Clump”. They shall be free of co-dominant stems and vigorous, upright branches that compete with the central leader. If the original leader has been headed, a new leader at least one-half of the diameter of the original leader shall be present.
2. Main branches shall be evenly distributed along the central leader, not clustered together. They shall form a balanced crown appropriate for the age of the species/cultivar.
3. Branch diameter shall be no larger than one-half the diameter of the central leader measured one-inch (1”) above where the branch is attached.
4. The attachment of the largest scaffold branches shall be free of included bark.
5. Temporary branches, unless otherwise specified, should be present along the lower trunk below the lowest scaffold branch. These branches should be no greater than three-eighths-inch (3/8”) diameter. Clear trunk shall be no more than thirty percent (30%) of the total height of the tree, unless otherwise noted.

C. Trunk: The tree trunk shall be relatively straight, vertical, and free of wounds, except properly made pruning cuts, which shall be closed over or less than three-quarters inch (3/4”) diameter open, sunburned areas, conks (fungal fruiting bodies), wood cracks, bleeding areas, signs of boring insects, galls, cankers, stem-girdling ties, or lesions (mechanical injury).
1. Trunk caliper and taper shall be sufficient so that the tree will remain vertical without a stake. Trunk caliper at six-inches (6”) above the soil media (substrate) surface shall be a minimum of two inches (2”) and a maximum of three inches (3”). Any caliper sizes outside of that range will only be allowed with approval from the Project Manager.
2. The cut made when re-growing the top should be just above the major structural roots. The “shank” that results from this procedure should be at a consistent height above the structural roots and no longer than five-inches (5”), to ensure that the trees are consistently planted at the correct depth. The base of the trunk should not have a large pruning cut from re-growing the top.

D. Roots: The root system shall be substantially free of injury from biotic (e. g., insects and pathogens) and abiotic (e. g., pesticide toxicity and salt injury) agents.
   1. The uppermost roots or root collar shall be within the upper two-inches (2") of the soil media (substrate). Depth of the root-ball shall be measured from the top of the ball, which in all cases shall begin at the root flare. Soil above the root flare shall not be included in the root-ball depth measurement, and shall be removed.
   2. The tree shall be well rooted in the soil media (substrate). Root distribution shall be uniform throughout the soil or media and radial from the trunk. Structure and growth shall be appropriate for the genus, species and cultivar or variety. When the burlap or container is removed, the root-ball shall remain intact. Trees should have several lateral roots or many fibrous roots spaced evenly around the trunk to provide support so the trees are stable when planted. Trees should have as many small roots as possible. Fibrous roots can be achieved by root-pruning, using air-pruning containers, or under-cutting or root pruning and transplanting at any stage of production.
   3. The root collar and the inside portion of the root-ball shall be free of defects, including circling, kinked, and stem-girdling roots. Soil removal or root washing near the root collar may be necessary to inspect for the aforementioned root defects.
   4. Roots on the periphery and bottom of the root-ball shall be less than one-eighth-inch (1/8") diameter.
   5. As a general rule for young nursery-grown trees, there should be two or more structural roots within one- to three-inches (1" – 3") of the soil surface. "First order lateral roots" is another term that has been used for these roots. If the roots are deeper than three-inches (3") , the stock shall be rejected.
   6. Root-balls that are undersized as specified in current edition of ANSI Z60.1. shall be rejected. Field grown trees for balled and burlap delivery shall have the roots pruned at least six-inches (6") inside the final root-ball size performed within adequate time for the tree to develop fibrous roots at the outer edge of the root-ball prior to harvest and delivery.
   7. Ball and burlap trees are acceptable per the specifications. If ball and burlap trees are not able to be procured, container trees may be substituted with the approval from the Project Manager.

E. Leaves: The size, color, and appearance of leaves shall be typical for the time of year and stage of growth of the species or cultivar. Trees shall not show signs of prolonged stress or extended drought as indicated by under or oversized leaves, wilted, shriveled or dead leaves.

F. Branches: Shoot growth (length and diameter) throughout the crown shall be appropriate for the age and size of the species/cultivar. Trees shall not have dead, diseased, broken, crossing, distorted, or otherwise injured branches.

G. All deciduous trees of one species used in formal rows or groupings shall exhibit cultural uniformity, i.e. "matched" in height, crown width and shape, height to first branch, and trunk taper. For this reason, it is desired that these trees be produced by a single grower.

H. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery unless otherwise indicated, and only if approved by the Project Manager.

2.3 SHRUBS

A. Container Grown Shrubs: All specifications for container grown plants shall include both plant size and container size. Plant size intervals and reference to height or spread shall be in accordance with the guidelines for the appropriate plant type set forth in ANSI Z60.1; Section 2.2 - Types of Deciduous Shrubs.

B. Container size shall be by container classification (i.e., not by container volume) as set forth in the ANSI Z60.1 Container Class Table.

C. In all cases, container grown nursery stock shall meet the following general requirement:
   1. All container grown nursery stock shall be healthy, vigorous, well rooted, and established in the container in which it is growing. Container grown nursery stock shall have a well-established root system reaching the sides of the container to maintain a firm ball when the container is removed, but shall not have girdled or kinked roots and/or root growth encircling the inside of the container.

D. The container shall be sufficiently rigid to hold the ball shape and to protect the root mass during shipping.

E. Minimum shrub sizes shall conform to the following standards:
   1. Tender shrubs (Type 0) that do not produce top growth that is winter hardy:

Height or Spread	**Minimum number of canes**	**Minimum spread of roots**
fifteen-inches (15”)	three (3) canes	Nine-inches (9”)

   2. Small shrubs (Type 1) that grow to a mature height of not more than three feet (3’):

Height or Spread	**Minimum number of canes**	**Minimum spread of roots**
fifteen-inches (15”)	four (4) canes	Nine-inches (9”)

   3. Intermediate shrubs (Type 2) that grow to a mature height between three feet (3’) and seven feet (7’):

Height or Spread	**Minimum number of canes**	**Minimum spread of roots**
Two feet (2’)	four (4) canes	twelve-inches (12”)

   4. Large shrubs (Type 3) that grow to a mature height exceeding seven feet (7’):

Height or Spread	**Minimum number of canes**	**Minimum spread of roots**
four feet (4’)	six canes (6)	twenty-inches (20”)

2.4 PERENNIALS, GRASSES, GROUNDCOVERS, AND VINES

A. All container grown plants shall be healthy, vigorous, well rooted, and established in the container in which they are growing and be in conformance with ANSI Z60.1. A container grown plant shall have a well-established root system reaching the sides of the container to maintain a firm ball when the container is removed but shall not have girdled or kinked roots and/or root growth encircling the inside of the container. Top growth is to be in conformance with established nursery standards.

2.5 TREE-STABILIZATION MATERIALS

A. Trunk-Stabilization Materials:
   1. Deciduous and Evergreen Tree Stakes: Rough-sawn, sound, new softwood with specified wood preservative treatment by pressure process, free of knots, holes, cross grain, and other defects, two-inch (2") diameter by six feet (6'), pointed at one end.
   2. Guys and Tie Wires: ASTM A 641/A 641M, Class 1, #14 galvanized-steel wire, two-strand, twisted. Guying must be approved by the Project Manager.
   3. Tree-Tie Webbing: UV-resistant nylon webbing with brass grommets, size as indicated.
   4. Safety Signals for Guy and Staking Wire: One-half inch (1/2") diameter PVC pipe, length as indicated.

B. Tree-Wrap:
   1. Two layers of crinkled paper cemented together with bituminous material, four-inches (4") wide minimum, with stretch factor of thirty-three percent (33%).
   2. Tree wrap tape: Tape as approved by the Project Manager.

2.6 PLANTING BACKFILL MATERIAL

A. Unless otherwise directed by the Project Manager, the plant pit backfill material shall consist of the following, thoroughly mixed:
   1. Soil originally excavated from the pit: two thirds (2/3) proportion of total mix.
   2. Soil Amendment as specified in Division 32 Section "Soil Preparation"; one-third (1/3) proportion of total mix.

B. If imported topsoil is required, it shall meet the requirements specified in Division 32 Section "Topsoil", Article 2.2.

2.7 MULCH

A. Organic Mulch: Organic mulch, free from weeds, chemicals, and/or deleterious materials and suitable as a top dressing of trees and shrubs, consisting of chipped wood material not larger than four-inches (4") in length.

2.8 MISCELLANEOUS MATERIALS

A. Antidesiccant: Water-insoluble emulsion, permeable moisture retarder, film forming, for trees, as approved by the Project Manager. Deliver in original, sealed, and fully labeled containers. Mix and apply according to manufacturer's instructions.

