

BIDDING DOCUMENTS
FOR THE
SHOREWOOD FOREST SUBDIVISION
RAVINE RESTORATION & STORM SEWER IMPROVEMENTS
IN
PORTER COUNTY, INDIANA

CERTIFIED BY:



A handwritten signature in black ink, appearing to read "Michael E. Novotney".

NOVEMBER 2024

PREPARED FOR:
PORTER CO. DEPT. OF DEVELOPMENT & STORM WATER MANAGEMENT
155 INDIANA AVE., STE. 311
VALPARAISO, IN 46383
(219) 465-3530

PREPARED BY:
WESSLER ENGINEERING, INC.
379 EAST 84TH DRIVE
MERRILLVILLE, IN 46410
(317) 788-4551

[THIS PAGE INTENTIONALLY LEFT BLANK]

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1. Invitation to Bid	1-4
2. Instructions to Bidders	5-14
3. Bid Form	15-20
(a) Basis of Bid Form	16-18
4. Responsible Bidding Submittal Requirements Form	21-24
5. Bidder’s Work History Form	25-28
6. Bidder’s Organizational Experience and Workload Form	29-34
7. Bidder’s Subcontractor and Supplier Form	35-36
8. Bid Bond Form	37-38
9. Notice of Award	39-40
10. Contract Documents	
(a) Agreement	41-46
(b1) Performance Bond Form	47-48
(b2) Payment Bond Form	49-50
(c) General Specifications	51-100
(d) Construction Plans	101-102/Appendix A
(e) Technical Specifications	103-250
(f) Special Provisions	251-254
(g) [Reserved] (Addenda)	N/A
(h) [Reserved] (Contractor’s Bid Form)	N/A
(i) [Reserved] (Contractor’s Basis of Bid Form)	N/A
(j) [Reserved] (Contractor’s Subcontractor & Supplier Form)	N/A
(k) [Reserved] (Notice to Proceed)	N/A
(l) [Reserved] (Work Change Directive)	N/A
(m) [Reserved] (Change Order)	N/A

Appendices of Technical and Other Data

- A Construction Plans Titled, “Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements”, Dated November 5, 2024, Consisting of 16 Sheets, Prepared by Wessler Engineering, Inc.

[THIS PAGE INTENTIONALLY LEFT BLANK]

INVITATION TO BID

OWNER: Porter County Department of Development & Storm Water Management
155 Indiana Ave., Ste. 311
Valparaiso, IN 46383
P: (219) 465-3530

CONTACT: Chelsey R. Gordon, PE
E: chelsey.gordon@porterco.org
P: (219) 465-3652

ENGINEER: Wessler Engineering, Inc.
379 East 84th Street
Merrillville, IN 46410
P: (317) 788-4551

CONTACT: Michael E. Novotney, PE
E: michaeln@wesslerengineering.com
P: (219) 235-9869

The Porter County Department of Development & Storm Water Management hereby invites sealed bids for the project designated as **Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements**, described in detail in these bidding documents and generally described below.

PROJECT LOCATION

The project is located along Shorewood Drive, between Kent Court & Pickwick Place, in the Shorewood Forest Subdivision. The project is located in Section 19, Township 35 North, Range 6 West, in Center Township, Porter County, Indiana.

PROJECT DESCRIPTION

The project consists of the installation of new stormwater infrastructure, including the installation of new storm sewers and new storm sewer structures, to replace severely deteriorated existing storm sewers along Shorewood Drive, between Kent Court and Pickwick Place, and the installation of a step pool stormwater conveyance system to stabilize and restore a severely eroded ravine located between 219 and 221 Shorewood Drive.

The project includes the removal and abandonment of existing storm sewers and the installation of new storm sewers, via open trench construction, including sawcutting and removing existing pavement, excavating, placing bedding and haunching, laying storm sewer pipe, placing initial backfill, placing final backfill, shaping, trimming and finishing, and cleaning, inspecting, and testing; and, the removal and abandonment of existing storm sewer structures and the installation of new storm sewer structures, via open trench construction, including sawcutting and removing existing pavement, excavating, bedding, setting precast reinforced concrete stormwater structures, placing adjusting rings and castings, backfilling, shaping, trimming, and finishing, and cleaning. It will also include pavement repair and pavement replacement on Shorewood Drive, Kent Court, and Pickwick Place, which will all be disturbed during the performance of the work. Excess excavated material generated during the performance of the work shall be disposed of off-site, at an appropriate and, if applicable, properly permitted off-site location.

The project also includes the installation of a step pool stormwater conveyance system, including excavating, placing filter bed mix material, placing riffle mix material, placing cascade, footer, and energy dissipation boulders, constructing riffle weirs, cascade weirs, aprons, runs, glides, and pools, blending with existing adjacent grade, and shaping, trimming, and finishing. It will also include the installation and removal of a temporary haul road to provide construction access to the ravine from Shorewood Drive, including the installation and removal of a temporary stone construction entrance. Excess material used to construct the temporary haul road generated shall be disposed of off-site, at an appropriate and, if applicable, properly permitted off-site location.

The project also includes other items incidental to the work, including clearing and tree removal, maintenance of traffic, erosion and sediment control, and the restoration of areas disturbed during the performance of the work. The work includes the carrying out of all duties and obligations and the furnishing of all labor, material, tools, and equipment, and other incidentals necessary or convenient to the successful completion of the project.

1. DEFINITION OF TERMS

Terms used in this Invitation to Bid have the meanings indicated elsewhere in the bidding documents and shall have such defined meanings wherever used.

2. COPIES OF BIDDING DOCUMENTS

Copies of the bidding documents are fully downloadable on the Porter County Department of Development & Storm Water Management's website at <http://www.portercountystormwater.com>. Complete sets of the bidding documents may be inspected at the issuing office, the Porter County Department of Development & Storm Water Management, 155 Indiana Ave., Ste. 311, Valparaiso, Indiana 46383, and, upon request, each prospective bidder may obtain one complete set of the bidding documents from the issuing office. Additional complete sets of the bidding documents may be inspected at the issuing office and may, upon request, be issued to prospective bidders by the issuing office at the cost of reproduction. Prospective bidders may phone or email the contact listed above to receive notices of addenda to the bidding documents.

The Porter County Department of Development & Storm Water Management, in making copies of the bidding documents available on the above terms, does so only for the purpose of obtaining bids for the project and does not authorize or confer a license for any other use. The bidding documents furnished by the Porter County Department of Development & Storm Water Management that may be relied upon for preparation of a bid are limited to the printed or hard copies. Files of text, data, graphics, or other types provided in electronic media format are furnished only for the convenience of bidder. Any conclusion or information obtained from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies shall take precedence and govern.

3. EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

Each prospective bidder shall, before submitting his or her bid, examine and carefully study the bidding documents and other related data identified therein. Each prospective bidder shall also, before submitting his or her bid, visit the site and become familiar with and satisfy bidder as to the general, local, and site conditions that may affect cost, progress, and performance of the work. The Porter County Department of Development & Storm Water Management assumes no responsibility for errors or misinterpretations resulting from bidder's failure or neglect to conduct such examinations.

4. PRE-BID MEETING

A pre-bid meeting will be held at 10:00 a.m. local time on Thursday, November 21, 2024, at the Porter County Department of Development & Storm Water Management, 155 Indiana Ave., Ste. 311, Valparaiso, Indiana 46383. The pre-bid meeting will also be conducted live via videoconference. All prospective bidders are encouraged to attend and participate in the meeting, either in person or via videoconference. The following information may be used to access and participate in the videoconference.

Zoom Meeting: <https://us02web.zoom.us/j/84199004816?pwd=ChdQsgwAc7k5lqnaGXLkLp7ZnnxfEI.1>
Meeting ID: 841 9900 4816
Passcode: KZJ8YM

Representatives of the Owner, including the Engineer, will be present at the meeting to discuss the project. Owner will transmit to all prospective bidders of record such addenda as Owner considers necessary in response to questions arising at the meeting. Oral statements made in response to questions arising at the meeting shall not be relied upon and will not be binding or legally effective.

Immediately following the pre-bid meeting, each prospective bidder is encouraged to conduct an examination of the site and surrounding area to evaluate the local and site conditions that may affect the work. Upon request, representatives of the Owner, including the Engineer, will be available at the project site at such time to respond to questions that may arise as a result of the site examination.

5. QUALIFICATIONS OF BIDDERS

It is the intention of the Porter County Department of Development & Storm Water Management to award a contract only to a bidder that furnishes satisfactory evidence that he or she has the requisite experience and ability and sufficient capital, facilities, organization, staffing, and equipment to enable him or her to complete the work successfully and promptly and within the time specified in the bidding documents. Bidder shall complete and submit with his or her bid the Responsible Bidding Submittal Requirements Form provided in the bidding documents, as well as the Bidder's Sworn Work History Form and Bidder's Organizational Experience and Workload Form provided in the bidding documents.

In addition, during the evaluation of bids, the Porter County Department of Development & Storm Water Management may conduct such additional investigations as it deems necessary to establish the responsibility, qualifications, and ability of a bidder to perform the work. Bidders, in accordance with the provisions of Article 6 of the Instructions to Bidders, shall furnish to the Porter County Department of Development & Storm Water Management such additional documentation it may request in order to make such investigations.

6. BID SECURITY

Each bid shall be accompanied by a bid security made payable to Porter County in an amount not less than ten percent (10%) of bidder's total bid and in the form of a bank cashier's check, bank draft, certified check, or bid bond, on the Bid Bond Form included in the bidding documents, or a form otherwise approved by the Porter County Department of Development & Storm Water Management, executed in accordance with the provisions of Article 19 of the Instructions to Bidders, and issued by a surety acceptable to the Owner and authorized to transact business under the laws of the state of Indiana. The bid security shall stand as a guarantee that the successful bidder will, within ten days after receipt of the notice of award, execute and deliver the contract documents and furnish the required contract security, certificates of insurance, and insurance policy endorsements.

If the successful bidder fails to execute and deliver the contract documents and furnish the required contract security, certificates of insurance, and insurance policy endorsements within ten days after receipt of the notice of award, Owner may consider bidder to be in default, annul the notice of award, and the bid security of that bidder shall be forfeited as liquidated damages.

7. INTERPRETATIONS AND ADDENDA

All questions about the meaning or intent of the bidding documents or any discrepancies or omissions identified therein are to be submitted to the Porter County Department of Development & Storm Water Management. All such questions shall be submitted directly to the contact identified in this Invitation to Bid. Interpretations or clarifications considered necessary by the Porter County Department of Development & Storm Water Management in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by the Porter County Department of Development & Storm Water Management as having received the bidding documents and will be posted on the Porter County Department of Development & Storm Water Management website at: <http://www.portercountystormwater.com>.

Questions received after 12:00 p.m. local time on Monday, November 25, 2024, may not be answered, as all Addenda to be issued by the Porter County Department of Development & Storm Water Management will be issued at least two days, excluding holidays, prior to the date for opening of bids in order to provide prospective bidders ample time to incorporate such Addenda into their bids. Only questions answered by Addenda will be binding. The Porter County Department of Development & Storm Water Management assumes no responsibility for any other interpretations or clarifications of the bidding documents and such interpretations or clarifications will be without legal effect.

8. BID OPENING

The Porter County Department of Development & Storm Water Management will receive bids for the project until 10:00 a.m. local time on Tuesday, December 3, 2024, at the Office of the Auditor of Porter County, Indiana, 155 Indiana Ave., Ste. 204, Valparaiso, Indiana 46383. Bids will be opened and read aloud on Tuesday, December 3, 2024, at a public opening of bids, to be held at 10:00 a.m. local time, or as soon as possible thereafter, at the Porter County Department of Development & Storm Water Management, 155 Indiana Ave., Ste. 311, Valparaiso,

Indiana 46383. The public opening of bids will also be conducted live via videoconference. All bidders, as well as members of the public, are welcome to attend the opening of bids, either in person or via videoconference.

An abstract of the amounts of the base bid items, items “as ordered by Engineer,” if any, additive bid items, if any, alternate bid items, if any, and total bids will be made available to bidders after the opening of bids.

9. EVALUATION OF BIDS AND AWARD OF CONTRACT

The Porter County Department of Development & Storm Water Management reserves the right to reject any or all bids, including, without limitation, nonconforming, nonresponsive, unbalanced, or conditioned bids and to reject the bid of any bidder whom it finds, after reasonable inquiry and evaluation, to not be responsible. The Porter County Department of Development & Storm Water Management further reserves the right to reject the bid of any bidder if it believes that it would not be in the best interest of the project to make an award to that bidder. The Porter County Department of Development & Storm Water Management also reserves the right to waive all irregularities or informalities at its discretion and to negotiate a contract with the successful bidder. If a contract is to be awarded, the Porter County Department of Development & Storm Water Management will award the contract to the lowest responsive and responsible bidder whose bid is in the best interests of the project.

PORTER CO. DEPARTMENT OF DEVELOPMENT & STORM WATER MANAGEMENT

DATED:
November 5, 2024

BY ORDER OF:
Chelsey Gordon, PE
Storm Water Program Manager

INSTRUCTIONS TO BIDDERS

1. DEFINITION OF TERMS

Terms used in these Instructions to Bidders have the meanings indicated in the proposed contract documents and shall have such defined meanings wherever used. Additional terms used in these Instructions to Bidders have the meanings indicated below.

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.

Bidding Documents. The bidding requirements and proposed contract documents, including all Addenda.

Bidding Requirements. The Invitation to Bid, Instructions to Bidders, Bid Form, including all attachments, and bid security.

Issuing Office. The Porter County Department of Development and Storm Water Management, 155 Indiana Avenue, Suite 311, Valparaiso, Indiana 46383.

Notice of Award. The written notice by Owner to the successful bidder stating that, upon timely compliance by the successful bidder with the conditions presented therein, Owner will sign and deliver the agreement.

Successful Bidder. The bidder submitting a responsible and responsive bid to whom Owner makes an award.

2. COPIES OF BIDDING DOCUMENTS

The Invitation to Bid provides instructions on obtaining copies of the bidding documents from the issuing office. Owner, in making copies of the bidding documents available to bidders, does so only for the purpose of obtaining bids for the project and does not authorize or confer a license for any other use.

Only complete sets of the bidding documents shall be used in preparing bids; Owner assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of bidding documents. The bidding documents furnished by the issuing office that may be relied upon for preparation of a bid are limited to the printed or hard copies. Files of text, data, graphics, or other types provided in electronic media format are furnished only for the convenience of bidder. Any conclusion or information obtained from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies shall take precedence and govern.

3. SITE

Owner shall furnish the site. All easements and landowner agreements necessary to allow for the prosecution of the work will be obtained and, if necessary, paid for by Owner in advance of the start of the work. Land and access thereto required for construction, temporary construction facilities, and the storage of materials and equipment to be incorporated into the work are located on site. If the successful bidder should wish to use another area for temporary construction facilities, the storage of materials and equipment, or other purposes, he or she shall obtain written approval from the owner of such property and present such written approval to the Owner prior to using such area for such purpose.

4. EXAMINATION OF BIDDING DOCUMENTS AND SITE

Information provided in the bidding documents regarding topography, utility locations, stream conditions, site accessibility, and other existing conditions may not be reflective of the current conditions found on site. Each prospective bidder shall, before submitting his or her bid, visit and become familiar with the current conditions found on site. Owner assumes no responsibility for errors or misinterpretations resulting from bidder's failure or neglect to conduct such examination.

In addition to examining the current conditions found on site, it is the responsibility of each bidder before submitting a bid to:

- (a) examine and carefully study the bidding documents;
- (b) visit the site and become familiar with and satisfy bidder as to the general, local, and site conditions that may affect cost, progress, and performance of the work;
- (c) become familiar with and satisfy bidder as to all federal, state, and local laws and regulations that may affect cost, progress, and performance of the work;
- (d) consider the information known to bidder; information commonly known to contractors doing business in the locality of the site; information and observations obtained from visits to the site; and the bidding documents, with respect to the effect of such information, observations, and documents on: (1) the cost, progress, and performance of the work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by bidder, including applying any specific means, methods, techniques, sequences, and procedures of construction required by the bidding documents; and, (3) bidder's safety precautions and programs;
- (e) agree, at the time of submitting its bid, that no further examinations, investigations, explorations, tests, studies, or data are necessary for determining his or her ability to perform the work at the prices(s) bid and within the times required, and in accordance with the other terms and conditions of the bidding documents;
- (f) promptly give Owner written notice of all conflicts, errors, ambiguities, or discrepancies that bidder discovers in the bidding documents and confirm that the written resolution thereof by Owner is acceptable to bidder; and,
- (g) determine that the bidding documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the work.

Bidder, by submitting his or her bid, represents: that bidder has complied with every requirement of this Article; that, without exception, bidder's bid is premised upon performing and furnishing the work described within the bidding documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or required by the bidding documents; that bidder has given Owner written notice of all conflicts, errors, ambiguities, and discrepancies that bidder has discovered in the bidding documents and that the written resolutions thereof by Owner are acceptable to bidder; and, that the bidding documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the work. Owner assumes no responsibility for errors or misinterpretations resulting from any matters or things which bidder did not examine and satisfy himself or herself as to prior to submitting his or her bid.

Upon request, Owner will provide bidder access to the site to conduct such additional explorations, investigations, explorations, tests, and studies as bidder deems necessary for preparation of a bid. Bidder shall fill any and all holes and clean up and restore the site to its former condition upon completion of such explorations, investigations, tests, and studies. Bidder shall comply with all applicable laws and regulations relative to such explorations, investigations, tests, and studies.

5. PRE-BID MEETING

A pre-bid meeting will be held at the time and place indicated in the Invitation to Bid. All prospective bidders are encouraged to attend and participate in the meeting.

Representatives of the Owner, including the Engineer, will be present at the meeting to discuss the project. Owner will transmit to all prospective bidders of record such addenda as Owner considers necessary in response to questions arising at the meeting. Oral statements made in response to questions arising at the meeting shall not be relied upon and will not be binding or legally effective.

Immediately following the pre-bid meeting, each prospective bidder is encouraged to conduct an examination of the site and surrounding area to evaluate the local and site conditions that may affect the work. Upon request, representatives of the Owner, including the Engineer, will be available at the project site at such time to respond to questions that may arise as a result of the site examination.

6. QUALIFICATIONS OF BIDDERS

It is the intention of the Owner to award a contract only to a bidder that furnishes satisfactory evidence that he or she has the requisite experience and ability and sufficient capital, facilities, organization, staffing, and equipment to enable him or her to complete the work successfully and promptly and within the time specified in the bidding documents. Bidder shall complete and submit with his or her bid the Responsible Bidding Submittal Requirements Form provided in the bidding documents, as well as the Bidder's Sworn Work History Form and Bidder's Organizational Experience and Workload Form. Bidder is also advised to carefully review those portions of the bidding requirements regarding bidder's representations and requiring bidder's certifications.

In addition, during the evaluation of bidders, Owner may conduct such additional investigations as it deems necessary to establish the responsibility, qualifications, and ability of a bidder to perform the work. Within five days of Owner's request, bidder shall submit written evidence such as previous experience, present commitments, and such other data as Owner may request to establish his or her responsibility, qualifications, and ability to perform the work. This information may include, but shall not be limited to:

- (a) location and description of bidder's permanent place of business;
- (b) evidence of bidder's ability to provide the facilities, staffing, and equipment necessary to complete the work;
- (c) list of similar projects recently completed by bidder, including the names and telephone numbers of references for each project;
- (d) current financial statement for bidder prepared and certified by a certified public accountant; and,
- (e) evidence that bidder is not responsible for any outstanding federal, state, or local regulatory violations.

7. BID SECURITY

Each bid shall be accompanied by a bid security made payable to the Owner in an amount not less than ten percent (10%) of bidder's total bid and in the form of a bank cashier's check, bank draft, certified check, or bid bond, on the Bid Bond Form included in the bidding documents, or a form otherwise approved by the Owner, executed in accordance with the provisions of Article 19 of these Instructions to Bidders, and issued by a surety acceptable to the Owner and authorized to transact business under the laws of the state of Indiana. The bid security shall stand as a guarantee that the successful bidder will, within ten days after receipt of the notice of award, execute and deliver the contract documents and furnish the required contract security, certificates of insurance, and insurance policy endorsements. Bids not accompanied by a properly prepared and executed bid security will not be considered.

The bid security of the successful bidder will be retained until such bidder has executed the contract documents, furnished the required contract security, certificates of insurance, and insurance policy endorsements, and met the other terms and conditions of the notice of award. If the successful bidder fails to execute and deliver the contract documents and furnish the required contract security, certificates of insurance, and insurance policy endorsements within ten days after receipt of the notice of award, Owner may consider bidder to be in default, annul the notice of award, and the bid security of that bidder shall be forfeited as liquidated damages.

The bid security of the next lowest responsive and responsible bidder whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the effective date of the agreement or 61 days after the opening of bids, whereupon bid security furnished by such bidder will be returned. The bid security of all other bidders whom Owner believes do not have a reasonable chance of receiving the award will be returned within seven days after the opening of bids. If all bids are rejected, all bid securities will be returned within seven days of the time of rejection.