B. Pre-Emergent Pesticide: As approved by the Project Manager.

C. Pesticides: EPA registered and approved, and as approved by the Project Manager.

D. Subdrainage: See Division 33 Section "Subdrainage Systems".

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify actual grade elevations and dimensions of plantings and construction contiguous with new plantings by field measurements before proceeding with planting work.

B. Examine areas to receive landscaping for compliance with requirements and for conditions affecting performance of work of this Section. Do not proceed with installation until unsatisfactory conditions have been corrected.
   1. When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, obstructions, or utilities, notify the Project Manager before planting.
   2. Verify that adequate overhead clearance exists to planting locations.
   3. Suspend planting operations during periods of excessive heat, cold, and/or moisture until acceptable planting conditions exist. The contractor shall obtain approval from the Project Manager when planting in temperatures above ninety degrees (90°) Fahrenheit.
   4. Uniformly moisten excessively dry soil that is not workable.

C. Verify that no foreign or deleterious material or liquid such as, but not limited to, paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within the work area. If contamination is present in the soil within a planting area, notify the Project Manager immediately.
   1. If contamination is discovered during Construction the Project Manager will determine the best course of action to remediate the contamination, which may include requesting the Contractor perform the removal of contamination and replacement of clean material.
   2. If contamination is determined to be the result of construction operations, Contractor is to remove contaminated material and replace with clean material at the direction of the Project Manager.

D. Verify final grades are completed in accordance with the drawings. Proceed with installation only after unsatisfactory conditions have been corrected and approved by the Project Manager.

E. Cooperate with any other contractors and trades, who may be working in and adjacent to the landscape work areas. Examine the Contract Drawings which show the development of the entire site and become familiar with the scope of all work required.

3.2 FINISH GRADING

A. See Division 31, Sections “Earth Moving and 32 Sections “Soil Preparation” and “Topsoil”.

3.3 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities, turf areas and existing plants from damage caused by planting operations. Repair damage to surrounding areas and site elements noted above resulting from planting operations at no additional cost to the Owner.

B. Utilities: Contractor shall be responsible locating utilities and, repair of utilities damaged during the Work. Determine location of overhead and underground utilities and perform work in a manner that will avoid damage. Hand excavate as required. Maintain markings until their removal is mutually agreed upon by the Contractor and the Project Manager.

C. Layout, stake and label all individual tree locations for approval by the Project Manager prior to installing trees.

D. Outline planting beds and mark plant locations within the bed(s) for approval by the Project Manager prior to installing any plant material or mow bands. Make adjustments as directed by the Project Manager at no additional cost to the Owner.
   1. If formal arrangements or consecutive order of plants is indicated on the Contract Drawings, select stock for uniform height and spread, and number the labels to assure symmetry in planting.

E. Prepare planting area for soil placement and mix planting soil according to Division 32 Section "Soil Preparation".

3.4 FIELD QUALITY CONTROL

A. Provide quantity, size, genus, species, and variety of trees indicated, complying with current applicable requirements of ANSI Z60.1 "American Standard for Nursery Stock", and all applicable state and local rules and regulations.

B. Inspection: The Contractor shall arrange for the inspection of plant material upon delivery to the site for compliance with the Specifications and Contract Drawings. The Manager has the right to reject plant material that does not meet Specifications until Final Acceptance.

C. Measurements: Measure trees according to the requirements of the ANSI Z-160, with branches and trunks in their normal position. Do not prune to obtain required sizes. Measure main body of tree for height and spread; do not measure branches or roots tip-to-tip.

3.5 WEED CONTROL

A. Do not proceed with landscape work until weed growth has been controlled and eliminated, per Division 32 Section "Soil Preparation".

B. See Division 32 Section "Soil Preparation" for detailed weed control measures.

C. Use pesticides only with the written approval of the Project Manager, and in strict accordance with manufacturer's recommendations.

3.6 EXCAVATION FOR TREES AND SHRUBS

A. Planting Areas: Excavate by hand, auger or with a mini excavator. Scarify or roughen sides of tree pit by hand to eliminate any glazing. Tree spades may not be used to dig tree pits.
   1. Balled and Burlapped Trees:
      a. Open top of root ball burlap and carefully remove soil to expose trunk flare to first order roots. Set hole depth based on bottom of root ball and base of root flare. The base of the root collar shall be one to two inches (1" - 2") higher than finished grade.
      b. Do not excavate deeper than depth of the root ball. If area under the plant was initially dug too deep, add soil to raise it to the correct level and thoroughly compact the soil directly under the root ball to prevent settling.

c. Excavate a minimum two times (2X) as wide as ball diameter at base of pit. Excavate a minimum of three to four times (3X – 4X) as wide as ball diameter at top of pit. Slope sides of the pit as shown on the detail.