8. SUBCONTRACTORS, SUPPLIERS, AND OTHERS

Bidder shall complete and submit with his or her bid the Bidder's Subcontractor and Supplier Form provided in the bidding documents. The Bidder shall list on such form all of the subcontractors, suppliers, individuals, or entities who will perform work or labor for or render services or supplies to the bidder in an amount in excess of ten percent (10%) of the bidder's total bid. The bidder shall identify on such form the particular work or labor or the particular services or supplies that each such subcontractor, supplier, individual, or entity will perform or render.

Owner reserves the right to conduct, during the evaluation of bidders, such additional investigations as it deems necessary to establish the responsibility, qualifications, and ability of a named subcontractor, supplier, individual, or entity to perform the work. If requested by Owner, within five days of Owner's request, bidder shall submit a Bidder's Work History Form and Bidder's Organizational Experience and Workload Form for any named subcontractor, supplier, individual, or entity. If Owner, after due investigation, has reasonable objection to any proposed subcontractor, supplier, individual, or entity, Owner may request bidder to submit a replacement, without an increase in the total bid. Bidders shall not otherwise substitute, delete, or add to the Bidder's Subcontractor and Supplier Form without approval of Owner.

If bidder declines to make any such replacement, and such bidder would have otherwise been the successful bidder, Owner may award the contract to the next lowest responsive and responsible bidder that proposes to use subcontractors, suppliers, individuals, or entities acceptable to Owner. Declining to make requested replacements will not constitute grounds for forfeiture of the bid security of any bidder. Bidder shall not be required to use any subcontractor, supplier, individual, or entity against whom bidder has reasonable objection.

Any subcontractor, supplier, individual, or entity so listed and against which Owner makes no written objection prior to issuing a notice of award will be deemed acceptable to Owner, subject to revocation of such acceptance after the effective date of the agreement, as provided for in the proposed contract documents. Any substitutions, deletions, or additions made to the Bidder's Subcontractor and Supplier Form after the effective date of the agreement shall be made in accordance with the applicable provisions of the contract documents.

9. "OR EQUIVALENT" ITEMS

Bidder shall base his or her bid upon the items specified or described in the bidding documents or those "or equivalent" items approved by Owner prior to the opening of bids. The items described in the bidding documents establish a standard of required type, function, and quality to be met by any proposed "or equivalent" item. No item will be considered by Owner during the evaluation of bids as an "or equivalent" item unless a written request for approval of the item has been submitted by bidder in accordance with the applicable provisions of the proposed contract documents and such request has been received by Owner at least five days prior to the date for opening of bids. In all instances, the burden of proof of the merit of the proposed "or equivalent" item shall be upon the bidder and the Owner shall be the sole judge of the equivalency of a proposed "or equivalent" item to that specified or described in the bidding documents. The Owner's decision to approve or disapprove any proposed "or equivalent" item will be final. If Owner approves any proposed "or equivalent" item, such approval will be set forth in an Addendum issued at least two days prior to the date for opening of bids in order to provide prospective bidders ample time to incorporate such Addendum into their bids. Owner assumes no responsibility for substitutions of items made in any other manner during the preparation of bids.

10. INTERPRETATIONS AND ADDENDA

All questions about the meaning or intent of the bidding documents or any discrepancies or omissions identified therein are to be submitted to Owner in writing. All such questions shall be submitted directly to the contact identified in the Invitation to Bid. Interpretations or clarifications considered necessary by Owner in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Owner as having received the bidding documents. Questions received less than two days prior to the date for opening of bids may not be answered, as all Addenda to be issued by the Owner will be issued at least one day prior to the date for opening of bids in order to provide prospective bidders ample time to incorporate such Addenda into their bids. Only questions answered by Addenda will be binding. Owner assumes no responsibility for any other interpretations or clarifications of the bidding documents and such interpretations or clarifications will be without legal effect.

Addenda may also be issued by Owner to clarify, correct, or change the bidding documents as deemed advisable by Owner.

11. TAXES

All applicable sales, use, payroll, and other similar taxes required to be paid during the performance of the work shall be considered during the preparation of bids. Bidders are hereby advised that Owner is exempt from Indiana state sales taxes on materials to be incorporated into the work and such exemption shall be considered during the preparation of bids. Owner will furnish evidence of such exemption to successful bidder, if necessary, for use in purchasing materials to be incorporated into the work. Owner's exemption does not apply to construction

supplies, tools, machinery, equipment, or other property purchased or leased by successful bidder, or to materials not incorporated into the work.

12. EMPLOYMENT PRACTICES

All applicable federal and state statutes pertaining to the selection of labor, including all applicable equal opportunity employment laws, shall apply to the contract and shall be considered during the preparation of bids.

13. UTILIZATION OF MINORITY AND WOMEN'S BUSINESS ENTERPRISES

Owner desires to provide minority business enterprises (MBE) and women's business enterprises (WBE) with a fair opportunity to provide the services described in these bidding documents, and encourages firms to partner with MBEs and WBEs to the maximum extent practicable. The MBE and WBE goals for this project are as follows:

MBE: 7%

WBE: 5%

A "minority business enterprise" (MBE) is defined as a business concern that is: (1) at least 51% owned, managed and controlled by one or more minority individuals, or, in the case of a publicly owned business, at least 51% of the stock is owned by one or more minority individuals; (2) managed and directed by one or more of the minority owners on a daily basis; and, (3) is certified as such by a certifying entity. The ownership interest must be real and continuous and not created solely to meet the MBE goals of this project.

A "women's business enterprise" (WBE) is defined as a business concern that is: (1) at least 51% owned, managed, operated and controlled by one or more women, or, in the case of publicly owned business, at least 51% of the stock is owned by one or more women; (2) managed and directed by one or more of the women owners on a daily basis; and, (3) is certified as such by a certifying entity. The ownership interest must be real and continuous and not created solely to meet the WBE goals of this project.

Please note that only the utilization of certified MBEs and WBEs can be counted toward the MBE and WBE goals for this project.

14. PREPARATION OF BID

Bids shall be made using only the Bid Form and any attachments thereto included in the bidding documents. Bids made without the use of such form and attachments will not be considered. Bidders need not return the entire bidding documents when submitting a bid; the Bid Form and any attachments thereto may be detached from the remainder of the bidding documents to facilitate the preparation and submission of bid by bidder.

Bidder shall fill in all blanks on the Bid Form and all blanks on any attachments thereto using "not applicable," "N/A," or "none" where applicable. Entries on the Bid Form and any attachments thereto shall be typed or legibly written in ink. Bidders are warned against making alterations of any kind to the Bid Form and any attachments thereto or to any entry thereon. Bid Forms or any attachments thereto that contain omissions, conditions, alterations, or additions not called for by Owner may be rejected or interpreted so as to be favorable to Owner. Entries shall be included for each and every bid item listed on the Basis of Bid Form, which is an attachment to the Bid Form. Owner may reject a bid if it does not contain entries for each and every bid item listed on the Basis of Bid Form or may interpret any item left blank as a price of "no charge" for the item. In case of any error in adding or multiplying individual entries on the Basis of Bid Form, such as in adding or multiplying quantities and unit prices, the true sum or product of the individual entries on the Basis of Bid Form shall take precedence and govern.

Total bids are to be provided in both words and figures, as provided for on the Basis of Bid Form. In case of conflict between the words and figures provided on the Basis of Bid Form, the words shall take precedence and govern. In case of conflict between the total bid and the sum of the individual entries on the Basis of Bid Form, the true sum shall take precedence and govern.

15. APPROXIMATE QUANTITIES

The quantities of base bid items, items "as ordered by Engineer," if any, additive bid items, if any, and alternate bid items, if any, appearing in the Basis of Bid Form are estimates prepared by Engineer. Such estimates are

provided solely for the Owner's convenience in comparing bids, establishing pay item unit prices, and determining an initial contract price. In accordance with the proposed contract documents, payment to the successful bidder will be based upon the actual quantities of work performed, the acceptance of such work and the determination of such quantities to be made by the Engineer in accordance with the contract documents.

16. ITEMS "AS ORDERED BY ENGINEER"

All items appearing in the Basis of Bid Form as items "as ordered by Engineer" are contingent work items that may be selected for inclusion in the work during the performance of the work at the sole discretion of Owner. Bidder acknowledges that bidder's total bid includes such items "as ordered by Engineer" but that such items "as ordered by Engineer" shall not be included in the work unless Owner adds such items "as ordered by Engineer" to the work during the performance of the work in accordance with the contract documents. Once such items "as ordered by Engineer" have been added to the work, payment for such items "as ordered by Engineer" will be based on the actual quantities of such work completed by bidder and accepted by Owner.

17. ADDITIVE BID ITEMS

All items appearing in the Basis of Bid Form as additive bid items are contingent work items that may be selected for inclusion in the work prior to the notice of award at the sole discretion of Owner. Bidder acknowledges that bidder's total bid does not include such additive bid items but that the initial contract price will depend on the number of additive bid items selected for inclusion in the work prior to the notice of award. Once such additive bid items have been included in the work, payment for such additive bid items will be based on the actual quantities of such work completed by bidder and accepted by Owner.

18. ALTERNATE BID ITEMS

All items appearing in the Basis of Bid Form as alternate bid items are contingent work items that may be substituted for base bid items and selected for inclusion in the work prior to the notice of award at the sole discretion of Owner. Bidder acknowledges that bidder's total bid does not include such alternate bid items but that the initial contract price will depend on the number of alternate bid items substituted for base bid items and selected for inclusion in the work prior the work prior to the notice of award. Once such alternate bid items have been included in the work, payment for such alternate bid items will be based on the actual quantities of such work completed by bidder and accepted by Owner.

19. SIGNING OF BID

Bidder shall observe the following requirements in the signing of his or her bid:

- (a) A bid by a corporation shall be executed in the legal name of the corporation by the president or other corporate officer authorized to sign contracts on behalf of the corporation. The bid shall bear the attesting signature of the secretary or an assistant secretary of the corporation. The official address and of the corporation and the state of incorporation shall be provided.
- (b) A bid by a limited liability company shall be executed in the legal name of the firm by a member of the company. The official address of the company and the state of formation shall be provided.
- (c) A bid by a partnership shall be executed in the legal name of the partnership and signed by all of the partners. The official address of the partnership shall be provided.
- (d) A bid by an individual shall show the bidder's name and official address.
- (e) A bid by a joint venture shall be executed by each joint venture in the manner indicated on the Bid Form. The official address of the joint venture shall be provided.

All names shall be printed in ink below the signatures. When requested by Owner, satisfactory evidence of the authority of the person or persons signing on behalf of bidder shall be furnished by bidder.

The signature requirements set forth in this Article shall apply to all other bidding requirements requiring execution by bidder, as well as to all contract documents requiring execution by bidder.

20. SUBMITTAL OF BID

Bids shall consist of properly prepared and signed Bid Forms, complete with an acknowledgement of the receipt of all Addenda issued by Owner, if any, and all of the following attachments thereto:

- (a) Basis of Bid Form;
- (b) Responsible Bidding Submittal Requirements Form;
- (c) Bidder's Work History Form;
- (d) Bidder's Organizational Experience and Workload Form;
- (e) Bidder's Subcontractor and Supplier Form; and,
- (f) Bid Security

Each bid shall include all of the bidding requirements named above and shall be enclosed in a sealed package, plainly marked with the project title, the name and address of bidder, and the notation "BID ENCLOSED." Bids shall be submitted no later than the date and time prescribed and at the place indicated in the Invitation to Bid. If a bid is sent by mail or other delivery system, the sealed envelope containing the bid shall be enclosed in a separate package and plainly marked on the outside as described above.

21. WITHDRAWAL OF BID

A bid may be withdrawn at any time prior to the date and time for the opening of bids by an appropriate written request duly executed by the bidder in accordance with the provisions of Article 19 of these Instructions to Bidders and delivered to the Owner prior to the date and time for the opening of bids. Such withdrawal will not prevent a bidder from submitting a new bid prior to the date and time for the opening of bids.

No bid shall be withdrawn without the written consent of Owner for a period of 60 days after the opening of bids. Any bid may be withdrawn at any time following the expiration of such 60 day period, provided that an appropriate written request duly executed by the bidder in accordance with the provisions of Article 19 of these Instructions to Bidders is delivered to the Owner. If no such written request is filed, the date for accepting such bid shall be extended until such written request is filed or until Owner has executed a contract for the work or rejects such bid in writing.

22. OPENING OF BIDS

Bids will be opened at the time and place indicated in the Invitation to Bid and, unless obviously non-responsive, read aloud publicly. Bidders are invited to be present at the opening of bids. An abstract of the amounts of the base bid items, items "as ordered by Engineer," if any, additive bid items, if any, alternate bid items, if any, and total bids will be made available to bidders after the opening of bids.

23. BIDS REMAIN SUBJECT TO ACCEPTANCE

All bids will remain subject to acceptance for 60 days after the opening of bids, or for such longer period of time that bidder may agree to in writing upon request of Owner. Owner may, in its sole discretion, release or reject any bid prior to the end of this acceptance period.

24. DISQUALIFICATION OF BIDS

More than one bid for the same work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any bidder has an interest in more than one bid for the work may be cause for disqualification of that bidder and the rejection of all bids in which that bidder has an interest. If there are reasonable grounds for believing that collusion exists among the bidders, the bids of the bidders reasonably believed to be involved in such collusion will not be considered. If a bidder is or has been in default on a contract with Owner or in the payment of monies due Owner, his or her bid will not be considered.

25. EVALUATION OF BIDS AND AWARD OF CONTRACT

In evaluating bids, Owner will consider whether or not the bids address all of the bidding requirements (i.e., Bid Form and any attachments thereto), address such base bid items, items "as ordered by Engineer," additive bid items, and alternate bid items as may be included on the Basis of Bid Form, and include all of the information requested on the Bid Form and any attachments thereto. In evaluating bidders, Owner will consider the

qualifications of bidders and may consider the qualifications and experience of subcontractors, suppliers, and other individuals or entities which have been identified by bidder in accordance with the provisions of Article 8 of these Instructions to Bidders. Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and ability of bidders and any named subcontractors, suppliers, individuals, or entities to perform the work. In accordance with the provisions of these Instructions to Bidders, bidder shall promptly and in a timely manner submit such information and data as Owner may request to conduct such investigations.

Owner reserves the right to reject any or all bids, including, without limitation, nonconforming, nonresponsive, unbalanced, or conditioned bids and to waive all irregularities or informalities at its discretion. Owner further reserves the right to reject the bid of any bidder whom it finds, after reasonable inquiry and evaluation, to not be responsible. Owner may also reject the bid of any bidder if it believes that it would not be in the best interest of the project to make an award to that bidder.

If a contract is to be awarded, Owner will award the contract to the lowest responsive and responsible bidder whose bid is in the best interests of the project. The Owner reserves the right to negotiate an agreement with the successful bidder.

26. NOTICE OF AWARD

If a contract is awarded by Owner, such award will be made when a formal notice of award, duly executed by the Owner, has been issued by Owner and delivered or sent by mail or other delivery system to the successful bidder at the principal business address shown on his or her Bid Form.

27. CONTRACT SECURITY AND INSURANCE

Upon award of the contract, the successful bidder will be required to furnish, as contract security, a performance bond and a payment bond, each in the penal sum of the full amount of the initial contract price, on the forms included in the bidding documents, or forms otherwise approved by the Owner, executed in accordance with the provisions of Article 19 of these Instructions to Bidders, and issued by a surety acceptable to the Owner and authorized to transact business under the laws of the state of Indiana. The successful bidder will be required to furnish such contract security to Owner within ten days after receipt of a notice of award.

Upon award of the contract, the successful bidder will also be required to furnish certificates of insurance and insurance policy endorsements, as required by the contract documents. Such insurance shall be provided by insurance companies acceptable to the Owner and authorized to transact business under the laws of the state of Indiana. The successful bidder will be required to furnish such certificates of insurance and insurance policy endorsements to Owner within ten days after receipt of a notice of award.

28. E-VERIFY AFFIDAVIT AND CERTIFICATION REGARDING INVESTMENTS IN IRAN

As required by IC 22-5-1.7-11 and IC 5-22-16.5, upon award of the contract, the successful bidder will be required to furnish an E-Verify Affidavit and Certification Regarding Investments in Iran, on a form to be provided by the Owner, and executed in accordance with the provisions of Article 19 of these Instructions to Bidders. The successful bidder will be required to furnish such E-Verify Affidavit and Certification Regarding Investments in Iran within ten days after receipt of a notice of award.

29. SIGNING OF AGREEMENT

When Owner issues a notice of award to the successful bidder, it shall be accompanied by two unsigned counterparts of the agreement along with the other contract documents requiring execution attached thereto. Within ten days after receipt of the notice of award, the successful bidder shall sign and deliver the two counterparts of the agreement and the other contract documents requiring execution attached thereto, along with the required contract security, certificates of insurance, insurance policy endorsements, and E-Verify Affidavit and Certification Regarding Investments in Iran to Owner. Within ten days thereafter, Owner shall deliver one fully signed counterpart to successful bidder with two complete sets of the contract documents with appropriate identification. Owner will furnish additional copies of the contract documents to successful bidder upon request.

Owner will date the unsigned counterparts of the agreement that will accompany the notice of award to indicate when the agreement is to become effective. This will be the effective date of the agreement. The required contract

security, certificates of insurance, and insurance policy endorsements shall be dated the same as the effective date of the agreement.

30. FAILURE TO SIGN AGREEMENT

If the successful bidder fails to execute and deliver the contract documents and furnish the required contract security, certificates of insurance, and insurance policy endorsements within ten days after receipt of a notice of award, Owner may consider bidder to be in default and annul the notice of award. Upon annulment of the notice of award, Owner may then award the contract to the next lowest responsive and responsible bidder whose bid is in the best interests of the project.

In the event of any such failure by the successful bidder to timely and properly execute and deliver the contract documents and furnish the required contract security, certificates of insurance, and insurance policy endorsements, it will be difficult and impracticable to ascertain and determine the amount of damage that Owner will sustain by reason of such failure. For such reason, bidder, by submitting his or her bid, agrees that Owner shall have the right, at its sole discretion in the event of any such default, to retain or recover, as reasonably estimated liquidated damages, and not as a penalty, the entire amount of the bid security.

[THIS PAGE INTENTIONALLY LEFT BLANK]

BID FORM

(Based on State Form 52414 (R2 / 2-13) / Form 96 (Revised 2013))

SECTION I. BID
(Please type or print)

Date (month, day, year): _____

1. Project: _____
2. Owner (Governmental Unit): _____
3. County: _____
4. Respondent (Firm): _____
Address: _____
City/State/ZIP Code: _____
5. Telephone Number: _____
6. Agent of Respondent (if applicable): _____

Pursuant to notices given, the undersigned offers to furnish labor, equipment, and/or material necessary to complete the public works project of _____
(Governmental Unit) in accordance with the plans and specifications prepared by _____
_____ and dated _____ for the sum of:
_____ \$ _____

The undersigned bidder further agrees to furnish, with this bid, a bid security made payable to the owner in an amount not less than ten percent (10%) of bidder's total bid and in the form of a bank cashier's check, bank draft, certified check, or bid bond, on the bid bond form included in the bidding documents, or a form otherwise approved by the owner, executed in accordance with the provisions of the instructions to bidders, and issued by a surety acceptable to the owner and authorized to transact business under the laws of the state of Indiana.

If items "as ordered by engineer", additive bid items, and/or alternate bid items will be considered by owner, the undersigned bidder shall submit a bid for each item "as ordered by engineer", additive bid item, and/or alternate bid item in accordance with the instructions to bidders. If additional items of work originally included in the contract are needed, the unit costs associated with such work shall be the same as those included in the contract, if accepted by the owner. Any addenda issued by the governmental unit shall be specifically acknowledged by the undersigned at the appropriate location on this form.

The contractor and his subcontractors, if any, shall not discriminate against or intimidate any employee, or applicant for employment, to be employed in the performance of this contract, with respect to any matter directly or indirectly related to employment because of race, religion, color, sex, national origin or ancestry. Breach of this covenant may be regarded as a material breach of the contract.

SECTION II. BASIS OF BID FORM
(Please type or print)

This Basis of Bid Form is to be submitted by bidder, as an attachment to the Bid Form, for the project designated as **Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements**. It is to include an entry for each and every work item listed, including all base work items, all items “as ordered by Engineer”, if any, all additive work items, if any, and all alternate work items, if any, as well as a total bid, in both words and figures, as provided for below.