2. Container-Grown Trees and Shrubs:
   a. Gently remove excess soil from top of root ball to expose root flare or top of first order root. Set plumb and in center of pit with base of root flare one to two-inches (1" - 2") above adjacent finish grades as indicated.
   b. Excavate approximately two times (2X) times as wide as container diameter at base of pit. Excavate a minimum of three to four times (3X – 4X) as wide as container diameter at top of pit.

B. Obstructions:
1. Utilities: Notify the Project Manager immediately of utilities that conflict or may potentially conflict with proposed plant locations. In such cases, alternative plant locations will be determined by the Project Manager.
2. Notify the Project Manager prior to planting if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavation.

C. Drainage: Notify the Project Manager if subsoil conditions show evidence of water seepage or retention in tree or shrub pits.

3.7 PLANTING TREES AND SHRUBS
1. Balled and Burlapped Stock:
2. Prior to hole depth determination, open top of root ball burlap. Gently remove excess soil from top of root ball to expose root flare or top of first order root.
3. Set balled and burlapped stock plumb and in center of pit with base of root flare one to two-inches (1" to 2") above adjacent finish grades as indicated.
4. Gently remove, without damaging the root ball, all of the wire basket and twine. Cut away burlap from minimum top two-thirds (2/3) of the root ball, but do not remove from under ball. Remove pallets, if any, before setting. Do not use planting stock if ball is cracked, loose, or broken before or during planting operation.
5. Place backfill around ball in layers. When pit is approximately one-half backfilled, water thoroughly and allow to absorb into soil to eliminate voids and air pockets prior to placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill.

B. Container Grown Stock:
1. Carefully remove containers so as not to damage root balls.
2. Shave exterior 1" of soil and roots from root ball or until all circling roots have been removed and to promote radial fibrous roots. Use sharp spade or handsaw designed specifically for tree work to make clean, non-tearing cuts on roots.
3. Prior to hole depth determination, gently remove excess soil from top of root ball to expose root flare or top of first order root.
4. Set plants plumb and in center of pit with base of root flare and/or first order lateral root one to two inches (1" to 2") above adjacent finish grades as indicated.
5. Place backfill around ball in layers.. When pit is approximately one-half backfilled, water thoroughly and allow to absorb into soil to eliminate voids and air pockets prior to placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill.

C. Bare-Root Stock: Set and support each plant in center of planting pit or trench with root flare two-inches (2") above adjacent finished grade.
   1. Backfill: As specified in Part 2 - Products.
   2. Remove girdled or kinked roots and/or root growth that is encircling without tangling or turning toward surface, spread roots laterally. Plumb before backfilling, and maintain plumb while working.
   3. Carefully work backfill in layers around roots by hand eliminating air pockets. Bring roots into close contact with the soil.
   4. When planting pit is approximately one-half filled, water thoroughly and allow to absorb into soil before placing remainder of backfill. Repeat watering until no more water is absorbed.
   5. Continue backfilling process. Water again after placing final layer of soil.

3.8 TREE WRAP

A. Inspect tree trunks for injury, improper pruning, and insect infestation and take corrective measures required before wrapping. Inform the Project Manager of conditions prior to wrapping. Wrap trees starting at the base of the trunk and spiral cover trunk to height of first branches. Overlap wrap, exposing half the width, and securely attach without causing girdling. Use black electrical tape to secure. Do not use staples.
   1. All smooth barked trees shall be wrapped with the exception of any Populus species by November 1st and removed by May 15 or per the direction of the Project Manager.
   2. Contractor shall be responsible for wrapping, re-wrapping if needed, and unwrapping trees during the warranty period.

3.9 PRUNING OF PLANTS

A. Prune only damaged or dead branches as directed by the Project Manager.

3.10 TREE STABILIZATION

A. Install site-fabricated trunk stabilization as follows, unless otherwise indicated on Contract Drawings.
   1. Drive wood stakes into undisturbed grade within the mulched area. Avoid penetrating root balls or root masses.
   2. Align tree stakes with the prevailing wind or parallel to hard surfaces.
   3. Securely attach specified wire to stakes.
   4. Support trees with specified wire and tree tie webbing from the tree trunk to each stake. Allow one to two inches (1" to 2") of slack to avoid rigid restraint of the tree.
   5. For staked trees: Attach twenty-four inch (24") long by one-half inch (1/2") diameter PVC pipe flagging to each wire.
   6. For guyed trees: Must have prior approval from Urban Forestry Division.