BASE BID

Bidder will perform all work specified or indicated in the contract documents in accordance with terms and conditions of the contract documents for the following price(s):

BASE BID ITEMS

ITEM	DESCRIPTION	UNIT	QTY.	UNIT PRICE	EXT. PRICE
1	MOBILIZATION, DEMOBILIZATION, BONDS, & INSURANCE	LSUM	1		
2	CONSTRUCTION ENGINEERING	LSUM	1		
3	EROSION & SEDIMENT CONTROL	LSUM	1		
4	MAINTENANCE OF TRAFFIC	LSUM	1		
5	CLEARING & GRADING – SHOREWOOD DR. LIMITS	LSUM	1		
6	PAVEMENT REMOVAL, ALL TYPES	SYS	683		
7	CURB REMOVAL, ALL TYPES	LFT	156		
8	ABANDON PIPE (VARYING SIZES)	CYS	11		
9	PIPE REMOVAL (VARYING SIZES)	LFT	271		
10	ABANDON STRUCTURE	CYS	11		
11	STRUCTURE REMOVAL (VARYING SIZES AND TYPES)	EACH	5		
12	PIPE, 15" RCP	LFT	19		
13	PIPE, 18" RCP	LFT	144		
14	PIPE, 12" RCP W/ GRANULAR BACKFILL, CLASS IB	LFT	546		
15	PIPE, 15" RCP W/ GRANULAR BACKFILL, CLASS IB	LFT	128		
16	PIPE 18" RCP W/ GRANULAR BACKFILL, CLASS IB	LFT	40		
17	INLET, TYPE 1	EACH	1		

ITEM	DESCRIPTION	UNIT	QTY.	UNIT PRICE	EXT. PRICE
18	INLET, TYPE 3	EACH	7		
19	STORM MANHOLE, TYPE 1	EACH	7		
20	PRECAST CONCRETE END SECTION, 18"	EACH	1		
21	CONCRETE ROLLED CURB	LFT	156		
22	MILLING, 1-1/2"	SYS	1,502		
23	COMPACTED AGGREGATE BASE, NO. 53, 10"	TON	285		
24	HMA INTERMEDIATE, TYPE B, 2-1/2"	TON	94		
25	HMA SURFACE, TYPE B, 1-1/2"	TON	180		
26	FINAL CLEANUP & RESTORATION – SHOREWOOD DR. LIMITS	LSUM	1		
27	CLEARING & GRADING – RAVINE LIMITS	LSUM	1		
28	SPSC FILTER BED MEDIA, FILL SAND	TON	1,294		
29	SPSC FILTER BED MEDIA, WOOD CHIPS	CYS	192		
30	SPSC RIFFLE WEIRS, RIFFLE MIX	TON	51		
31	SPSC RIFFLE WEIRS, FOOTER BOULDERS	TON	26		
32	SPSC CASCADE WEIRS, CASCADE BOULDERS	TON	103		
33	SPSC CASCADE WEIRS, RIFFLE MIX	TON	16		
34	FINAL CLEANUP & RESTORATION – RAVINE LIMITS	LSUM	1		
TOTAL FOR BASE BID ITEMS (I.E., TOTAL OF EXT. PRICES, ITEMS 1-34):					

ITEMS “AS ORDERED BY ENGINEER”

ITEM	DESCRIPTION	UNIT	QTY.	UNIT PRICE	EXT. PRICE
0.1	OVER-EXCAVATION OF POOR SOILS W/ GRANULAR BACKFILL, CLASS IA	CYS	17		
TOTAL FOR ITEMS “AS ORDERED BY ENGINEER” (I.E., TOTAL OF EXT. PRICES, ITEM 0.1):					

TOTAL BID

TOTAL BID (I.E., TOTAL OF EXT. PRICES, ITEMS 1-34 PLUS ITEM 0.1):	
--	--

Bidder's total bid for the work, which is the sum of the Bidder's extended price(s) for the base bid items and the items "as ordered by Engineer", is:

**TOTAL BID
(IN FIGURES):** _____

**TOTAL BID
(IN WORDS):** _____

Bidder acknowledges that the estimated quantities of items of unit price work included on this Basis of Bid Form are not guaranteed and are provided solely for the purposes of comparing bids, establishing pay item unit prices, and determining an initial contract price. In accordance with the contract documents, payment to the successful bidder will be based upon the actual quantities of work performed, the acceptance of such work and the determination of such quantities to be made by the Engineer in accordance with the contract documents.

SECTION III. CERTIFICATION OF USE OF UNITED STATES STEEL PRODUCTS
(if applicable)

I, the undersigned bidder, or agent of such bidder, understand my statutory obligation to use steel products made in the United States (IC 5-16-8-2). I hereby certify that I and all subcontractors employed by me for this project will use U.S. steel products on this project if awarded to me. I understand that violations hereunder may result in forfeiture of contractual payments.

SECTION IV. BIDDER'S FINANCIAL STATEMENT

Attachment of bidder's financial statement is mandatory. Any bid submitted without said financial statement as required by statute shall thereby be rendered invalid. The financial statement provided hereunder to the governmental unit awarding the contract shall be specific enough and shall provide enough detail so that the governmental unit can make a proper determination of the respondent's capability for completing the project if the contract is awarded to the respondent.

SECTION V. BIDDER'S NON-COLLUSION AFFIDAVIT

The undersigned bidder, or agent of such bidder, being duly sworn under oath, says that he has not, nor has any other member, representative, or agent of the firm, company, corporation, or partnership represented by him, entered into any combination, collusion, or agreement with any person relative to the price to be bid by anyone in response to the invitation to bid issued by the governmental unit, nor to prevent any person from bidding, nor to include anyone to refrain from bidding, and that this bid is provided without reference to any other bid and without any agreement, understanding, or combination with any other person in reference to such other bid.

He further says that no person or persons, firm, or corporation has, have, or will receive, directly or indirectly, any rebate, fee, gift, commission, or thing of value on account of the contract being awarded to the bidder.

SECTION VI. BIDDER'S REPRESENTATIONS

In submitting this bid, bidder represents that:

- (a) Bidder has examined and carefully studied the contract documents, other related data identified in the invitation to bid, and the following addenda, receipt of which is hereby acknowledged:

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____
_____	_____

- (b) Bidder has visited the site and become familiar with and is satisfied as to the general, local, and site conditions that may affect cost, progress, and performance of the work.
- (c) The contract documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the work for which this bid is submitted.

RESPONSIBLE BIDDING SUBMITTAL REQUIREMENTS FORM

This Responsible Bidding Submittal Requirements Form is to be submitted by Bidder, as an attachment to the Bid Form, for the project designated as **Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements**.

[IF NECESSARY, ATTACH ADDITIONAL RESPONSIBLE BIDDING SUBMITTAL REQUIREMENTS FORMS]

1. BIDDER

This form is submitted by:

Full Name of Bidder: _____

Principal Business Address: _____

2. EVIDENCE OF EXISTENCE & GOOD STANDING

Bidder shall attach a Certificate of Existence, formerly known as a Certificate of Good Standing, issued by the Indiana Secretary of State, showing that the Bidder is in existence and that it has complied with all requirements to operate in the state of Indiana. If the Bidder is an individual, partnership, or joint venture, this requirement shall not apply.

3. FORMER BUSINESS NAMES

Bidder shall list any former business names:

Name	Address	Years

4. DISCLOSURE OF VIOLATIONS OF FEDERAL, STATE, OR LOCAL LAWS

Bidder shall disclose any determinations by a court or governmental agency for violations of federal, state, or local laws including, but not limited to, violations of contracting or anti-trust laws, tax or licensing laws, environmental laws, the Occupational Safety and Health Act (OSHA), or the Davis-Bacon Act or related Acts:

5. STAFFING CAPABILITIES & LABOR SOURCES

Bidder shall provide a statement regarding staffing capabilities, including labor sources:

6. EVIDENCE OF PARTICIPATION IN APPRENTICESHIP & TRAINING PROGRAMS

Bidder shall attach evidence of participation in apprenticeship and training programs, applicable to the work to be performed on the project, which are approved by and registered with the United States Department of Labor’s Office of Apprenticeship, or its successor organization. Such evidence shall include a copy of all applicable apprenticeship certificates and standards for applicable training programs.

7. EMPLOYEE DRUG TESTING PLAN

Bidder shall attach a copy of a written plan for employee drug testing that: (i) covers all employees of the bidder who will perform work on the project; and, (ii) meets, or exceeds, the requirements set forth in IC 4-13-18-5 or IC 4-13-18-6.

8. PROJECT MANAGER & SUPERINTENDENT EXPERIENCE

Bidder shall, on the Bidder’s Organizational Experience and Workload Form, provide information regarding the experience of the Bidder’s designated project manager and superintendent.

9. EVIDENCE OF PROFESSIONAL & TRADE LICENSES

Bidder shall attach evidence of any professional and/or trade licenses required by law for any trade or specialty area that is applicable to the project. Bidder shall also disclose any suspension or revocation within the previous five years of any professional and/or trade licenses held by the Bidder or by any office, director, or manager of the Bidder:

10. EVIDENCE OF APPROVED SURETY

Bidder shall attach evidence that it is utilizing and will utilize a surety company which appears on the United States Department of the Treasury’s Listing of Approved Sureties to furnish all required bid and contract securities.

11. DISCLOSURE OF TAX LIENS & DELINQUENCIES

Bidder shall disclose any federal, state, or local tax liens or tax delinquencies owed to any federal, state, or local taxing body in the last five years:

12. CLASSIFICATION OF INDIVIDUALS PERFORMING WORK

Bidder shall provide a statement regarding the proper classification of individuals who will perform work on the project as either: (i) an employee; or (ii) an independent contractor, under all applicable federal and state laws and local ordinances:

13. RELATED EXPERIENCE

In order to demonstrate its capability and qualifications to perform the work generally described in the bidding documents and described in detail in the contract documents, Bidder shall, on the Bidder’s Work History Form, provide information regarding at least three recently (i.e., within last 3 years) and satisfactorily completed projects of similar size and scope in the state of Indiana.

14. EVIDENCE OF PREQUALIFICATION

Bidder shall provide evidence that it appears on the Indiana Department of Administration’s or Indiana Department of Transportation’s List of Prequalified Contractors for at least one similar work type.

15. FORM SUBMITTAL

This form is submitted by _____, who hereby certifies under penalty of law that: (1) he or she has carefully prepared, reviewed, and checked this form; (2) that the statements made on this form are true and correct; and, (3) that all statements made herein have been made on behalf of and with the authorization of the Bidder in support of this bid.

SIGNED AND SUBMITTED ON: _____, 20_____, BY:

By: _____
(Signature)

Printed Name: _____

Title: _____

BIDDER’S WORK HISTORY FORM

This Bidder’s Work History Form is to be submitted by Bidder, as an attachment to the Bid Form, for the project designated as **Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements**.

[IF NECESSARY, ATTACH ADDITIONAL WORK HISTORY FORMS]

[JOINT VENTURES MUST SUBMIT SEPARATE WORK HISTORY FORMS FOR EACH INDIVIDUAL, PARTNERSHIP, OR CORPORATION THAT IS PARTY TO THE JOINT VENTURE]

1. BIDDER

This form is submitted by:

Full Name of Bidder: _____

Principal Business Address: _____

2. NATURE OF BUSINESS

State the nature of the Bidder’s business:

3. COMPOSITION OF WORK

During the past three years, Bidder’s work has consisted of:

_____ % Federal _____ % as Contractor _____ % to Bidder

_____ % State _____ % as Subcontractor _____ % to Subcontractors

_____ % Other Public _____ % to Materials

_____ % Private

4. YEARS IN BUSINESS

State the number of years that Bidder, under its current name and organization, has been continuously engaged

in the aforesaid business: _____ years.

5. PREDECESSOR ORGANIZATIONS

If Bidder has been in business under its current name and organization for less than five years, list any predecessor organizations:

Name	Address	Years

6. BUSINESS LICENSES

List all business licenses currently held by Bidder:

Issuing Agency	Type	Number	Expires

7. RELATED EXPERIENCE

This project, designated as **Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements** consists of the installation of new stormwater infrastructure, including the installation of new storm sewers and new storm sewer structures, to replace severely deteriorated existing storm sewers along Shorewood Drive, between Kent Court and Pickwick Place, and the installation of a step pool stormwater conveyance system to stabilize and restore a severely eroded ravine between 219 and 221 Shorewood Drive.

The project includes the removal and abandonment of existing storm sewers and the installation of new storm sewers, via open trench construction, including sawcutting and removing existing pavement, excavating, placing bedding and haunching, laying storm sewer pipe, placing initial backfill, placing final backfill, shaping, trimming and finishing, and cleaning, inspecting, and testing; and, the removal and abandonment of existing storm sewer structures and the installation of new storm sewer structures, via open trench construction, including sawcutting and removing existing pavement, excavating, bedding, setting precast reinforced concrete stormwater structures, placing adjusting rings and castings, backfilling, shaping, trimming, and finishing, and cleaning.

The project also includes the installation of a step pool stormwater conveyance system, including excavating, placing filter bed mix material, placing riffle mix material, placing cascade, footer, and energy dissipation boulders, constructing riffle weirs, cascade weirs, aprons, runs, glides, and pools, blending with existing adjacent grade, and shaping, trimming, and finishing. It will also include the installation and removal of a temporary haul road to provide construction access to the ravine from Shorewood Drive.

The project also includes other items incidental to the work, including clearing and tree removal, maintenance of traffic, erosion and sediment control, and the restoration of areas disturbed during the performance of the work. The work includes the carrying out of all duties and obligations and the furnishing of all labor, material, tools, and equipment, and other incidentals necessary or convenient to the successful completion of the project.

In order to demonstrate its capability and qualifications to perform the work generally described above and described in detail in the contract documents, Contractor shall:

1. Provide information below regarding at least three recently (i.e., within last 3 years) and satisfactorily completed projects of similar size and scope in the State of Indiana.

All projects described by Contractor below shall demonstrate Contractor’s ability to successfully complete a project of similar size and scope. Similar projects may include:

- Storm sewer installation, via open trench construction, and storm structure installation;
- Ravine, stream, and shoreline restoration; and,
- Projects demonstrating the application of such skills and expertise as may be necessary to perform the work described in the contract documents.

In evaluating respondents, the Department will consider the qualifications and experience of respondent and reserves the right to conduct such additional investigations as it deems necessary to establish the responsibility, qualifications, and ability of respondents to perform the work. This may include, but is not limited to, requests for additional information on work history beyond what is included herein. Contractor shall, promptly and in a timely manner, submit such information and data as the Department may request to conduct such investigations.

	PROJECT 1	PROJECT 2	PROJECT 3
Project Name			
Project Location			
Owner			
Owner's Address			
Reference			
Reference's Phone			
Contractor <i>if Bidder was subcontractor</i>			
Cont. Contact <i>if Bidder was subcontractor</i>			
Cont. Contact's Phone <i>if Bidder was subcontractor</i>			
Description of Work			
Contract Price	\$	\$	\$
Date Completed			
Bidder's Project Manager			
Bidder's Superintendent			

8. FORM SUBMITTAL

This form is submitted by _____, who hereby certifies under penalty of law that: (1) he or she has carefully prepared, reviewed, and checked this form; (2) that the statements made on this form are true and correct; and, (3) that all statements made herein have been made on behalf of and with the authorization of the Bidder in support of this bid.

SIGNED AND SUBMITTED ON: _____, 20_____, BY:

By: _____
 (Signature)

Printed Name: _____

Title: _____

[THIS PAGE INTENTIONALLY LEFT BLANK]

BIDDER’S ORGANIZATIONAL EXPERIENCE AND WORKLOAD FORM

This Bidder’s Organizational Experience and Workload Form is to be submitted by Bidder, as an attachment to the Bid Form, for the project designated as **Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements**.

[IF NECESSARY, ATTACH ADDITIONAL EXPERIENCE & WORKLOAD FORMS]

[JOINT VENTURES MUST SUBMIT SEPARATE EXPERIENCE & WORKLOAD FORMS FOR EACH INDIVIDUAL, PARTNERSHIP, OR CORPORATION THAT IS PARTY TO THE JOINT VENTURE]

1. BIDDER

This form is submitted by:

Full Name of Bidder: _____

Principal Business Address: _____

2. PROJECT MANAGER AND SUPERINTENDENT

Bidder shall provide information below regarding the experience of Bidder’s designated project manager and superintendent.

	Name	Years with Company	Years Experience
Project Manager			
<i>Project Manager schedules and coordinates the work, allocating the resources necessary to complete the project, and preparing and delivering all submittals required under the contract documents, including pay requests.</i>			
Superintendent			
<i>Superintendent supervises and directs the work, overseeing on-site, day-to-day operations on the project site and maintaining control over the quality of the work. Superintendent must be present at all times on the project site.</i>			

3. PROJECT MANAGER’S WORK HISTORY

Bidder’s designated project manager shall have experience scheduling and coordinating construction projects involving the application of skills and expertise similar to those that may be necessary to perform the work described in the contract documents. Bidder shall provide information below regarding such construction projects scheduled and coordinated by the Bidder’s designated project manager.

	PROJECT 1	PROJECT 2	PROJECT 3
Project Name			
Project Location			
Owner			
Owner’s Address			
Reference			
Reference’s Phone			

	PROJECT 1	PROJECT 2	PROJECT 3
Contractor (Cont.) <i>if Bidder was subcontractor</i>			
Cont. Contact <i>if Bidder was subcontractor</i>			
Cont. Contact's Phone <i>if Bidder was subcontractor</i>			
Description of Work			
Significant Work Items <i>Include quantity installed</i>			
# of Crew Supervised			

4. SUPERINTENDENT'S WORK HISTORY

Bidder's designated superintendent shall have experience supervising and directing construction projects involving the application of skills and expertise similar to those that may be necessary to perform the work described in the contract documents. Bidder shall provide information below regarding such construction projects supervised and directed by the Bidder's designated superintendent.

	PROJECT 1	PROJECT 2	PROJECT 3
Project Name			
Project Location			
Owner			
Owner's Address			
Reference			
Reference's Phone			

	PROJECT 1	PROJECT 2	PROJECT 3
Contractor (Cont.) <i>if Bidder was subcontractor</i>			
Cont. Contact <i>if Bidder was subcontractor</i>			
Cont. Contact's Phone <i>if Bidder was subcontractor</i>			
Description of Work			
Significant Work Items <i>Include quantity installed</i>			
# of Crew Supervised			

5. CURRENT ORGANIZATIONAL WORKLOAD

Bidder shall provide below information regarding the Bidder's current organizational workload, attaching, as necessary, additional Organizational Experience and Workload Forms.

PROJECT 1

Project Name			
Project Location			
Owner			
Owner's Address			
Reference			
Reference's Phone		Reference's E-mail	
Description of Work			
Project Manager		Superintendent	
Contract Price			
Percent Complete		Expected Completion Date	

PROJECT 2

Project Name			
Project Location			
Owner			
Owner's Address			
Reference			
Reference's Phone		Reference's E-mail	
Description of Work			
Project Manager		Superintendent	
Contract Price			
Percent Complete		Expected Completion Date	

PROJECT 3

Project Name			
Project Location			
Owner			
Owner's Address			
Reference			
Reference's Phone		Reference's E-mail	
Description of Work			
Project Manager		Superintendent	
Contract Price			
Percent Complete		Expected Completion Date	

6. FORM SUBMITTAL

This form is submitted by _____, who hereby certifies under penalty of law that: (1) he or she has carefully prepared, reviewed, and checked this form; (2) that the statements made on this form are true and correct; and, (3) that all statements made herein have been made on behalf of and with the authorization of the Bidder in support of this bid.

SIGNED AND SUBMITTED ON: _____, 20_____, BY:

By: _____
(Signature)

Printed Name: _____

Title: _____

[THIS PAGE INTENTIONALLY LEFT BLANK]

BIDDER’S SUBCONTRACTOR AND SUPPLIER FORM

This Bidder’s Subcontractor and Supplier Form is to be submitted by Bidder, as an attachment to the Bid Form, for the project designated as **Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements**.

[IF NECESSARY, ATTACH ADDITIONAL SUBCONTRACTOR AND SUPPLIER FORMS]

1. BIDDER

This form is submitted by:

Full Name of Bidder: _____

Principal Business Address: _____

2. BIDDER’S SUBCONTRACTORS AND SUPPLIERS

Bidder shall provide information below regarding all of the first-tier subcontractors, suppliers, individuals, or entities who will perform work or labor on or render services or supplies for the project, as well as all of the second-and lower-tier subcontractors, suppliers, individuals, or entities who will perform work or labor on or render services or supplies for the project in an amount in excess of ten percent (10%) of the Bidder’s total bid.

Subcontractor/Supplier: _____

Principal Business Address: _____

Contact: _____ Telephone: _____

Fax: _____ E-mail: _____

Work to be Performed/
Services to be Provided: _____

Subcontractor/Supplier: _____

Principal Business Address: _____

Contact: _____ Telephone: _____

Fax: _____ E-mail: _____

Work to be Performed/
Services to be Provided: _____

Subcontractor/Supplier: _____

Principal Business Address: _____

Contact: _____ Telephone: _____

Fax: _____ E-mail: _____

Work to be Performed/
Services to be Provided: _____

Subcontractor/Supplier: _____

Principal Business Address: _____

Contact: _____ Telephone: _____

Fax: _____ E-mail: _____

Work to be Performed/
Services to be Provided: _____

Subcontractor/Supplier: _____

Principal Business Address: _____

Contact: _____ Telephone: _____

Fax: _____ E-mail: _____

Work to be Performed/
Services to be Provided: _____

Subcontractor/Supplier: _____

Principal Business Address: _____

Contact: _____ Telephone: _____

Fax: _____ E-mail: _____

Work to be Performed/
Services to be Provided: _____

In accordance with the Instructions to Bidders, Owner reserves the right to conduct, during the evaluation of bidders, such additional investigations as it deems necessary to establish the responsibility, qualifications, and ability of subcontractors, suppliers, individuals, or entities named above to perform the work. This may include, but is not limited to, requests for the submittal of a Bidder's Work History Form and Bidder's Organizational Experience and Workload Form for any subcontractor, supplier, individual, or entity named above. Bidder shall, in accordance with the Instructions to Bidders, promptly and in a timely manner submit such information and data as Owner may request to conduct such investigations.

BID BOND FORM

KNOW ALL MEN BY THESE PRESENTS, THAT _____, as
(full name and principal business address of Bidder)

Bidder, and that _____, as Surety, a corporation organized and
(full name and principal business address of Surety)

existing under the laws of the state of _____, are held and firmly bound unto the PORTER COUNTY
STORM WATER MANAGEMENT BOARD, 155 Indiana Avenue, Valparaiso, Indiana 46383, as Owner,

in the penal sum of _____ Dollars (\$ _____),
(value of bond in words) (value of bond in figures)

for the payment of which, well and truly to be made, we bind ourselves, our heirs, executors, administrators,
successors, and assigns, jointly and severally by these presents.

WHEREAS, Bidder has submitted a bid dated _____, 20____ to Owner for the project
designated as Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements, the conditions
of such submittal are, by this reference, incorporated herein as though fully set forth herein.

NOW, THEREFORE, in accordance with the conditions of Bidder's submittal to Owner of the bid described above,
the condition of the obligation of this bond is such that, if: (1) Bidder, after receiving a notice of award from Owner,
delivers within ten days after receipt of the notice of award, or any extension thereof agreed to in writing by
Owner, the executed agreement and other contract documents requiring execution attached thereto, along with
the required contract security, certificates of insurance, and insurance policy endorsements, to Owner; or, (2)
Bidder's bid is rejected by Owner; or, (3) Owner fails to issue a notice of award to Bidder within 60 days after the
opening of bids, or for such longer period of time agreed to in writing by Bidder, then the obligation of this bond
shall be null and void; otherwise it shall remain in full force and effect.

Surety, for value received, hereby stipulates and agrees that its obligation under this bond shall be in no way
impaired or affected by any extension of the 60 day period after the opening of bids within which Owner may
issue a notice of award to Bidder, and Surety does hereby consent to and waive notice of any such extension.

Upon default of Bidder, which shall occur upon the failure of Bidder, after receiving a notice of award from Owner,
to deliver within ten days after receipt of the notice of award, or any extension thereof agreed to in writing by
Owner, the executed agreement and other contract documents requiring execution attached thereto, along with
the required contract security, certificates of insurance, and insurance policy endorsements, to Owner, the penal
sum will become due and payable to Owner within 30 days after receipt by Bidder and Surety of a written notice
of default from Owner. Such notice will be given by Owner with reasonable promptness upon default of Bidder,
and will identify this bond and include a statement of the amount due. Payment of the penal sum represents the
extent of Bidder's and Surety's liability and receipt of such payment shall be Owner's sole and exclusive remedy
upon default of Bidder.

Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective principal business
addresses shown above. Such notices may be sent by personal delivery, commercial courier, or by registered or
certified mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the
concerned parties.

No suit or action shall be commenced under this bond prior to 30 days after a notice of default is received by
Bidder and Surety and in no case later than one year after the date of the bid described above. Any suit or action
commenced under this bond shall be taken only in a court of competent jurisdiction located in the state in which
the project described above is located.

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 shall be deemed to be included herein as though fully set

forth herein. If any provision of this bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this bond that is not in conflict therewith shall continue in full force and effect. Surety and Bidder, intending to be legally bound hereby, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

SIGNED AND SEALED ON: _____, 20_____, BY:

BIDDER:

Bidder's Name: _____ (SEAL)

By: _____
(Signature)

Printed Name: _____

Title: _____

Attest: _____

SURETY:

Surety's Name: _____ (SEAL)

By: _____
(Signature)

Printed Name: _____

Title: _____

Attest: _____



NOTICE OF AWARD

To: [SUCCESSFUL BIDDER]
From: Porter Co. Dept. of Development & Storm Water Management
Date: [DATE]
Subject: Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements
Construction Services

You are hereby notified that your bid dated [DATE], for the project designated as **Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements** was accepted at the [MONTH] [DAY], [YEAR], meeting of the Porter Co. Storm Water Management Board. You are the successful bidder and are hereby awarded a contract for the project.

The value of your contract is [CONTRACT VALUE], which represents the represents the initial contract price.

Two copies of the agreement and one complete set of the contract documents, including the construction plans, accompany this notice of award.

You must comply with the following conditions within ten days after receipt of this notice of award:

1. Sign and deliver to Department two partially executed copies of the agreement and two fully executed copies of the other contract documents requiring execution attached thereto.
2. Deliver to Department the required contract security, certificates of insurance, and insurance policy endorsements, as required by the Instructions to Bidders (Article 27) and General Specifications (Article 107.20), and a signed E-Verify Affidavit & Certification Regarding Investments in Iran, as required by the Instructions to Bidders (Article 28).

Failure to comply with these conditions within the time specified will permit the Department to consider you to be in default, annul this notice of award, and retain or recover your bid security.

DEPARTMENT

By: _____
(Signature)

Printed Name: _____

Title: _____

Enclosure(s)



[THIS PAGE INTENTIONALLY LEFT BLANK]

CONSTRUCTION SERVICES AGREEMENT
between
**PORTER CO. DEPARTMENT OF DEVELOPMENT &
STORM WATER MANAGEMENT**
and
[NAME OF SUCCESSFUL RESPONDENT]
for
**SHOREWOOD FOREST SUBDIVISION
RAVINE RESTORATION & STORM SEWER IMPROVEMENTS**

This is an agreement by and between the PORTER COUNTY DEPARTMENT OF DEVELOPMENT & STORM WATER MANAGEMENT, 155 Indiana Ave., Ste. 311, Valparaiso, Indiana 46383 (hereinafter called Owner) and [SUCCESSFUL RESPONDENT], [SUCCESSFUL RESPONDENT'S ADDRESS] (hereinafter called Contractor), for the project designated as Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements.

1. Project

The project, for which the work described in the contract documents may be the whole or only a part, is generally described as follows:

The project consists of the installation of new stormwater infrastructure, including the installation of new storm sewers and new storm sewer structures, to replace severely deteriorated existing storm sewers along Shorewood Drive, between Kent Court and Pickwick Place, and the installation of a step pool stormwater conveyance system to stabilize and restore a severely eroded ravine located between 219 and 221 Shorewood Drive.

2. Work

Contractor shall perform all work specified or indicated in the contract documents for the contract price and within the contract times indicated therein and in accordance with all other terms and conditions of the contract documents. The work, which is described in detail in the contract documents, is generally described as follows:

The project includes the removal and abandonment of existing storm sewers and the installation of new storm sewers, via open trench construction, including sawcutting and removing existing pavement, excavating, placing bedding and haunching, laying storm sewer pipe, placing initial backfill, placing final backfill, shaping, trimming and finishing, and cleaning, inspecting, and testing; and, the removal and abandonment of existing storm sewer structures and the installation of new storm sewer structures, via open trench construction, including sawcutting and removing existing pavement, excavating, bedding, setting precast reinforced concrete stormwater structures, placing adjusting rings and castings, backfilling, shaping, trimming, and finishing, and cleaning. It will also include pavement repair and pavement replacement on Shorewood Drive, Kent Court, and Pickwick Place, which will all be disturbed during the performance of the work. Excess excavated material generated during the performance of the work shall be disposed of off-site, at an appropriate and, if applicable, properly permitted off-site location.

The project also includes the installation of a step pool stormwater conveyance system, including excavating, placing filter bed mix material, placing riffle mix material, placing cascade, footer, and energy dissipation boulders, constructing riffle weirs, cascade weirs, aprons, runs, glides, and pools, blending with existing adjacent grade, and shaping, trimming, and finishing. It will also include the installation and removal of a temporary haul road to provide construction access to the ravine from Shorewood Drive, including the installation and removal of a temporary stone construction entrance. Excess material used to construct the temporary haul road generated shall be disposed of off-site, at an appropriate and, if applicable, properly permitted off-site location.

The project also includes other items incidental to the work, including clearing and tree removal, maintenance of traffic, erosion and sediment control, and the restoration of areas disturbed during the performance of the work. The work includes the carrying out of all duties and obligations and the furnishing of all labor, material, tools, and equipment, and other incidentals necessary or convenient to the successful completion of the project.

3. Contract Times

Contractor shall complete all work in accordance with terms and conditions of the contract documents within the dates and times determined pursuant to Paragraphs 3(a), 3(b), 3(c), and 3(d) below.

- (a) Time is of the Essence. All dates and times for milestones, substantial completion, and final completion and readiness for final payment described in the contract documents are of the essence of this agreement.
- (b) Dates for Milestones. Contractor recognizes the dates and times for milestones described below
- (1) The work shall not commence prior to the Earliest Date to Begin Work, as defined and further described in Article SP108.16 of the Special Provisions.
 - (2) If a Notice to Proceed is given, the work shall commence as soon as possible following the issuance of such Notice to Proceed, but not later than the date indicated in such Notice to Proceed.
 - (3) If a full or partial closure of any road is necessary in order to successfully complete the work, and such full or partial closure has been approved by Owner, Contractor shall limit the number of days that such road remains fully or partially closed, as defined and further described in Article SP107.32 of the Special Provisions.
- (c) Dates for Substantial Completion and Final Completion. The work shall be substantially completed, as described in Article 105.17 of the General Specifications, by November 30, 2025, or before, and shall be completed and ready for final payment, as described in Article 109.09 of the General Specifications, by May 30, 2026, or before. Acceptance of and payment for the work shall occur in accordance with the applicable provisions of the contract documents.

Substantial completion shall mean that all stormwater infrastructure to be constructed, including all storm sewer, storm sewer structures, and stormwater step pool conveyance systems, has been constructed, all stormwater infrastructure to be removed and/or abandoned, including all storm sewer and storm sewer structures, has been removed and/or abandoned, all road base to be installed has been installed, all hot mix asphalt pavement to be placed has been placed, all disturbed areas on the site have been shaped, trimmed, and finished, all disturbed areas on the site have been restored (i.e., compost and/or topsoil has been placed, plant seed has been installed, and erosion control blanket and/or flexible growth media has been placed), one set of Contractor's record drawings have been delivered to Owner, and the site is ready for cleaning up, placement of plant plugs, and completing the work for acceptance. Final completion shall mean that all work has been completed in accordance with the Technical Specifications.

- (d) Liquidated Damages. Contractor recognizes that time is of the essence of this agreement, as stated in Paragraph 3(a) above, and that Owner will suffer financial loss if the work is not completed within the dates and times specified in Paragraph 3(c) above, or any extensions thereof agreed to in writing by Owner in accordance with Article 108.11 of the General Specifications. Contractor and Owner 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 within the dates and times specified in Paragraph 3(c) above, or any extensions thereof agreed to in writing by Owner. Accordingly, Contractor and Owner agree that Contractor shall pay Owner, as liquidated damages, but not as a penalty, the amount shown in the schedule of deductions provided in Article 108.12 of the General Specifications for each day that expires after the date and time specified in Paragraph 3(c) above for substantial completion, or any extensions thereof agreed to in writing by Owner, until the work is complete.

Following substantial completion of the work, if Contractor shall neglect, refuse, or fail to complete the remaining work by the date and time specified in Paragraph 3(c) above for final completion, or any extensions thereof agreed to in writing by Owner, Contractor and Owner agree that Contractor shall pay Owner, as liquidated damages, but not as a penalty, the amount shown in the schedule of deductions provided in Article 108.12 of the General Specifications for each day that expires after the date and time specified in Paragraph 3(c) above for final completion, or any extensions thereof agreed to in writing by Owner, until the work is complete and ready for final payment.

4. Contract Price

Owner shall pay Contractor for all work completed in accordance with terms and conditions of the Contract Documents an amount determined pursuant to Paragraphs 4(a), 4(b), and 4(c) below.

- (a) Owner shall pay Contractor for all quantities of work completed in accordance with terms and conditions of the Contract Documents at the unit prices stated on the Contractor's Bid Form, which, as specified in Paragraph 7 below, is attached as a Contract Document. The Contractor's Total Bid of [TOTAL BID], which is stated on the Contractor's Bid Form, represents the initial Contract Price of [CONTRACT PRICE].
- (b) The estimated quantities of work stated on the Basis of Bid Form and the Contract Price set forth above are not guaranteed and are provided herein for the purposes of establishing pay item unit prices and the initial Contract Price. In accordance with the Contract Documents, payment to Contractor will be based upon the actual quantities of work performed by Contractor, the acceptance of such work and the determination of such quantities to be made by the Owner in accordance with the Contract Documents.

5. Payment Procedures

Owner shall pay Contractor for all work completed in accordance with terms and conditions of the Contract Documents in accordance with the procedures described below.

- (a) Progress Payment Requests. During performance of the work, Contractor shall submit to Owner, on approximately a monthly basis, applications for payment prepared in accordance with Article 109.08 of the General Specifications. Applications for payment will be processed by the Owner in accordance with the applicable provisions of the Contract Documents.
- (b) Progress Payments and Retainage. During performance of the work, in response to Contractor's applications for payment, Owner shall make, on approximately a monthly basis, progress payments, as described in Paragraph 5(b)(1) below, to Contractor. All such progress payments will be made based upon the actual quantities of work completed in accordance with terms and conditions of the Contract Documents and upon the Contractor's schedule of values prepared in accordance with Article 108.02 of the General Specifications.
 - (1) Prior to substantial completion of the work, progress payments will be made in an amount equal to the value of 90 percent (90%) of the work completed, less the sum of payments previously made and less such amounts as Owner may withhold in accordance with Article 109.08 of the General Specifications, including, but not limited to, liquidated damages.
 - (2) Upon substantial completion of the work, Owner shall pay Contractor an amount sufficient to increase the sum of the payments made to Contractor to the value of 100 percent (100%) of the work completed, less such amounts as Owner may withhold in accordance with Article 109.08 of the General Specifications, including, but not limited to, liquidated damages, and less 200 percent (200%) of the estimated value of any work to be completed or corrected before final inspection and payment, as shown on the list of such items attached to the certificate of substantial completion.
- (c) Final Payment. Upon final completion of the work, as described in Article 109.09 of the General Specifications, Contractor shall submit to Owner a final application for payment prepared in accordance with Article 109.09 of the General Specifications. In response to Contractor's final application for payment, Owner shall pay Contractor an amount equal to the total value of the work completed for which payment has not yet been made, less such amounts as Owner may withhold in accordance with Article 109.08 of the General Specifications, including, but not limited to, liquidated damages. At the time of final payment, any retainage withheld from payments previously made will also become due and payable to Contractor.

6. Contractor's Representations

In entering into this Agreement, Contractor makes the following representations:

- (a) Contractor has examined and carefully studied the Contract Documents and other related data identified in the Contract Documents.
- (b) Contractor has visited the site and become familiar with and is satisfied as to the general, local, and site conditions that may affect cost, progress, and performance of the work.

- (c) Contractor is familiar with and is satisfied as to all laws and regulations that may affect cost, progress, and performance of the work.
- (d) Contractor has considered the information known to Contractor; information commonly known to contractors doing business in the locality of the site; information and observations obtained from visits to the site; and the Contract Documents, with respect to the effect of such information, observations, and documents on: (1) the cost, progress, and performance of the work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including applying any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Contract Documents; and, (3) Contractor's safety precautions and programs.
- (e) Contractor does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the work at the Contract Price and within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- (f) Contractor has given Owner written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Owner is acceptable to Contractor.
- (g) Contractor is familiar with and is satisfied with the general nature of the work to be performed by Owner or others at the site, as described in the Contract Documents, as a part of the project.
- (h) The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the work.

7. Contract Documents

The Contract Documents consist of the following, which are attached hereto:

- (a) Contract (i.e., this Agreement).
- (b) Contract Security:
 - (1) Performance Bond; and,
 - (2) Payment Bond.
- (c) General Specifications to the Construction & Maintenance Services Agreements.
- (d) Construction Plans for Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements.
- (e) Technical Specifications for Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements.
- (f) Special Provisions for Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements.
- (g) Addendum # ____.
- (h) Contractor's Bid Form.
- (i) Contractor's Basis of Bid Form.
- (j) Contractor's Subcontractor and Supplier Form.

and the following, which may be issued or delivered on or after the effective date of the agreement and, consequently, are not attached hereto:

- (k) Notice to Proceed.

- (l) Work Change Directives.
- (m) Change Orders.

The contract documents may only be amended, modified, or supplemented as provided for in Article 104.02 of the General Specifications.

8. Contractor's Certifications

Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing this contract. For the purposes of this Paragraph 8:

- (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 or in execution of the contract;
- (b) "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;
- (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 or contract prices at artificial, non-competitive levels; and,
- (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.

9. Miscellaneous

The following terms and conditions are hereby made a part of this agreement:

- (a) Terms. Terms used in this agreement have the meanings indicated in the contract documents and shall have such defined meanings wherever used.
- (b) Assignment of Contract. No assignment by a party hereto of any rights under or interests in the contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are 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 documents.
- (c) Successors and Assigns. Owner and Contractor each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the contract documents.
- (d) Severability. Any provision or part of the contract documents held to be void or unenforceable under any laws or regulations shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the contract documents shall 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.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement. Counterparts have been delivered to Owner and Contractor. All of the Contract Documents have been identified by Owner and reviewed and, if applicable, signed, by Owner and Contractor or on their behalf.

This Agreement will be effective on the date on which the agreement is signed by the last of the two parties to sign the Agreement, but not later than [MONTH] [DAY], [YEAR] the earliest of which shall be the effective date of the Agreement.

OWNER:
PORTER CO. STORM WATER MANAGEMENT
BOARD

CONTRACTOR:
[SUCCESSFUL BIDDER]

Date: _____

Date: _____

By: Jim Biggs

By: _____

Title: County Commissioner

Title: _____

By: Barb Regnitz

Title: County Commissioner

By: Laura Blaney

Title: County Commissioner

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

By: Kevin Breitzke

Title: County Surveyor

Address for giving notices:

Porter Co. Dept. of Development & Storm Water
Management

155 Indiana Ave., Ste. 311

Valparaiso, Indiana 46383

Address for giving notices:

PERFORMANCE BOND FORM

KNOW ALL MEN BY THESE PRESENTS, THAT _____, as
(full name and principal business address of Bidder)

Contractor, and that _____, as Surety, a corporation organized and
(full name and principal business address of Surety)

existing under the laws of the state of _____, are held and firmly bound unto the PORTER COUNTY
STORM WATER MANAGEMENT BOARD, 155 Indiana Avenue, Valparaiso, Indiana 46383, as Owner,

in the penal sum of _____ Dollars (\$ _____),
(value of bond in words) (value of bond in figures)

for the payment of which, well and truly to be made, we bind ourselves, our heirs, executors, administrators,
successors, and assigns, jointly and severally by these presents.

WHEREAS, Contractor has entered into an agreement with Owner for the project designated as Shorewood Forest
Subdivision – Ravine Restoration & Storm Sewer Improvements, the effective date of such agreement being
_____, 20____, the terms and conditions of such agreement are, by this reference,
incorporated herein as though fully set forth herein.

NOW, THEREFORE, the condition of the obligation of this bond is such that, if Contractor shall well and truly
perform or otherwise comply with the terms and conditions of the contract documents, then the obligation of this
bond shall be null and void; otherwise it shall remain in full force and effect.

Surety, for value received, hereby stipulates and agrees that its obligation under this bond shall be in no way
impaired or affected by any change to the contract documents, including changes to the contract times, and Surety
does hereby consent to and waive notice of any such change.

Upon default of Contractor, which shall occur upon the failure of Contractor to perform or otherwise comply with the
terms and conditions of the contract documents, Owner shall provide written notice to Contractor and Surety of such
default. Such notice will be given by Owner with reasonable promptness upon default of Contractor and will identify
this bond and specify the corrective measures required. If Contractor, within a period of ten days after receipt by
Contractor of such written notice of default, shall not proceed according to such notice, Owner shall have full power
and authority to forfeit the rights and obligations of Contractor under the agreement described above and, at its sole
discretion: (1) call upon Surety to complete the work; or, (2) take over the work, including all materials and
equipment on the ground as may be suitable or acceptable, and complete it with its own forces, or use other such
methods that, in its opinion, may be required to complete the work in an acceptable manner. Upon termination of the
rights and obligations of Contractor, Owner shall, with reasonable promptness, provide Contractor and Surety a
written notice of termination for default, which will identify this bond and specify whether Surety or Owner is to
complete the work.