3.11 MULCHING

A. Trees: Create a forty-eight-inch (48") radius from the outside of the trunk, by three inch (3") high formed soil berm around tree and fill with three-inch (3") deep specified wood mulch. Mulch shall be kept four to six-inches (4"-6") away from tree trunk.

B. Shrubs:

1. Mulch backfilled surfaces of pits, planting beds areas, and other areas indicated or as directed by the Project Manager.
2. Mulch in shrub bed areas: Apply three-inch (3") thick layer of mulch and finish level with adjacent finish grades. Do not place mulch against stems of plants.

3.12 ANTIDESICCANT

A. Apply antidesiccant using power spray to provide an adequate film over trunks, branches, stems, twigs, and foliage. Apply only when directed and approved by the Project Manager

B. When deciduous plants are moved in full leaf, the Urban Forestry Division and the Project Manager may direct the use of an antidesiccant at nursery before moving and again two (2) weeks after planting. Antidessicant to be supplied and applied by Contractor at no additional cost to the Owner.

3.13 CLEANING

A. Perform cleaning during installation of the work and upon completion of the Work, to the satisfaction of the Project Manager. Remove all excess materials, debris, and equipment from site. Repair any damage resulting from planting operations.

B. Remove surplus soil, excess subsoil, unsuitable soil, and waste material including trash and debris generated during installation at no additional cost to the Owner.

3.14 PROTECTION

A. Protect existing utilities, paving and other facilities from damage caused by planting operations. The Contractor shall repair any damage at no additional cost to the Owner.

B. Restrict vehicular and pedestrian traffic from planted areas. Erect temporary protection zones with signs and/or barriers as required or directed by the Project Manager at no additional cost to the Owner.

C. Erosion Control: Take measures and furnish equipment and labor necessary to control and prevent soil erosion, blowing soil and accumulation of wind-deposited materials on the site throughout the duration of work.

3.15 MAINTENACE

A. The Contractor shall be responsible for maintaining all trees, shrubs, and groundcover until Substantial Completion is issued.

B. Maintain trees by pruning as directed by the Project Manager, cultivating, season appropriate watering, mulching, weeding, wrapping, unwrapping, restoring planting saucers, and resetting to proper grades or vertical position, as required to establish healthy, viable plantings. Monitor and control as required to keep trees free of insects and disease. Restore or replace damaged tree wrappings, stakes, guying.

A. During the irrigation season (generally May through September), water may be available from on-site quick couplers. When the system is not charged, it shall be the Contractor's

responsibility to supply adequate amounts of water from a water truck or other approved source. Hoses and other watering equipment shall be supplied by Contractor.

1. Watering Amount:
    a. Minimum watering requirements shall be twenty-five (25) gallons of water per caliper inch of every tree when temperatures are at or above forty degrees (40°) F.
    b. Watering frequency shall be based on the average soil moisture level throughout the planting area.
        1) An average of six (6) “Average” on a soil moisture meter shall be maintained during establishment.
        2) Readings shall be taken every two (2) weeks at a minimum during the Construction period and at a minimum of four (4) locations throughout the planting area.
2. Readings shall be taken at a depth of eight inches (8”).At time of Substantial Completion, verify that tree-watering devices are in good working order and leave them in place. Replace improperly functioning devices.

B. If Landscape Maintenance is included in the contract, then the Contractor shall continue maintenance of all trees, shrubs, and groundcovers after Substantial Completion as specified in Division 32 Section “Landscape Maintenance”.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. Measurement will be based on the percentage complete for the lump sum contract amount for Trees, Plants, and Groundcovers.

4.2 PAYMENT

A. Payment will be made at the lump sum contract price, and shall include required materials, transportation, equipment, labor, earthwork, loading, transporting, stockpiling, disposing, hauling off, watering, dust control, erosion and sediment control, fine grading, maintenance of temporary protection by fencing or other means, watering, maintenance, and all other items required until Final Acceptance of the work as required in accordance with the Contract Drawings and Specifications.

END OF SECTION 32 93 00