When Owner issues a written notice of termination for default and calls upon Surety to complete the work, Surety
shall within 30 days after receipt by Surety of such notice, and at Surety’s expense, take over the work, including all
materials and equipment on the ground as may be suitable or acceptable, and employ by contract or otherwise any
person or entity satisfactory to the Owner to complete the work in a manner consistent with the contract documents.
Such transfer, from Contractor to Surety, of the rights and obligations to complete the work, shall not terminate or
otherwise alter the agreement described above nor shall the employment by Surety of any person or entity to
complete the work relieve Surety of its obligation under this bond nor its obligation to perform or otherwise comply
with the terms and conditions of the contract documents. Payment for work performed subsequent to the transfer,
from Contractor to Surety, of the rights and obligations to complete the work, shall be made by Owner to Surety, to
the limit of the balance of the contract price, which is the total amount payable by Owner to Contractor after all
proper adjustments have been made (i.e., contract price), reduced by all valid and proper payments made to
Contractor in accordance with the contract documents.

When Owner issues a written notice of termination for default and takes over and completes the work, payment shall
be made by Surety to Owner for all costs incurred by Owner in completing the work to the limit of the value of this bond.

After Owner has terminated the rights and obligations of Contractor to complete the work, the responsibilities of Surety to Owner shall not be greater than those of Contractor under the agreement, and the responsibilities of Owner to Surety shall not be greater than those of Owner under the agreement. To the limit of the value of this bond, Surety is obligated for: (1) correction of defective work and completion of the work in a manner consistent with the contract documents; (2) legal, design, inspection, and other costs resulting from Contractor's default and/or resulting from the actions of Surety or Surety's failure to act; and, (3) liquidated damages. Surety shall not be liable to Owner or others for obligations of Contractor that are unrelated to the agreement described above. No right of action shall accrue on this bond to any person or entity other than Owner or its heirs, executors, administrators, or successors.

Notices required hereunder shall be in writing and sent to Contractor and Surety at their respective principal business addresses shown above. Such notices may be sent by personal delivery, commercial courier, or by registered or certified mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the concerned parties.

No suit or legal action shall be commenced under this bond prior to ten days after a written notice of default is received by Contractor and Surety and in no case later than two years after the effective date of agreement described above. Any suit or legal action commenced under this bond shall be taken only in a court of competent jurisdiction located in the state in which the project described above is located.

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 shall be deemed to be included herein as though fully set forth herein. If any provision of this bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this bond that is not in conflict therewith shall continue in full force and effect.

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

SIGNED AND SEALED ON: _____, 20_____, BY:

CONTRACTOR:

Contractor's Name: _____ (SEAL)

By: _____
(Signature)

Printed Name: _____

Title: _____

Attest: _____

SURETY:

Surety's Name: _____ (SEAL)

By: _____ (Attach Power of Attorney)
(Signature)

Printed Name: _____

Title: _____

Attest: _____

PAYMENT BOND FORM

KNOW ALL MEN BY THESE PRESENTS, THAT _____, as
(full name and principal business address of Bidder)

Contractor, and that _____, as Surety, a corporation organized and
(full name and principal business address of Surety)

existing under the laws of the state of _____, are held and firmly bound unto the PORTER COUNTY
STORM WATER MANAGEMENT BOARD, 155 Indiana Avenue, Valparaiso, Indiana 46383, as Owner,

in the penal sum of _____ Dollars (\$ _____),
(value of bond in words) (value of bond in figures)

for the payment of which, well and truly to be made, we bind ourselves, our heirs, executors, administrators,
successors, and assigns, jointly and severally by these presents.

WHEREAS, Contractor has entered into an agreement with Owner for the project designated as Shorewood Forest
Subdivision – Ravine Restoration & Storm Sewer Improvements, the effective date of such agreement being
_____, 20____, the terms and conditions of such agreement are, by this reference,
incorporated herein as though fully set forth herein.

NOW, THEREFORE, the condition of the obligation of this bond is such that, if: (1) Contractor shall promptly make
payment, directly or indirectly, for all sums due to any person or entity who furnished labor, material, or equipment
for use in the performance of the work, whether or not said labor, material, or equipment becomes a component part
of the work; and, (2) Contractor shall indemnify, save harmless, and defend Owner against any and all claims,
demands, liens, and lawsuits alleging non-payment by Contractor by any person or entity who furnished labor,
material, or equipment for use in the performance of the work, then the obligation of this bond shall be null and void;
otherwise it shall remain in full force and effect.

Surety, for value received, hereby stipulates and agrees that its obligation under this bond shall be in no way
impaired or affected by any change to the contract documents, including changes to the contract times, and Surety
does hereby consent to and waive notice of any such change.

Upon default of Contractor, which shall occur upon the failure of Contractor to promptly make payment for all sums
due to any persons or entities who furnished labor, material, or equipment for use in the performance of the work,
such persons or entities who have not received payment for all sums due (i.e., Claimants) shall provide written
notice to Contractor, with a copy to Surety and Owner, that a claim is being made. Such notice shall be given by
Claimant within 90 days after having last furnished labor, material, or equipment for use in the performance of the
work and shall, with substantial accuracy, state the amount of the claim and the name of the party to whom the
labor, material, or equipment were furnished.

If Contractor, within a period of 30 days after receipt of a claim, does not respond to such claim or rejects such claim
in whole or in part, such Claimant shall provide written notice to Surety, with a copy to Owner, that a claim is being
made under this bond. Such notice shall identify this bond and include a copy of the written notice previously
furnished to Contractor.

When a Claimant has satisfied the conditions described above, Surety shall within 45 days after receipt of a claim,
and at Surety's expense, take the following actions: (1) send a response to such Claimant, with a copy to Owner,
stating the amounts that are undisputed and disputed and the basis for challenging any amounts that are disputed;
and, (2) pay or arrange for payment of any undisputed amounts.

Upon request of any person or entity appearing to be a potential beneficiary of this bond, Contractor shall promptly
furnish a copy of this bond or shall permit a copy to be made.

The total amounts payable by Owner to Contractor (i.e., contract price) shall be used to perform or otherwise comply
with the terms and conditions of the contract documents and to satisfy claims, if any, under the Performance Bond.
By Contractor furnishing and Owner accepting this bond, they agree that all funds earned by Contractor for

performing or otherwise complying with the terms and conditions of the contract documents shall be used satisfy obligations of Contractor and Surety under this bond.

Surety’s responsibility shall not exceed the value of this bond. Surety shall not be liable to Owner, Claimants, or others for obligations of Contractor that are unrelated to the agreement described above. Owner shall not be liable for payment of any costs or expenses of any Claimant under this bond, and shall have, under this bond, no obligation to make payments to, give notices on behalf of, or otherwise have obligations to claimants under this bond.

Notices required hereunder shall be in writing and sent to Contractor, Surety, and Owner at their respective principal business addresses shown above. Such notices may be sent by personal delivery, commercial courier, or by registered or certified mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the concerned parties.

No suit or legal action shall be commenced under this bond prior to 45 days after receipt, by Surety, of a written notice that a claim is being made under this bond and in no case later than two years after the effective date of agreement described above. Any suit or legal action commenced under this bond shall be taken only in a court of competent jurisdiction located in the state in which the project described above is located.

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 shall be deemed to be included herein as though fully set forth herein. If any provision of this bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this bond that is not in conflict therewith shall continue in full force and effect.

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

SIGNED AND SEALED ON: _____, 20_____, BY:

CONTRACTOR:

Contractor’s Name: _____ (SEAL)

By: _____
(Signature)

Printed Name: _____

Title: _____

Attest: _____

SURETY:

Surety’s Name: _____ (SEAL)

By: _____ (Attach Power of Attorney)
(Signature)

Printed Name: _____

Title: _____

Attest: _____

**GENERAL SPECIFICATIONS
TO THE
CONSTRUCTION & MAINTENANCE SERVICES AGREEMENTS**

PORTER CO. DEPARTMENT OF DEVELOPMENT & STORM WATER MANAGEMENT
FEBRUARY 1, 2024

The following General Specifications apply to and shall govern the Construction and Maintenance Services Agreements.

**DIVISION 100
GENERAL REQUIREMENTS AND COVENANTS**

**SECTION 101
DEFINITION OF TERMS**

Wherever in these specifications, or in other contract documents, the following terms, or pronouns in place of them, are used, the intent and meaning shall be interpreted as follows.

101.01 Abbreviations. Wherever the following abbreviations are used in these specifications, or in other contract documents, they are to be construed the same as the respective expressions represented.

ANSI	American National Standards Institute
ASA	American Standards Association
ASTM	ASTM International
FSS	Federal Specifications and Standards
GSA	General Services Administration
IDEM	Indiana Department of Environmental Management
INDOT	Indiana Department of Transportation
IDNR	Indiana Department of Natural Resources
ISO	Insurance Services Office
NIST	National Institute of Standards and Technology
NPDES	National Pollutant Discharge Elimination System
OSHA	Occupational Safety and Health Administration
UL	Underwriters Laboratories
USASI	United States of America Standards Institute
USDA	United States Department of Agriculture
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency

101.02 Advertisement. The public announcement, as required by law, inviting bids or requesting quotes for work to be performed.

101.03 Agreement. The written instrument which is evidence of the agreement between the Department and the Contractor covering the work.

101.04 Application for Payment. The form acceptable to the Department which is to be used by the Contractor during the performance of the work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the contract documents.

101.05 Award. The decision of the Department, in the form of a notice of award, to accept the bid or quote of the lowest responsible bidder or respondent for the work, subject to the execution of a contract satisfactory to the Department, receipt of bonds to secure the performance thereof, and compliance with such other conditions as may be specified or otherwise required by law.

101.06 Awarding Authority. The Porter County Storm Water Management Board.

101.07 Bid. The offer of a bidder, on the prescribed form, to perform the work and to furnish the labor and materials at the prices quoted.

101.08 Bid Security. The security furnished with a bid to guarantee the bidder will enter into a contract if the bid is accepted.

101.09 Bidder. Any individual, firm, partnership, or corporation submitting a bid for the work contemplated, acting directly or through a duly authorized representative.

101.10 Calendar Day. Every day shown on the calendar.

101.11 Cataclysmic Event. An occurrence, caused exclusively by any of the irresistible forces of nature that is an unexpected, singular event without continued, persistent existence, or that is irregularly predictable. The event must occur without the involvement of human causative action, and must not be preventable or capable of substantial limitation in its impact by application of human care, skill, or foresight. Cataclysmic events include earthquakes, floods, flash floods of surface water caused by heavy rains and storm water runoff, tornadoes, or other cataclysmic phenomena of nature. A flood, defined as water elevation in excess of the channel capacity of a river, stream, or other body of water, is not a cataclysmic event, unless the flood water elevation exceeds the 100-year flood elevation as defined in the contract.

101.12 Change Order. A document issued by the Engineer, and signed by both the Contractor and the Department, on or after the effective date of the agreement, which authorizes an addition, deletion, or revision in the work that requires an adjustment in the contract price or contract times.

101.13 Claim. A demand or assertion by the Department or the Contractor seeking an adjustment of contract price or contract times, or both, or other relief with respect to the terms of the contract.

101.14 Contract. The written agreement between the Department and the Contractor setting forth the obligations of the parties thereunder, including, but not limited to, the performance of the work, the furnishing of labor and materials, and the basis of payment. The contract includes those items designated as contract documents in the agreement, all of which constitute one instrument.

101.15 Contract Security. The approved form of security furnished by the Contractor and his/her surety as a guaranty that the Contractor will execute the work according to the terms of the contract.

101.16 Contract Documents. Those items designated as such in the agreement. Only printed or hard copies of the items listed in the agreement shall be considered contract documents.

101.17 Contract Price. The monies payable by the Department to the Contractor for completion of the work in accordance with the contract documents, as stated in the agreement, subject to any provisions of the contract documents related to unit price work.

101.18 Contract Times. The number of days or the dates, as stated in the agreement, to achieve milestones, if any, achieve substantial completion, and complete the work so that it is ready for final payment as evidenced by the Engineer's recommendation of final payment.

101.19 Contractor. The individual, firm, partnership, joint venture, or corporation contracting with the Department for performance of prescribed work.

101.20 Day. Calendar day.

101.21 Department. The Porter County Department of Development and Storm Water Management.

101.22 Effective Date of the Agreement. The date indicated in the agreement on which it becomes effective, but if no such date is indicated, it means the date on which the agreement is signed by the last of the two parties to sign the agreement.

101.23 Engineer. The Porter County Engineer or his or her authorized representative.

101.24 Equipment. All machinery and equipment, together with those supplies necessary for upkeep and maintenance of such machinery and equipment, and all tools and apparatus necessary for the proper construction and acceptable completion of the work.

101.25 Extra Work. An item of work not provided for in the contract as awarded but found essential and germane to the satisfactory completion of the contract within its intended scope as determined by the Engineer.

101.26 Field Order. A written order issued on or after the effective date of the agreement by the Engineer, and signed by both the Contractor and the Department, which requires minor changes in the work but which does not involve a change in the contract price or contract times.

- 101.27 Inspector.** An authorized representative of the Engineer assigned to make a detailed inspection of any or all portions of the work.
- 101.28 Instructions to Bidders.** The document describing the Department's rules and procedures for advertising, awarding, and executing contracts for all work on which bids are required. Such instructions will indicate, with reasonable accuracy, the type, location, and quantity of work to be performed.
- 101.29 Invitation for Bids.** The advertisement inviting bids for all work on which bids are required. Such invitation will indicate the time and place of the opening of bids.
- 101.30 Laboratory.** Any testing laboratory which may be designated as the testing laboratory of the Department.
- 101.31 Laws and/or Regulations.** Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction over the project.
- 101.32 Materials.** Any substances specified for use in the construction of the project and its appurtenances.
- 101.33 Notice to Proceed.** A written notice given by the Department to the Contractor fixing the date on which the contract times will commence to run and on which the Contractor shall start to perform the work required under the contract documents.
- 101.34 Owner.** The Porter County Department of Development and Storm Water Management.
- 101.35 Pay Item.** A specifically described unit of work for which a price is provided in the contract.
- 101.36 Plans.** The construction plans, or exact reproductions thereof, that show the location, character, dimensions, and details of the work to be performed. Construction plans include, but are not limited to, those plans, profiles, cross sections, details, working drawings, supplemental drawings, and referenced standards approved by the Department.
- 101.37 Progress Schedule.** A schedule, prepared and maintained by the Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the work within the contract times.
- 101.38 Project.** The total construction, of which the work to be performed under the contract documents may be the whole or a part.
- 101.39 Quote.** The offer of a respondent, on the prescribed form, to perform the work and to furnish the labor and materials at the prices quoted.
- 101.40 Resident Project Representative.** The authorized representative of the Department serving as the Department's liaison with the Contractor, providing the Contractor with information regarding the intent of the contract documents and obtaining additional details and information from the Engineer when required for proper execution of the work.
- 101.41 Samples.** Physical examples of materials, equipment, or workmanship that are representative of some portion of the work and which establish the standards by which such portion of the work will be evaluated.
- 101.42 Schedule of Submittals.** A schedule, prepared and maintained by the Contractor, of the submittals required to support the performance of the work and the time requirements associated with the review and approval or acceptance of such submittals.
- 101.43 Schedule of Values.** A schedule, prepared and maintained by the Contractor, allocating portions of the contract price to various portions of the work, and used as the basis for reviewing the Contractor's applications for payment.
- 101.44 Site.** Lands or areas indicated in the contract documents as being furnished by the Department upon which the work is to be performed, including easements for access thereto, and such other lands furnished by the Department which are designated for the use of the Contractor.

101.45 Special Provisions. Additions and revisions to the general and supplemental specifications covering conditions peculiar to an individual contract.

101.46 Specifications. The body of directions, provisions, and requirements contained herein, or in any supplement adopted by the Department, together with written agreements and all documents of any description made or to be made pertaining to the method or manner of performing and paying for the work, the quantities, and the quality of materials to be furnished under the contract.

101.47 Structure. Unless otherwise defined in the specifications, structures shall include all objects constructed, in whole or in part, of materials other than earth, and required by the contract to be built or removed.

101.48 Subcontractor. An individual, firm, partnership, or corporation who, with the written consent of the Department, assumes obligation for performing specified work.

101.49 Substantial Completion. The time at which the work has progressed to the point where, in the opinion of the Engineer, the work is sufficiently complete, in accordance with the contract documents, such that the work can be utilized for the purposes for which it is intended.

101.50 Supplier. A manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with the Contractor or with any subcontractor to furnish materials or equipment to be incorporated into the work by the Contractor or any subcontractor.

101.51 Surety. The corporation, partnership, or individual, other than the Contractor, executing the contract security.

101.52 Utility. The privately, publicly, municipally, or cooperatively owned line, facility, or system for producing, transmitting, or distributing communications, cable television, power, electricity, light, heat, gas, oil, crude products, water, steam, or wastewater. Utility shall also mean the utility company, inclusive of any wholly owned or controlled subsidiary.

101.53 Work. Work shall mean the furnishing of all labor, materials, tools, equipment, and other incidentals necessary or convenient to the successful completion of the project and the carrying out of all duties and obligations imposed by the contract. Work may also be used in context to described, in whole or in part, the completed facilities to be constructed, altered, or removed, as detailed in the contract. The Department will have the exclusive authority to determine the intent and meaning of the usage of this term wherever it appears in the contract.

101.54 Work Change Directive. A written statement issued by the Engineer, and signed by both the Contractor and the Department, on or after the effective date of the agreement ordering an addition, deletion, or revision in the work, or responding to differing or unforeseen subsurface or physical conditions or to emergencies. A work change directive does not change the contract price or contract times, but is evidence that the parties expect that the change ordered by the work change directive will be incorporated in a subsequently issued change order following negotiations by the parties as to its effect, if any, on the contract price or contract times.

**SECTION 102
ADVERTISEMENT, AWARD, AND EXECUTION OF THE CONTRACT**

102.01 Procedures for Advertisement, Award, and Execution of the Contract

The procedures for the advertisement, award, and execution of the contract shall be in accordance with the rules of the Department. The instructions to bidders or request for quotes shall have been prepared in accordance with such rules. The Contractor shall comply with all such rules and procedures described in the instructions to bidders or request for quotes.

**SECTION 103
[RESERVED]**

**SECTION 104
SCOPE OF WORK**

104.01 Intent of the Contract

The intent of the contract documents is to prescribe a complete outline of the work which the Contractor is to complete but is not so detailed as to identify minor additional, extra, and incidental items as may be necessary to complete the work in full compliance with the plans and specifications to the intended finished lines, grades, elevations, and dimensions. All construction required to complete the work in full compliance with the contract documents shall be performed by the Contractor whether or not specifically identified in the plans and specifications. The Contractor shall perform all earthwork, construct all structures, and complete such additional, extra, and incidental construction as may be necessary to complete the work to the finished lines, grades, elevations, and dimensions in an acceptable manner. The Contractor shall furnish all required materials, equipment, tools, labor, and incidentals, unless otherwise provided for in the contract, and shall include the cost of these items in the unit prices bid for the work. The quantities appearing in the invitation to bid or request for quotes are estimates prepared for the purposes of comparison of bids or quotes, establishment of pay item prices, and determination of an initial contract price. Payment to the Contractor will be made for the actual quantities of work performed, the acceptance of such work and the determination of such quantities to be made by the Department in accordance with the contract documents, and the scheduled quantities may be increased, decreased, or omitted and the contract price adjusted as provided herein.

Under no circumstances shall the Contractor exceed any established pay item quantity without notification to the Department and receipt of written authorization as provided herein.

104.02 Amending and Supplementing the Contract

The Department reserves the right to amend the contract and to modify the terms and conditions thereof prior to and during the performance of the work. All modifications that significantly change the character of the work and require a change in the contract price or contract times will be authorized by a work change directive and a change order issued by the Engineer and authorized by the Department. All adjustments to the contract price will be made according to the provisions of Article 104.03 and all adjustments to the contract times will be made according to the provisions of Article 108.11. Such modifications shall not invalidate the contract nor release the surety, and the Contractor shall promptly perform the work in accordance with the contract, as amended.

The Department also reserves the right to supplement the contract to provide for clarifications and interpretation thereof. Such supplemental information shall not significantly change the character of the work or require a change in the contract price or contract times. Supplemental information will be provided to the Contractor through field orders issued by the Engineer, written interpretations or clarifications provided by the Engineer, the Engineer's issuance of shop, working, or layout drawings, the Engineer's approval of shop, working, or layout drawings according to the provisions of Article 105.04, or the Engineer's approval of samples and test results according to the provisions of Article 106.04. Such supplemental information shall not invalidate the contract nor release the surety, and the Contractor shall promptly perform the work in accordance with the contract as supplemented.

104.03 Alterations, Cancellations, Deductions, Extensions, and Extra Work

The Department reserves the right to order, in writing, at any time prior to or during the performance of the work, alterations to the work, changes in the quantities of work to be performed, including cancellations, deductions,

and extensions to the quantities of such work, and extra work to satisfactorily complete the project. Such alterations, changes, and inclusions shall not invalidate the contract nor release the surety, and the Contractor shall agree to perform the work as altered.

All alterations, cancellations, deductions, extensions, and extra work shall be authorized in writing by the Department. All such alterations, cancellations, deductions, extensions, and extra work will be ordered by a work change directive and a change order issued by the Engineer and authorized by the Department. Such work change directives and change orders shall establish the items of work involved and any adjustments to be made to the contract.

If the alterations, cancellations, deductions, extensions, or extra work significantly change the character of the work to be completed under the contract, an adjustment will be made to the contract. The basis for the adjustment shall be agreed upon by both the Contractor and the Department. If a basis cannot be agreed upon, then an adjustment will be made either for or against the Contractor in such amount as the Engineer may determine to be fair and equitable.

The term "significant change" shall apply only when the character of the work as altered differs materially in kind or nature from that involved or included in the original contract or when a major work item, defined as a work item whose original contract value exceeds ten percent (10%) of the total original contract value, is increased in excess of 125 percent (125%) or decreased below 75 percent (75%) of its original contract value.

If the alterations, cancellations, deductions, extensions, or extra work do not significantly change the character of the work to be performed under the contract, an adjustment will be made to the contract. The basis for the adjustment shall be as provided for below:

- (a) All increases in work items that appear in the original contract with unit prices will, except as provided under paragraph (d) below, be paid for at the unit prices specified in the original contract. Such additions will be added to the contract value. All decreases in work items that appear in the original contract with unit prices will be deducted from the contract value at the unit prices specified in the original contract. No allowance will be made for loss of anticipated profits resulting from an increase or decrease in the quantities of work to be performed.
- (b) Major work items, as defined above, which are increased to not more than 125 percent (125%) or decreased to not less than 75 percent (75%) of their original contract value will be paid for as specified in paragraph (a) above. Any adjustments made to the unit prices specified in the original contract for major work items which are increased to more than 125 percent (125%) of their original contract value (i.e., significant change) shall only apply to that portion of the major work item performed in excess of 125 percent (125%) of the original contract value. Any adjustments made to the unit prices specified in the original contract for major work items which are decreased to less than 75 percent (75%) of their original contract value (i.e., significant change) shall apply to the actual amount of the major work item performed.
- (c) Extra work items which are not included in the original contract and are not included in other items of the work will be paid for according to Article 109.05.
- (d) Work items that appear in the original contract with unit prices which, for any one or more of the following reasons, experience a material increase or decrease in the cost to perform such work, provided that the reasons for such material increase or decrease in the cost to perform such work are not included in the other items of the work, will be paid for according to Article 109.05. Such reasons include:
 - (1) Work involving a substantial change of location.
 - (2) Work which differs in design.
 - (3) Work requiring a change in the type of construction.
- (e) In cases where the Department cancels or alters any portion of the work, work items which are partially completed will be paid for as specified in Article 109.07.

Claims for alterations to the work, changes that result in an increase or decrease in the quantities of work to be performed, and extra work that have not been authorized in writing by the Department will be rejected.

104.04 Use of Site

Land and access thereto required for construction, temporary construction facilities, and the storage of materials and equipment to be incorporated into the work are located on the site, and the Contractor shall confine such construction, temporary construction facilities, and the storage of materials and equipment to such site. If the Contractor should wish to use another area for the erection of temporary construction facilities, the storage of materials and equipment, or other purposes, he or she shall obtain written approval from the owner of such property and present such written approval to the Department prior to using such area. The Contractor shall not unreasonably encumber the site or other areas with construction facilities, materials, or equipment. In accordance with Article 107.15, the Contractor shall take all necessary precautions for the protection of the site and other areas during the prosecution of the work and shall be responsible for any damage to the site or other areas resulting from the prosecution of the work.

104.05 Differing Site Conditions

At the time of submitting a bid or quote to the Department, Contractor made a final commitment to the Department with respect to contract price and contract times, and by becoming bound to such by executing an agreement with the Department, the Contractor represented that it did not consider that further examinations, investigations, explorations, tests, studies, or data were necessary to determine his or her ability to perform the work at the contract price and within the contract times and in accordance with the other terms and conditions of the contract. However, during the progress of the work, if latent subsurface or physical conditions differing materially from those indicated in the contract documents or of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the contract documents, are encountered at the site, the Contractor shall, promptly after becoming aware of such conditions and before further disturbing such conditions or performing any work in connection therewith, notify the Department in writing about such conditions. Such latent subsurface or physical conditions, may include, but not be limited to those listed below.

- (1) An underground obstruction which would prevent the installation of any part or detail of the work according to the lines, grades, elevations, and dimensions shown on the plans.
- (2) Unsuitable soil or subsurface conditions which would cause shifting of any part or detail of the work in any direction.
- (3) Any conditions which would affect the stability of any part or detail of the work or the ability of any part or detail of the work to support the loading to be placed upon it.

Upon written notification to the Department, the Engineer will investigate the conditions, and if he/she determines the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the contract, an adjustment, excluding loss of anticipated profits, will be made and the contract modified in writing accordingly. The Engineer will notify the Contractor and the Department of his/her determination whether or not an adjustment of the contract is warranted.

No contract adjustment which results in a benefit to the Contractor will be allowed unless the Contractor has provided the required written notice. No contract adjustment will be allowed for any effects caused on unchanged work.

The Contractor shall not be entitled to any contract adjustment if the Contractor knew of the existence of such latent subsurface or physical conditions at the time the Contractor made a final commitment to the Department with respect to contract price and contract times and became bound to such by executing an agreement with the Department or the existence of such conditions could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study conducted by or for the Contractor prior to the Contractor making such final commitment.

Any adjustment in contract price made because of a change or changes resulting from one or more the conditions described above will be made in accordance with Article 104.03. Any adjustment in contract times made because of such change or changes will be made in accordance with Article 108.11.

104.06 Rights In and Use of Materials Found on the Site

The Contractor, with the approval of the Department, may use on the work such stone, gravel, sand, or other materials determined suitable by the Department as may be found within the limits of the proposed construction, and will be paid both for the excavation of such materials at the corresponding contract unit price and for the pay item for which the excavated material is used. The Contractor shall replace, at no additional cost to the Department, with other acceptable material, all of that portion of the excavated material so removed and used which was needed for use in embankments, backfills, structures, or otherwise. No charge for the materials so used will be made against the Contractor. The Contractor shall not excavate or remove any material from within the site which is not within the limits of the proposed construction, as indicated by the slope and grade lines, without written authorization from the Department.

104.07 Site Clean Up

During the prosecution of the work, the Contractor shall maintain the site in a neat and presentable condition, free from debris and rubbish. The Contractor shall clean the site of all debris and rubbish at the end of each day's operations, and at other times as directed by the Department. The Contractor shall furnish the type and size of receptacles and equipment and conduct the work necessary to maintain the site and adjacent premises free from such debris and rubbish.

The cost incurred by the Contractor in complying with this requirement shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

104.08 Final Site Clean Up

Before final acceptance, all ground occupied or disturbed by the Contractor in connection with the work shall be cleaned of all rubbish, excess materials, temporary structures, and equipment, and all parts of the work shall be left in a neat and presentable condition.

The cost incurred by the Contractor in complying with this requirement shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

SECTION 105 CONTROL OF WORK

105.01 Authority of Engineer

All work of the contract shall be completed to the satisfaction of the Engineer. The Engineer will have authority to reject all work which the Engineer believes to be defective, or that the Engineer believes will not produce a completed project that conforms to the contract documents or will prejudice the integrity of the design concept of the completed project as a functioning whole. The Engineer will also have authority to require special inspection of the work by an inspector to evaluate its acceptability.

The decision of the Engineer shall be final on all questions which may arise regarding, but not limited to, the quality and acceptability of materials and work; the manner of performance; acceptable rates of progress on the work; the interpretation of the contract plans and specifications; the fulfillment of the contract; the measurement of quantities and payment under the contract; and the determination of the existence of changed or differing site conditions.

The Department will notify the Contractor in writing if the work is to be suspended wholly or in part due to the failure of the Contractor to carry out provisions of the contract or failure to carry out orders of the Engineer. The work may also be suspended at the Contractor's risk for such periods as the Engineer may deem necessary due to unsuitable weather; for conditions considered unsuitable for the prosecution of the work; or, for any other condition or reason deemed to be in the public interest.

The contract does not require the Engineer to provide the Contractor with direction or advice on how to do the work. If the Engineer approves or recommends any method or manner for doing the work, the approval or recommendation shall not guarantee that following the method or manner will result in compliance with the contract, relieve the Contractor of the risks and obligations of the contract, or create liability for the Engineer.

In case of failure on the part of the Contractor to execute work ordered by the Engineer, the Department may, at the expiration of a period of 48 hours after giving notice in writing to the Contractor, proceed to execute such work

as may be deemed necessary, and the cost thereof will be deducted from compensation due or which may become due the Contractor under the contract.

105.02 Duties of Engineer

The authority of the Engineer during performance of the work is set forth in Article 105.01. His or her duties and responsibilities during performance of the work are set forth below.

The Engineer will make visits to the site as he or she deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made in and the quality of the various aspects of the work. Based on information obtained during such visits and observations, the Engineer will determine, in general, if the work is proceeding in accordance with the contract documents. The Engineer will not be required to make exhaustive or continuous inspections of the site to check the quality or quantity of the work or to evaluate its acceptability. The Engineer will keep the Department informed of the progress of the work and will endeavor to guard the Department against defective work.

If it is determined to be in the best interest of the Department, the Department may furnish a Resident Project Representative to assist the Engineer in providing more extensive observation of the work. The duties of any such Resident Project Representative are described in Article 105.14, and the limitations on his or her authority are also provided therein.

In accordance with Article 105.01, all work of the contract shall be completed to the satisfaction of the Engineer. The Engineer will have authority to reject work which the Engineer believes to be defective, or that the Engineer believes will not produce a completed project that conforms to the contract documents or will prejudice the integrity of the completed project as a functioning whole. The Engineer will also have authority to require special inspection of the work by an inspector to evaluate its acceptability.

During the performance of the work, the Engineer shall have the duties and authority described above, in Article 105.01, and elsewhere in the contract documents. In performing such duties, the Engineer shall not assume any responsibilities of the Contractor or any subcontractors, suppliers, individuals, or entities performing work or labor for or rendering services or supplies to the Contractor. The Engineer shall not have control or authority over, nor be responsible for, the Contractor's means, methods, techniques, sequences, or procedures of construction, or for the Contractor's safety precautions and programs incident thereto, or for any failure of the Contractor to comply with laws and regulations applicable to the performance of the work. The Engineer will not be responsible for the Contractor's failure to perform the work in accordance with the contract documents.

105.03 Conformity with Contract

All work performed and all materials furnished shall be in conformity with the contract and the lines, grades, elevations, dimensions, and material and construction requirements shown on the plans or indicated in the contract documents. All work or material which does not conform to the requirements of the contract will be considered unacceptable. Prompt notice of all unacceptable work of which the Engineer is aware will be given to the Contractor by the Engineer.

Unacceptable work, whether the result of poor workmanship, use of defective or unacceptable materials, damage through carelessness, or other cause, and unacceptable materials shall be removed and replaced or otherwise corrected in an acceptable manner at no additional cost to the Department.

The Department reserves the right to accept work produced by the Contractor if the Engineer finds the noncompliant materials, the finished product in which the noncompliant materials are used, or the nonconforming work are in close conformity with the contract. In this event, the Engineer will document the basis of acceptance by contract modification which may provide for an appropriate adjustment in the contract value for such work or materials as the Engineer deems necessary to conform to the determination. The determination of the Department will be based on the best engineering judgment of the Engineer and shall be final and binding.

Work done contrary to instructions given by the Engineer, work done beyond the limits shown on the plans, or any extra work performed without the written authorization of the Department will be considered as unacceptable and will not be paid for under the contract. Work so done may be ordered removed or replaced at no additional cost to the Department.

For unacceptable work that impacts the environment, a deduction will be applied to monies due or that might become due the Contractor. These deficiency deductions will be applied as follows.

- (a) Soil Erosion and Sediment Control (SE/SC) Deficiency Deduction. When the Engineer is notified of or determines that a soil erosion and/or sediment control deficiency(s) exists, or the Contractor's activities represent a violation of the Department's soil erosion and/or sediment control permits, the Engineer will notify and direct the Contractor to correct the deficiency within a specified time. The specified time, which begins upon notification to the Contractor, will be from 1/2 hour to 1 week based on the urgency of the situation and the nature of the work effort required. The Engineer will be the sole judge of the adequacy of the specified time.

A deficiency may be any lack of maintenance, repair, or implementation of any of the soil erosion and/or sediment control practices included in the contract, or any failure to comply with the conditions of the Department's soil erosion and/or sediment control permits. A deficiency may also be applied to situations where corrective action is not an option, such as the failure to participate in an inspection of the project, failure to install required soil erosion and/or sediment control practices prior to initiating earth moving operations, disregard of concrete washout requirements, or other disregard of the Department's soil erosion and/or sediment control permits.

If the Contractor fails to correct a deficiency within the specified time, a daily monetary deduction will be imposed for each calendar day or portion thereof until the deficiency is corrected to the satisfaction of the Engineer. The count of calendar day(s) will begin with notification to the Contractor and end with the Engineer's acceptance of the correction. The base value of the daily monetary deduction is \$1,000.00. The value of the deficiency deduction assessed will be determined by multiplying the base value by a Gravity Adjustment Factor provided in Table A; except for failure to participate in a required inspection of the project prior to initiating earthmoving operations, which will be based on the total acreage of planned disturbance at the following multipliers: <5 Acres: 1; 5-10 Acres: 2; >10-25 Acres: 3; >25 Acres: 5. For those deficiencies where corrective action was not an option, the monetary deduction will be immediate and will be valued at one calendar day multiplied by a Gravity Adjustment Factor.

Types of Violations	Soil Disturbed and Not Permanently Stabilized at Time of Violation			
	< 5 Acres	5 - 10 Acres	> 10 - 25 Acres	> 25 Acres
Failure to Install, Repair, or Maintain BMP	0.1 - 0.5	0.2 - 1.0	0.5 - 2.5	1.0 - 5
Careless Destruction of BMP	0.2 - 1.0	0.5 - 2.5	1.0 - 5	1.0 - 5
Intrusion into Protected Resource	1.0 - 5	1.0 - 5	2.0 - 10	2.0 - 10
Failure to properly manage Chemicals, Concrete Washouts or Residuals, Litter or other Wastes	0.2 - 1.0	0.2 - 1.0	0.5 - 2.5	1.0 - 5
Improper Vehicle and Equipment Maintenance, Fueling, or Cleaning	0.1 - 0.5	0.2 - 1.0	0.2 - 1.0	0.5 - 2.5
Failure to Provide or Update Written or Graphic Plans Required by SWPPP	0.2 - 1.0	0.5 - 2.5	1.0 - 5	1.0 - 5
Failure to Comply with Other Provisions of Department's SE/SC Permits	0.1 - 0.5	0.2 - 1.0	0.2 - 1.0	0.5 - 2.5

The statement elsewhere in the contract of remedies for the use of unacceptable materials or for unacceptable work shall not be exclusive of the remedies provided in this Article unless expressly provided therein.

Upon failure of the Contractor to comply with any order of the Engineer made under the provisions of this Article, the Engineer will have authority to cause the unacceptable work, or deficiency(s), to be corrected,

removed or replaced, and to deduct the cost from any monies due or to become due the Contractor. This corrective action will in no way relieve the Contractor of their contractual requirements or responsibilities.

105.04 Plans and Working Drawings

Construction plans that show the location, character, dimensions, and details of the work to be performed and prescribe a complete outline of the work which the Contractor is to complete will be furnished by the Department. In accordance with Article 104.02, the Department reserves the right to provide supplemental information prior to and during the performance of the work to further clarify, detail, and illustrate the work. Consequently, the Engineer may furnish additional shop, working, or layout drawings or written interpretations or explanations to the Contractor. Such supplemental information shall not invalidate the contract nor release the surety, and the Contractor shall promptly perform the work in accordance with the contract as supplemented.

The Contractor shall submit to the Engineer for approval such additional shop, working, or layout drawings pertaining to the construction of the work as may be required by the contract documents. Approval of such shop, working, or layout drawings by the Engineer is required before proceeding with the work represented by such drawings. Prior to the approval of such additional shop, working, or layout drawings, any work performed or materials ordered to facilitate the completion of the work represented within such drawings shall be at the sole risk of the Contractor.

Such additional shop, working, or layout drawings shall be provided to the Engineer in a timely manner in order to allow for review by the Engineer. The Engineer may require up to 14 days, after receipt of the submittal, for review. Such review may involve rejection, revision, or resubmittal when the submittal does not meet the contract requirements or does not contain sufficient detail, in which case, up to an additional 14 days may be required for each subsequent review. Approval, by the Engineer, of any additional shop, working, or layout drawings submitted by the Contractor shall not confer upon the Engineer any responsibility for the accuracy of the drawings. The Contractor shall bear all risk and all costs for any delays in the performance of the work associated with the preparation, review, and approval of such additional shop, working, or layout drawings.

105.05 Coordination of the Contract Documents

The documents included in the contract are intended to be complementary and to describe a complete work. Before undertaking each part or detail of the work, the Contractor shall carefully study and compare the contract documents, checking and verifying pertinent figures therein, and shall carefully review all applicable field measurements. The Contractor shall promptly report in writing to the Department any conflict, error, ambiguity, or discrepancy which the Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from the Engineer before proceeding with any work affected thereby.

If, during the performance of the work, the 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) any standard, specification, manual, or code; or, (c) any instruction of any supplier, then the Contractor shall promptly report it in writing to the Department. The Contractor shall not proceed with the work affected thereby, except in an emergency, in accordance with Article 107.31, until the apparent conflict, error, ambiguity, or discrepancy has been resolved by the Engineer.

Upon written notification, the Engineer will investigate such conflict, error, ambiguity, or discrepancy. If the Engineer determines a conflict, error, ambiguity, or discrepancy exists in or between the contract documents, an amendment or supplement to the contract documents will be issued by the Department in accordance with Article 104.02. The following hierarchy will be applied by Engineer in resolving any conflict, error, ambiguity, or discrepancy in or between the contract documents.

Hierarchy of the Contract Documents		
Special Provisions	Hold over:	Technical Specifications, Construction Plans, General Specifications
Technical Specifications	Hold over:	Construction Plans, General Specifications
Construction Plans	Hold over:	General Specifications

Except as may be otherwise specifically stated in the contract documents, the provisions of the contract documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the contract documents and the provisions of any standard, specification, manual, or code, or the instruction of any

supplier, whether or not specifically incorporated by reference in the contract documents, or the provisions of any laws or regulations applicable to the performance of the work, unless such an interpretation would result in violation of such law or regulation.

105.06 Reference Standards

Reference, within the contract documents, to standards, specifications, manuals, or codes of any organization, technical society, or association, or to laws or regulations, whether such reference be specific or be implied, shall mean the standard, specification, manual, code, or laws or regulations in effect at the time of opening of bids or quotes, except as may be otherwise specifically stated in the contract documents. No provision of any such standard, specification, manual, or code, or any instruction of a supplier, shall be effective to change the duties or responsibilities of the Department, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the contract documents. No such provision or instruction shall be effective to assign to the Department, Engineer, or any of their officers, directors, members, partners, employees, agents, or consultants, any duty or authority to supervise or direct the performance of the work or any duty or authority to undertake the Contractor's responsibilities with regards to the performance of the work.

105.07 Cooperation by Contractor

The Contractor will be supplied with a minimum of two sets of approved construction plans and contract documents, one set of which the Contractor shall keep available on the work at all times. In receiving copies of the contract documents from the Department, the Contractor shall not have or acquire any title to or ownership rights in any of the plans, specifications, or other contract documents, or copies thereof, prepared by or bearing the seal of the Department or its consultants, including electronic media versions, or reuse any such plans, specifications, or other contract documents, or copies thereof, on extensions of the project or any other project, without the written consent of the Department and without specific written approval of such adaptation by the Engineer. The prohibitions of this Article shall survive final payment or termination of the contract. Nothing herein shall preclude the Contractor from retaining copies of the contract documents for record purposes.

The Contractor shall give the work the constant attention necessary to facilitate the progress thereof, and shall cooperate with the Department, the Engineer, and other contractors in every way possible. The Contractor shall supervise, inspect, and direct the work competently and efficiently, applying such skills and expertise as may be necessary to perform the work in accordance with the contract documents and shall have competent, suitably qualified personnel on the work at all times. The Contractor shall at all times maintain good discipline and order at the site.

The Contractor shall have on the work at all times, as the Contractor's agent, a competent English-speaking superintendent, capable of reading and thoroughly understanding the plans and specifications and thoroughly experienced in the type of work being performed, who shall have the authority to receive instructions from the Engineer. The superintendent shall have full authority to execute orders or directions of the Engineer without delay, and to promptly supply such materials, equipment, tools, labor, and incidentals as may be required to perform the work in accordance with the contract documents. Such superintendent shall be furnished irrespective of the amount of work subcontracted. Such superintendent shall not be replaced without written notice to the Department.

105.08 Cooperation with Utilities

The Contractor shall be aware of the location of all utilities on or adjacent to the project site prior to the start of work. Within the State of Indiana, a statewide one call notice system has been established for notifying utility companies about locating their facilities. The system is known as Indiana 811. All utility companies and municipalities that have buried utility facilities in the State of Indiana are part of this system. The Contractor shall request all utility owners to locate their facilities by contacting Indiana 811 at (800) 382-5544 or 811 at least 48 hours prior to the start of the work. The Contractor shall be responsible for maintaining all markers or excavations provided by the utility owners.

The Contractor shall take all necessary precautions for the protection of utility facilities located on or adjacent to the site. The Contractor shall be responsible for any damage or destruction of utility facilities resulting from neglect, misconduct, or omission in the Contractor's manner or method of execution or nonexecution of the work, or caused by defective work or the use of unsatisfactory materials. Should any damage or destruction of a utility facility occur during performance of the work, the Contractor shall immediately notify the utility owner and the Department. Arrangements will be made to restore such facility to a condition equal to that existing before any such damage or destruction was done. The cost of such restoration shall be the sole responsibility of the Contractor.

- (a) Known Utilities. Prior to construction, the Department will notify all known utility owners regarding the proposed work. Based on information obtained from the various utility owners, all known existing utilities will be indicated on the plans. As it is based on information obtained from the various utility owners, the accuracy of the plans with regards to the various known existing utilities is not guaranteed by the Department.

Generally, arrangements for adjusting known utilities will be made by the Department prior to project construction; however, utilities will not necessarily be adjusted in advance of project construction and, in many cases, utilities will not be removed from the project limits. Utilities to be adjusted during project construction shall be adjusted by the utility owner or the utility owner's representative, except as otherwise provided for in the contract documents. The Contractor shall coordinate with any planned or required utility adjustment that is scheduled to occur during project construction. When the Contractor discovers a utility has not been adjusted by the utility owner or the utility owner's representative in accordance with in the contract documents, the Contractor shall promptly notify the Department.

The Contractor shall take all necessary precautions to prevent disturbance of or damage to all existing utilities. Prior to the start of work, the Contractor shall request all known utility owners to locate their facilities by contacting Indiana 811 at (800) 382-5544 or 811 at least 48 hours prior to the start of the work. The Contractor shall be responsible for maintaining all markers or excavations provided by the utility owners. This field location procedure may be waived if the utility owner has stated in writing to the Department that it is satisfied the construction plans are sufficiently accurate. If the utility owner does not submit such statement to the Department, and they do not field locate their facilities in both horizontal and vertical alignment, the Engineer will authorize Contractor in writing to proceed to locate the facilities in the most economical and reasonable manner, subject to the approval of the Department, and be paid according to Article 109.05.

When the Contractor discovers a utility is not shown on the construction plans and conflicts with the proposed work, the Contractor shall not interfere with said utility, shall take proper precautions to prevent damage or interruption of the utility, and shall notify the Department of the nature and location of said utility.

The Contractor shall be responsible for any damage or destruction of utility facilities resulting from neglect, misconduct, or omission in the Contractor's manner or method of execution or nonexecution of the work, or caused by defective work or the use of unsatisfactory materials. Whenever any damage or destruction of a utility facility occurs as a result of work performed by the Contractor, the Contractor shall immediately notify the utility owner and the Department. Arrangements will be made to restore such facility to a condition equal to that existing before any such damage or destruction was done. The cost of such restoration shall be the sole responsibility of the Contractor.

No additional compensation will be allowed for any delays, inconveniences, or damages sustained by the Contractor due to the presence of or any claimed interference from any known utility facilities or any adjustment of them.

- (b) Unknown Utilities. Except as provided hereinafter, the discovery of an unknown utility will be evaluated according to Article 104.05.
- (1) Definition. An unknown utility is defined as an active or inactive underground utility, which is neither (a) shown in any way in any location on the contract documents; nor, (b) identified in writing by the Department to the Contractor prior to the letting. Service connections shall not be considered to be unknown utilities.
 - (2) Compensation. Compensation will not be allowed for delays, inconveniences, or damages sustained by the Contractor from unknown utilities not meeting the above definition or if the discovery of an unknown utility does not cause a shutdown of the work applicable to the utility but only a change in the rate of progress. The provisions of Article 104.05 notwithstanding, compensation for unknown utility delays determined to be a changed condition will be paid according to the provisions of this Article governing minor and major delays.

- (3) Minor and Major Delays. Minor and major delays are defined as follows.
- a. Minor Delay. When the Contractor's operation is stopped by the unknown utility for more than two hours, but not to exceed three weeks.
 - b. Major Delay. When the Contractor's operation is stopped by the unknown utility for more than three weeks.
- (4) Payment. Payment for minor and major delays will be made as follows.
- a. Minor Delay. Labor idled which cannot be used on other work will be paid for according to Article 109.05(b)(1) and (2) for the time between start of the delay and the minimum remaining hours in the work shift required by the prevailing practice in the area.

Equipment idled which cannot be used on other work, and which is authorized to standby on the project site by the Engineer, will be paid for according to Article 109.05(b)(4).
 - b. Major Delay. Labor will be the same as for a minor delay.

Equipment will be the same as for a minor delay, except Contractor-owned equipment will be limited to three weeks plus the cost of move-out to either the Contractor's yard or another job, whichever is less. Rental equipment may be paid for longer than three weeks provided the Contractor presents adequate support to the Department (including lease agreement) to show retaining equipment on the job is the most economical course to follow and in the public interest.

If the delay is clearly shown to have caused work, which would have otherwise been completed, to be done after material of labor costs have increased, such increases may be paid. Payment for materials will be limited to increased cost substantiated by documentation furnished by the Contractor. Payment for increased labor rates will include those items in Article 109.05(b)(1) and (2), except the 35 percent and ten percent additives will not be permitted.

Project overhead (not including interest) will be allowed when all progress on the contract has been delayed, and will be calculated as fifteen percent of the delay claim.
- (5) Other Obligations of Contractor. Upon payment of a claim under this provision, the Contractor shall assign subrogation rights to the Department for the Department's efforts of recovery from any other party for monies paid by the Department as a result of any claim under this provision. The Contractor shall fully cooperate with the Department in its efforts to recover from another party any money paid to the Contractor for delay damages under this provision.

105.09 Cooperation Between Contractors

The Department reserves the right at any time to contract for and perform other or additional work on or near the work covered by the contract. Each contractor shall conduct his/her work so as not to interfere with or hinder the progress or completion of the work being performed by other contractors. In case of dispute, the Engineer shall be the referee and the Engineer's decision shall be final and binding on all.

Each contractor involved shall assume all liability, financial or otherwise, in connection with his/her contract, and shall protect and save harmless the Department from any and all damages or claims that may arise because of inconvenience, delay, or loss experienced by the Contractor because of the presence and operation of other contractors working within the limits of the same improvement. Each contractor shall assume all responsibility for all work not completed or accepted because of the presence and operations of the other contractors.

The Contractor shall arrange the work and shall place and dispose of the materials being used so as not to interfere with the operations of the other contractors within the limits of the same project. The Contractor shall join his/her work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others.

105.10 Survey Control Points

Survey control points will be set by the Department, unless specified otherwise in the contract, to establish the horizontal and vertical control required for construction of the various contract items of work. The Department will be responsible for the accuracy of the control points. The Contractor shall assume full responsibility for all dimensions and measurements taken or derived by the Contractor from control points set by the Department.

The Contractor shall preserve and protect all control points set by the Department. If the Contractor removes, disturbs, or otherwise displaces any control point, without the prior approval of the Department, the Department may deduct the direct cost incurred by the Department in re-establishing the control point from compensation due the Contractor.

105.11 Construction Layout and Survey

The Contractor shall coordinate with the Engineer to review each part or detail of the work prior to the start of such work and shall be responsible for laying out each part or detail of the work as and when necessary to ensure that such work will be installed in accordance with the lines, grades, elevations, and dimensions shown in the construction plans. The Contractor shall also be responsible for surveying the work as it is completed to verify consistency with the lines, grades, elevations, and dimensions shown in the construction plans. Survey control points will be set and, using materials furnished by the Contractor, marked by the Department prior to the start of the work in accordance with Article 105.10.

The Contractor shall use the following materials to lay out the work.

- (1) Paint. The Contractor shall use white, pink, or purple paint in aerosol cans to lay out the work. At no time shall any of the colors used by JULIE to mark utilities, and described in Article 107.24, be used to lay out the work.
- (2) Lath. The Contractor shall use lath to lay out the work. The lath shall be as follows.
 - (a) Each lath shall be 1-1/8" x 1/2" x 48".
 - (b) Each lath shall be kiln dried Douglas fir, oak, or maple and surfaced on the two larger sides and without splits, pitch pockets, wane, knots, or decayed wood.
 - (c) The tapered end of each lath may be saw cut or pencil point tapered.

All construction layout and survey work shall be completed to the satisfaction of the Engineer and the decision of the Engineer shall be final on all questions which may arise regarding thereto. The Contractor shall provide competent, suitably qualified personnel and the equipment necessary to conduct the construction layout and survey work and shall assume full responsibility for all dimensions and measurements taken or derived by the Contractor from control points set by the Department.

The cost incurred by the Contractor in complying with the requirements of this Article shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

105.12 Inspection of Work

All materials and each part or detail of the work shall be subject at all times to inspection by the Engineer. Such inspection may include mill, plant, or shop inspection, and any material furnished under the specifications is subject to such inspection. The Engineer shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection.

If the Engineer requests, the Contractor shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standard required by the contract documents. Should the work thus exposed or examined prove acceptable, the uncovering or removing, and the replacing of the covering or making good of the parts removed will be paid for as extra work; but should the work so exposed or examined prove unacceptable, the uncovering or removing, and the replacing of the covering or making good of the parts removed, will be at no additional cost to the Department.

105.13 Verification of Lines, Grades, Elevations, and Dimensions

All lines, grades, elevations, and dimensions associated with each part or detail of the work shall be subject at all times to inspection and verification by the Engineer. Such verification may include review of the construction survey work completed by the Contractor in accordance with Article 105.11. During the performance of the work, the Engineer shall be furnished with such information and assistance by the Contractor as is required to make such inspections and to verify the lines, grades, elevations, and dimensions associated with each part or detail of the work.

Prior to final acceptance of the work, the Contractor will be required to furnish an as-built survey illustrating all lines, grades, elevations, and dimensions associated with each part or detail of the work, such as-built survey clearly indicating, in red, any deviations from the lines, grades, elevations, and elevations shown in the construction plans.

The cost incurred by the Contractor in complying with the requirements of this Article shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

105.14 Duties of Resident Project Representative

Should a Resident Project Representative be furnished by the Department in accordance with Article 105.02, such Resident Project Representative will assist the Engineer in providing more extensive observation of the work. The Resident Project Representative will act as directed by and under the supervision of the Engineer and will confer with the Engineer regarding his or her actions. The Resident Project Representative's dealings in matters pertaining to the work shall, in general, be with the Engineer and Contractor. The Resident Project Representative's dealings in matters pertaining to the work with subcontractors or suppliers shall be through or with the full knowledge and approval of the Contractor.

During performance of the work, the Resident Project Representative will serve as the Department's liaison with the Contractor, working principally through the Contractor's designated superintendent, providing the Contractor with information regarding the intent of the contract documents and obtaining additional details and information from the Engineer when required for proper execution of the work. The Resident Project Representative will consult with the Engineer when interpretations, clarifications, and explanations of the contract documents are requested by the Contractor. As a result of such consultation, the Engineer will supplement or amend the contract, in accordance with Article 104.02, as necessary to further clarify, detail, and illustrate the work.

The Resident Project Representative will also accept proposed adjustments to the approved schedules, samples, and shop, working, or layout drawings. The Engineer's review and acceptance of such proposed adjustments will be in accordance with the provisions of the contract documents related thereto.

The Resident Project Representative will conduct on-site observations of the Contractor's work to assist the Engineer in determining if the work is, in general, proceeding in accordance with the contract documents. The Resident Project Representative will consult with the Engineer whenever he or she believes that any part of the Contractor's work is defective, or believes that such work will not produce a completed project that conforms to the contract documents or will prejudice the integrity of the completed project as a functioning whole. As a result of such consultation, the Engineer will conduct such inspections as are necessary to evaluate the acceptability of the work in question. The Resident Project Representative will assist the Engineer with such project inspections to determine whether the work has been satisfactorily completed.

The Resident Project Representative will further assist the Engineer during performance of the work by attending meetings with the Contractor, such as the preconstruction meeting and progress meetings, maintaining records for use in preparing project documentation, furnishing periodic reports of the Contractor's progress on the work and his or her compliance with the approved schedules, and drafting and recommending field orders, change orders, and work change directives that he or she believes necessary for proper execution of the work. The Resident Project Representative will also review applications for payment for compliance with the provisions of the contract documents related thereto and will forward such applications, along with his or her recommendations regarding such applications, to the Engineer.

During the performance of the work, the Resident Project Representative shall have the duties and authority described above. In performing such duties, the Resident Project Representative shall not assume any responsibilities of the Contractor or any subcontractors, suppliers, individuals, or entities performing work or labor for or rendering services or supplies to the Contractor. The Resident Project Representative shall not have control or authority over, nor be responsible for, the Contractor's means, methods, techniques, sequences, or procedures of construction, or for the Contractor's safety precautions and programs incident thereto, or for any failure of the Contractor to comply with laws and regulations applicable to the performance of the work. The Resident Project Representative will not be responsible for the Contractor's failure to perform the work in accordance with the contract documents. Any change in or deviation from the contract documents shall only be authorized by the Department in accordance with the provisions of the contract documents related thereto.

105.15 Duties of Inspector

Inspectors will be authorized to inspect all work done and materials furnished. Such inspections may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. Inspectors will not be authorized to alter or waive the provisions of the contract. Inspectors will not be authorized to issue instructions contrary to the plans and specifications, or to act as foreman for the Contractor.

105.16 Duties of Department

Except as otherwise provided in the contract documents, the Department shall issue all communications to the Contractor through the Engineer. During performance of the work, the Department shall furnish required data and information, execute supplements and amendments to the contract documents issued by the Engineer to further clarify, detail, illustrate, or direct the work, and make payments as they are due in accordance with the provisions of the contract documents related thereto.

During the performance of the work, the Department shall have the duties and authority described above and elsewhere in the contract documents. In performing such duties, the Department shall not have control or authority over, nor be responsible for, the Contractor's means, methods, techniques, sequences, or procedures of construction, or for the Contractor's safety precautions and programs incident thereto, or for any failure of the Contractor to comply with laws and regulations applicable to the performance of the work. The Department will not be responsible for the Contractor's failure to perform the work in accordance with the contract documents.

105.17 Substantial Completion

When the Contractor considers the entire project to be complete and ready for its intended use, the Contractor shall notify the Department in writing that the entire work is substantially complete, except for items specifically listed by the Contractor as incomplete, and request that the Department issue a certificate of substantial completion. Promptly after such notification is received by the Department, the Contractor and Engineer shall make an inspection of the work to determine the status of completion. If the Engineer does not consider the work to be substantially complete, the Department will notify the Contractor in writing giving the reasons therefor. If the Engineer does consider the work to be substantially complete, the Department will deliver to the Contractor a certificate of substantial completion. There shall be attached to the certificate a list of items to be completed or corrected before final inspection and payment.

The Department shall have the right to exclude the Contractor from the site after the date of substantial completion subject to allowing the Contractor reasonable access to remove its property and complete or correct items on the list.

105.18 Final Inspection

Upon due notice from the Contractor to the Department of completion of the entire project, the Engineer will make an inspection. If all construction provided for and contemplated by the contract is found satisfactorily completed according to all of the requirements of the contract, the inspection shall constitute the final inspection and the Department will notify the Contractor in writing of the date of the final inspection.

If the inspection discloses any work, in whole or in part as being unsatisfactory, the Department will give the Contractor the necessary instructions for correction of same, and the Contractor shall immediately comply with such instructions. Upon correction of the work, another inspection will be made which shall constitute the final inspection provided the work has been satisfactorily completed. In such event, the Department will notify the Contractor in writing of the date of the final inspection.

105.19 Warranty and Guarantee

The Contractor warrants and guarantees that all work will be in accordance with the contract documents and will not be defective. This warranty shall apply to the work for a period of one year following the date of acceptance of the final application for payment by the Engineer (i.e., final acceptance date). Any part or detail of the work that becomes or is determined to be defective in any manner during such one year warranty period, except for defects resulting from normal wear and tear and force majeure events, and defects determined by the Engineer to have resulted from causes other than the Contractor's failure to perform the work in accordance with the contract documents, shall be removed and replaced by the Contractor at no additional cost to the Department. Such defective work shall be removed and replaced within 30 days of receiving written notice from the Engineer of the need for removal and replacement of such defective work.

Upon final acceptance of the work, the Contractor will be required to furnish a maintenance bond in the penal sum of ten percent (10%) of the full amount of the contract price, on a form approved by the Engineer, executed in accordance with the bidding documents, and issued by a surety acceptable to the Department and authorized to transact business under the laws of the State of Indiana. The Contractor will be required to furnish such maintenance security to the Department within fifteen days of the final acceptance date (i.e., date of acceptance of the final application for payment by the Engineer). The maintenance security shall stand as a guarantee that the Contractor will correct defective work during the one year warranty period.

The maintenance security of the Contractor will be retained until the end of the one year warranty period. If the Contractor fails to remove and replace defective work in accordance with this Article, the Department may consider the Contractor to be in default, and the maintenance security of the Contractor may be forfeited.

SECTION 106 CONTROL OF MATERIALS

106.01 Source of Supply and Quality Requirements

The materials used on the work shall meet all quality requirements of the contract. The Contractor shall notify the Department of the proposed sources of materials prior to delivery. At the option of the Department, materials may be approved at the source of supply before delivery is started. If it is found after trial that sources of supply for previously approved materials do not produce uniform and satisfactory products, or if the product from any source proves unacceptable at any time, the Contractor shall furnish acceptable materials from other sources.

All materials to be permanently incorporated in the work shall be new unless otherwise specifically prescribed in the contract documents.

All iron and steel products, which are to be incorporated into the work shall be domestically manufactured or produced and fabricated. The Contractor shall obtain from the iron or steel producer and/or fabricator, in addition to the mill analysis, a certification that all iron or steel materials meet these domestic source requirements.

The application of all coatings, epoxy, galvanizing, painting, etc., to metal products shall be domestically applied.

106.02 Equivalent Materials

The materials used on the work shall meet all requirements of the contract documents. Whenever a material is specified or described in the contract documents by using the name of a proprietary item or the name of a particular manufacturer and product, the specification or description is intended to establish the type, function, appearance, and quality required and the term "or equal" shall be implied. The naming of a proprietary item or a particular manufacturer and product in the contract documents shall only be construed as indicating the type, function, appearance, and quality or material required on the work and shall not be construed as preventing or restricting the use of another manufacturer's product on the work, provided that such product has equivalent properties to that named in the contract documents.

Materials other than those specified or described in the contract documents using the name of a proprietary item or the name of a particular manufacturer and product may be submitted to the Department for review and approval. If, in the Engineer's sole discretion, an item submitted by the Contractor for review is functionally equivalent to that named in the contract documents, it may be approved by the Department as an "or equal" item. Materials may be accepted as "or equal" items provided that the following conditions are met.

- (1) The Contractor notifies the Department in advance of his or her intention to use materials other than those specified or described in the contract documents.
- (2) Written evidence, including descriptive literature, specifications, shop drawings, and test results, in English, that the proposed material is functionally equivalent to that specified or described in the contract documents, is provided to the Engineer.
- (3) When requested by the Engineer, all necessary samples are taken and all necessary tests are completed by a qualified inspector, without charge to the Department, to evaluate the proposed material's properties and functional equivalency to the material specified or described in the contract documents.

The burden of proof as to the merit of a proposed “or equal” item shall be upon the Contractor. The Department may require the Contractor to furnish data, in addition to that listed above, about the proposed “or equal” item to allow for the Engineer’s review and evaluation of the proposed material. The Contractor shall provide all such data at his or her expense.

The Department shall be allowed a reasonable time within which to evaluate each proposed “or equal” item. In all instances the Engineer shall be the sole judge of the equivalency of a material to that specified or described in the contract documents.

The Contractor shall be responsible for complying with the requirements of this Article so that a proposed “or equal” item can be evaluated prior to the time it is required, and no proposed “or equal” item shall be ordered or incorporated into the work until approval for its use has been obtained from the Department. Any work in which proposed “or equal” items have been used without prior approval of the Department shall be performed at the Contractor’s risk and may be considered as unacceptable or unauthorized, may not be paid for, and may need to be removed and replaced.

106.03 Unacceptable Materials

All materials not conforming to the requirements of the contract at the time they are used will be considered unacceptable and all such materials will be rejected and shall be removed immediately from the site of the work unless otherwise instructed by the Engineer. If in place, they shall be removed and replaced with acceptable materials at no additional cost to the Department. No rejected material, the defects of which have been corrected, shall be used until approval has been given. Upon failure of the Contractor to comply forthwith with any order of the Engineer pursuant to the provisions of this Article, the Department shall have authority to remove and replace defective materials and to deduct the cost of removal and replacement from any monies due or to become due the Contractor.

106.04 Samples, Tests, and Cited Specifications

All materials shall be approved by the Department before incorporation in the work. The Contractor shall provide sufficient advance notice to allow for necessary samples to be taken and necessary tests to be completed by a qualified inspector before the materials are incorporated in the work. All necessary samples shall be taken and all necessary tests shall be completed by a qualified inspector without charge to the Department.

Any work in which untested and unaccepted materials are used without approval or written permission of the Department shall be performed at the Contractor’s risk and may be considered as unacceptable or unauthorized and will not be paid for. Samples shall be taken and tests shall be made by a qualified inspector. Unless otherwise designated, all samples shall be taken and tests will be made by a qualified inspector at the expense of the Contractor. All materials being used are subject to inspection, test, or rejection at any time. When requested by the Department, the Contractor shall furnish a complete written statement of the origin, composition, and manufacture of any or all materials (manufactured, produced, or grown) to be used in the work.

Wherever in the contract an abbreviated citation, from those listed in Article 101.01, is used followed by an appropriate serial designation, it shall be construed to mean the latest test or specification as the case may be, either as standards, tentative standards, interims, revisions, or amendments, in effect on the date of invitation for bids.

106.05 Plant Inspection

The Engineer may undertake the inspection of materials at the source. In the event plant inspection is undertaken, the Engineer shall have the cooperation and assistance of the Contractor and the source with whom the Contractor has contracted for materials, and shall have full entry at all times to such parts of the plant as may concern the manufacture or production of the materials being furnished.

It is understood that the Department reserves the right to request a retest of all materials which have been tested by the source of supply after the same have been delivered, and to reject all materials which, when retested, do not meet the requirements of the contract.

106.06 Source of Materials

The source of supply, of each material used, shall be approved by the Department before delivery is started. If sources previously approved are found to be unacceptable at any time and fail to produce materials satisfactory to the Department, the Contractor shall furnish materials from other approved sources.

If the Contractor decides to investigate new sources of supply, the Contractor shall furnish, without charge, such samples and test results as the Engineer may require. All necessary samples shall be taken and all necessary tests shall be completed by a qualified inspector without charge to the Department, but it is understood that such tests are for informational purposes only and tests shall not be construed as a guarantee of acceptance of any material which may be delivered later for incorporation in the work. Only materials actually delivered for use will be considered, and their acceptance will be based solely upon the results of the tests made on these materials.

If the Contractor installs equipment or apparatus to produce materials from new sources of supply, the Contractor does so at his/her own risk, and the Contractor shall assume full responsibility for the production of uniform and satisfactory materials. In case of failure of a source of supply to produce materials satisfactory to the Department, the Contractor shall indemnify and save harmless the Department from any and all claims for loss or damage of whatever nature which the Contractor may have suffered by reason of the installation of equipment and the operation of such sources of supply.

When materials are furnished to the Contractor by the Department for inclusion in the work, the Contractor's responsibility for all such materials shall be the same as for materials furnished by the Contractor.

106.07 Stored Materials

If it is necessary to store materials, they shall be protected in such a manner as to ensure the preservation of their quality and fitness for the work. All stored materials will be inspected at the time of use in the work, even though they may have been inspected and approved before being placed in storage. The Contractor may use the site for storage of materials, but the stockpiles shall be confined to such areas designated on the plans or approved by the Department. If the Contractor wishes to stockpile materials off site, he or she shall obtain written approval from the property owner and shall present such written approval to the Department prior to doing so. Such additional off site space shall be provided by the Contractor at no additional cost to the Department.

106.08 Handling Materials

All materials shall be handled in such manner as to preserve their quality and fitness for the work. Aggregates shall be transported from the storage sites to the work in tight vehicles so constructed as to prevent loss or segregation of materials after loading and measuring in order to prevent inconsistencies in the quantities of materials intended for incorporation in the work as loaded, and the quantities as actually received at the place of operations.

**SECTION 107
LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC**

107.01 Laws to be Observed

The Contractor shall give all notices required by and shall at all times observe and comply with all Federal and State laws, local laws, ordinances, and regulations which in any manner affect the performance of the work, including the Occupational Safety and Health Act of 1970, as amended, and all such orders or enactments, as exist at the present and which may be enacted later, of legislative bodies or tribunals having legal jurisdiction or affect over the work, and no plea of misunderstanding or ignorance thereof will be considered. Except where expressly required by applicable laws and regulations, the Department shall not be responsible for monitoring the Contractor's compliance with any such law, ordinance, regulation, order, or enactment. The Contractor shall indemnify and save harmless the Department and all of its officers, agents, employees, and servants against any claim or liability arising from or based on the violation of such law, ordinance, regulation, order, or enactment, whether by the Contractor or anyone subject to the control of the Contractor.

If the Contractor performs any work knowing or having reason to know that it is contrary to any applicable laws or regulations, the Contractor shall bear all claims, costs, losses, and damages, including, but not limited to, all fees and charges of engineers, attorneys, and other professionals and all court or arbitration or other dispute resolution costs, arising out of or relating to such work. It shall not be the Contractor's responsibility to make certain that the construction plans are in accordance with all applicable laws and regulations, but this shall not relieve the Contractor of his or her obligations under the contract documents.

107.02 Worker's Compensation Insurance

Upon award of his or her contract by the Department, the Contractor shall furnish to the Department certificates of insurance covering Worker's Compensation, or satisfactory evidence that this liability is otherwise taken care of.

Such insurance, or other means of protection as herein provided, shall be kept in force until all work to be performed under the contract has been completed and accepted by the Department, as described herein, and it is hereby understood and agreed the maintenance of such insurance or other protection, until acceptance of the work by the Department, is a part of the contract. Failure to maintain such insurance or any other act which results in lack of protection may be considered as a breach of the contract.

107.03 Permits and Licenses

Unless otherwise provided for in the contract documents, the Contractor shall obtain and pay for all permits and licenses and give all notices necessary and incident to the due and lawful prosecution of the work. Upon request of the Department, the Contractor shall furnish to the Department satisfactory proof that such permits and licenses have been obtained and are in full force and effect during the performance of the work.

107.04 Patented Devices, Material, and Processes

If any design, device, material, or process covered by letters, patent, or copyright is used by the Contractor, whether required or not, the Contractor shall provide for such use by suitable legal agreement with the patentee or owner, guaranteeing the Department indemnity from and against all claims for infringement, and shall include the cost of such agreement in the price bid for the work. It shall be the duty of the Contractor, if so demanded by the Department, to furnish said Department with a copy of the legal agreement with the patentee or owner, and if such copy is not furnished when demanded, then the Department may, if it so elects, withhold any and all payments to said Contractor until said legal agreement is furnished. If a suitable legal agreement with the patentee or owner is not made as required herein, the Contractor and surety shall indemnify and save harmless the Department from any and all claims for infringement by reason of the use of any such patented design, device, material, or process, or any trademark or copyright in connection with the work agreed to be performed under the contract, and shall indemnify the Department for any cost, expense, and damages which it may be obliged to pay by reason of any such infringement at any time during the prosecution or after the completion of the work.

107.05 Federal Aid Provision

When the United States Government pays all or any portion of the cost of a project, the Federal laws and the rules and regulations made pursuant to such laws must be observed by the Contractor, and the work shall be subject to the inspection of the appropriate Federal agency.

Such inspection shall in no sense make the Federal Government a party to this contract and will in no way interfere with the rights of either party hereunder.

107.06 Sanitary Provisions

The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of the Contractor's employees and Department representatives as may be necessary to comply with the requirements of the State and Local Boards of Health, or of other authorities having jurisdiction.

107.07 Public Convenience and Safety

The Contractor shall notify the Department at least three days in advance of the starting of any work which might in any way inconvenience or endanger vehicular and pedestrian traffic, so arrangements may be made, if necessary, for closing paths, trails, and roads and providing suitable detours. The Contractor shall at all times conduct the work in such a manner as to ensure the least obstruction to vehicular and pedestrian traffic. The convenience of the general public and residents adjacent to the site shall be provided for in an adequate and satisfactory manner. When directed by the Department, the Contractor shall provide and maintain an acceptable surface aggregate for temporary paths, trails, roads, and approaches for access to driveways, houses, buildings, or other property abutting the site. Unless otherwise provided for in the contract, the cost incurred by the Contractor for providing such temporary paths, trails, roads, and approaches will be paid for as extra work as provided in Article 109.05.

The Department may require the Contractor to finish a section on which work is in progress before work is started on any additional sections if the completion of such section is essential to public convenience.

No broken pavement, open holes, trenches, barricades, cones, or drums will remain on or adjacent to the traveled way and all paths, trails, roads and travel lanes shall be opened to vehicular and pedestrian traffic during any legal holiday period, except where major construction or reconstruction makes it impractical. Such legal holidays will include:

Porter Co. Dept. of Development & Storm Water Management
February 1, 2024

New Year's Day
 Easter
 Memorial Day
 Independence Day

Labor Day
 Thanksgiving Day
 Christmas Day

The length of the holiday period shall vary as follows, depending on the day of the week the legal holiday falls on or is observed.

Day of Holiday	Length of Holiday Period
Sunday	3 p.m. Friday - 12 midnight Sunday
Monday	3 p.m. Friday - 12 midnight Monday
Tuesday	3 p.m. Friday - 12 midnight Tuesday
Wednesday	3 p.m. Tuesday - 12 midnight Wednesday
Thursday	3 p.m. Wednesday - 12 midnight Sunday
Friday	3 p.m. Thursday - 12 midnight Sunday
Saturday	3 p.m. Friday - 12 midnight Sunday

On weekends, excluding holidays, all paths, trails, roads and travel lanes shall be opened to vehicular and pedestrian traffic from 3:00 P.M. Friday to midnight Sunday except where structure construction or major rehabilitation makes it impractical.

When any construction work is performed on structures over paths, trails, roads or travel lanes which are open to vehicular and pedestrian traffic, the Contractor shall protect the traffic from falling objects and/or materials. The Contractor's method of protection shall be subject to the approval of the Department and the cost thereof shall be included in the work involved.

107.08 Work on Navigable Waters

All work on navigable waters shall be so conducted that free navigation of the waterways will not be interfered with and that the existing navigable depths will not be impaired, except as allowed by permit issued by the authority having jurisdiction over the navigable waters.

107.09 Maintenance of Traffic

When work zone traffic control is required near the area under construction, or when any section of road is subject to full or partial closure for construction operations of any type, the Contractor shall protect the workers and provide for safe and convenient public travel by providing adequate traffic control. The traffic control shall be subject to the approval of the Department and the cost thereof shall be included in the work involved.

107.10 Dirt on Pavement or Structures

Where equipment or vehicles related to the performance of the work are operated on any portion of the pavement or structures used by traffic on or adjacent to the site, the Contractor shall maintain such pavement free from all dirt and debris at all times. If dirt or debris are carried on to such pavement or structures by equipment or vehicles related to the performance of the work, the Contractor shall immediately clean the pavement of all dirt and debris. The cost of this work shall be included in the unit prices bid and no additional compensation will be allowed.

107.11 Equipment on Pavement and Structures

The Contractor shall not load nor permit any part of any pavement or structure to be loaded in any manner that will endanger the pavement or structure, nor shall the Contractor subject any part of the work or adjacent property to stresses or pressures that will endanger it. The pavement and structures on or adjacent to the work shall be protected from damage from loading and from damage by lugs or cleats on treads or wheels or equipment. All equipment used in the prosecution of the work shall comply with the legal loading limits established by the statutes of the governing state or local entity when moved over or operated on any pavement or structure unless permission in writing has been issued by the governing state or local entity. Before using any equipment which may exceed the legal loading, the Contractor shall secure a permit from the governing state or local entity, allowing ample time for making an analysis of stresses to determine whether or not the proposed loading would be within safe limits. The Department will not be responsible for any delay in construction operations or for any costs incurred by the Contractor as a result of compliance with the above requirements.

107.12 Use of Explosives

The use of explosives is not necessary for the prosecution of the work. Explosives shall not be used on site.

107.13 Use of Fire Hydrants

If the Contractor desires to use water from hydrants, the Contractor shall make application to the proper authorities, and shall conform to the municipal ordinances, rules, or regulations concerning their use.

Fire hydrants shall be accessible at all times to the fire department. No material or other obstructions shall be placed closer to a fire hydrant than permitted by municipal ordinances, rules, or regulations, or within 5 feet of a fire hydrant, in the absence of such ordinances, rules, or regulations.

107.14 Unexpected Regulated Substances

If, during the progress of the work, the Contractor encounters or exposes, or if the Contractor or anyone for whom the Contractor is responsible creates, any abnormal condition which may indicate the presence of a regulated substance, the Contractor shall secure or otherwise isolate such condition, stop all work in connection with such condition and in any area affected thereby, except in an emergency, as defined in Article 107.31, and promptly thereafter notify the Department about such condition. A regulated substance is a hazardous substance, special waste, or petroleum or any fraction thereof, as those terms are defined in applicable statutes.

Abnormal conditions include, but will not be limited to, the following: presence of underground storage tanks or barrels; discolored earth, metal, wood, etc.; visible fumes; obnoxious or unusual odors; excessively hot earth; smoke; or any other condition which appears abnormal and could be a possible indicator of regulated substances. The conditions shall be treated with extraordinary caution. Appropriate action shall be taken to ensure public and employee safety.

Upon receipt of the notification by the Department, the Engineer will review and, if determined to be necessary, evaluate or retain a qualified expert to evaluate such condition or to take corrective action. The Engineer may contact other state and/or federal agencies regarding such condition. Promptly after consulting with any qualified experts, and based on the findings of the Engineer, the Department shall take such actions as are necessary to allow the Contractor to resume the work. The Contractor's operations shall not resume until so directed by the Department.

If after receipt of such written notice, the Contractor does not agree to resume work based on a reasonable belief it is unsafe to do so, then the Department may order the portion of the work that is in the area affected by such condition to be deducted from the work according to the provisions of Article 104.03.

Removal and disposal of waste material, if necessary, shall be coordinated with the removal and disposal of contaminated soil, groundwater, and/or an underground storage tank UST and shall be according to applicable statutes. Should the removal and disposition of waste material require special procedures by certified personnel, the Contractor will make arrangements with qualified persons to remove and dispose of the material. If the Department provides for removal and disposal operations by entities other than the Contractor and arranges for the Contractor to pay all costs in connection therewith, the Contractor will be reimbursed according to Article 109.06.

Disposition of the regulated substances shall be made according to the requirements and regulations of other state and/or federal agencies. Any waste generated as a special waste or hazardous waste shall be manifested off-site by a special waste transporter using an appropriate generator number. Any waste generated as a non-special waste may be disposed of off-site at a permitted facility without a manifest, special waste transporter, or generator number.

The Contractor shall not be responsible for any abnormal condition encountered or exposed at the site which was not shown in the construction plans or identified in the contract documents. However, the Contractor shall be responsible for any abnormal condition created by materials or equipment brought to the site by the Contractor, subcontractors, suppliers, or anyone else for whom the Contractor is responsible.

When the Contractor encounters unexpected regulated substances due to the presence of unknown utilities, Article 105.08 shall apply; otherwise, if the Department does not direct a resumption of operations, the provisions of Article 108.10 shall apply. When the Contractor performs necessary work required to dispose of these materials, payment will be made at the contract unit price for pay items applicable to such work, or payment will be made according to Article 104.03.

107.15 Protection and Restoration of Property

The Contractor shall take all necessary precautions for the protection of public or private property, such as pavement, walls and foundations of buildings, vaults, underground structures of public utilities, underground structures of private utilities, survey markers, overhead structures of public utilities, trees, shrubbery, crops, and fences contiguous to the work, for which the contract does not provide for removal or specify precautions and/or which does not interfere with the work. If public or private property interferes with the work, the Contractor shall notify, in writing, the Department, advising it of the nature of the interference and shall arrange to cooperate with the Department on the protection or disposition of such property, as directed by the Engineer. If the Department determines the protection or disposition of such property will delay the Contractor's work, an appropriate extension of contract time will be granted.

The Contractor shall be responsible for the damage or destruction of property of any character resulting from neglect, misconduct, or omission in his/her manner or method of execution or nonexecution of the work, or caused by defective work or the use of unsatisfactory materials, and such responsibility shall not be released until the work shall have been completed and accepted and the requirements of the Specifications complied with.

Whenever public or private property is so damaged or destroyed, the Contractor shall, at no additional cost to the Department, restore such property to a condition equal to that existing before such damage or injury was done by repairing, rebuilding, or replacing it as may be directed, or the Contractor shall otherwise make good such damage or destruction in an acceptable manner. If the Contractor fails to do so, the Department may, after the expiration of a period of 48 hours after giving the Contractor notice in writing, proceed to repair, rebuild, or otherwise restore such property as may be deemed necessary, and the cost thereof will be deducted from any compensation due, or which may become due, the Contractor under this or any other contract between the Department and the Contractor.

The cost of all materials required and all labor necessary to comply with the above provisions will not be paid for separately, but shall be considered as included in the unit bid prices of the contract, and no additional compensation will be allowed.

107.16 Protection and Preservation of Aboriginal Records and Antiquities

The Contractor shall take reasonable precautions to avoid disturbing aboriginal records and antiquities of archaeological, paleontological, or historical significance. No objects of this nature shall be disturbed without written permission of the Department. When such objects are uncovered unexpectedly, the Contractor shall notify the Department of their presence and shall not disturb them until written permission to do so is granted.

If it is determined by the Department that exploration or excavation of aboriginal records or antiquities the site is necessary to avoid loss, the Contractor shall cooperate in the salvage work attendant to preservation. If the Department determines the salvage work will delay the Contractor's work, an appropriate extension of contract time will be granted.

107.17 Approval of Proposed Borrow Areas, Use Areas, and/or Waste Areas

All proposed borrow areas, use areas, including, but not limited to temporary access roads, detours, runarounds, plant sites, and staging and storage areas, and/or waste areas are to be designated by the Contractor to the Department and approved prior to their use. Such areas shall be evaluated by the Contractor, at no additional cost to the Department, according to those requirements applicable to the site, and approval by the authorities having jurisdiction over such requirements shall be forwarded to the Department prior to the use of such areas.

A location map delineating the proposed borrow area, use area, and/or waste area shall be submitted to the Department for approval along with an agreement from the property owner granting the Contractor permission to enter the property and conduct reconnaissance surveys of the site for archaeological resources, threatened and endangered species or their designated essential habitat, wetlands, and forested areas, prairies, and savannas. The type of location map submitted shall be a 7.5 minute quadrangle map or other location map acceptable to the Department. Submittals shall include the intended use of the site and provide sufficient detail for the Department to review the potential impacts of the proposed borrow area, use area, and/or waste area. At the direction of the Department, the Contractor shall initiate reconnaissance surveys of the site, as necessary, at no cost to the Department. The Contractor shall advise the Department of the expected time required to complete all reconnaissance surveys and shall share the results of such reconnaissance surveys with the Department.

- (a) Archaeological Resources. If the results of the reconnaissance surveys identify the presence of potentially significant archaeological resources on the site, the Contractor shall have the option of choosing another site or paying for additional archaeological testing. If the Contractor chooses the option of additional testing, the Contractor will obtain a time and cost proposal for such additional testing prior to the testing work being done. The archaeological testing may result in two possible conclusions:
- (1) Results of the tests show that no further archaeological work is warranted and the site is approved; or,
 - (2) Results of the tests indicate that data recovery is warranted and the Contractor shall have the option of selecting another location or paying for the salvage operations.

If the area is approved as a borrow area, use area, and/or waste area, the Contractor shall obtain as part of the agreement with the property owner, the release of ownership of any artifacts found on the site. The Contractor shall furnish copies of the proposed and final agreement to the Department for approval.

In the event hydraulic fill or commercial material from rock quarries, waste material, etc., is to be used, a reconnaissance survey for archaeological resources may be conducted only if disturbance of previously undisturbed areas is required to provide such material.

- (b) Wetlands. If the results of the reconnaissance surveys indicate the presence of wetlands on the site and that wetlands may be adversely affected by the proposed borrow area, use area, and/or waste area, the Department will not approve the area for use unless the Contractor provides documentation of concurrence with the following:
- (1) There is no feasible alternative to the proposed actions which adversely affects wetlands; and,
 - (2) The proposal for use of the area includes all practicable measures to minimize adverse impacts to the wetland and to provide appropriate compensation for any unavoidable adverse impacts.

In addition, when a proposed borrow area, use area, and/or waste area may adversely affect wetlands, the Department will not approve the area for use unless the Contractor provides evidence of necessary permit approval from the U.S. Army Corps of Engineers, Indiana Department of Environmental Management, or other applicable regulatory authority.

- (c) Threatened and Endangered Species. If the results of the reconnaissance survey indicate the presence of threatened or endangered species and that such threatened or endangered species or their designated essential habitat may be adversely affected by the proposed borrow area, use area, and/or waste area, the Department will not approve the area for use unless the Contractor provides evidence of compliance with applicable threatened and endangered species consultation requirements.
- (d) Forested Areas, Prairies, and Savannas. If the results of the reconnaissance survey indicate the presence of forested areas, prairies, or savannas and that such forested areas, prairies, or savannas may be adversely affected by the proposed borrow area, use area, and/or waste area, the Contractor shall minimize the impact to such areas by selecting alternative sites, where practical, and by providing replacement plantings of trees, prairie plants, or other vegetation, as appropriate. Such replacement plantings of trees, prairie plants, or other vegetation shall be subject to the approval of the property owner.

107.18 Protection of Streams, Lakes, Natural Areas, Wetlands, Forested Areas, Prairies, Savannas, and Threatened and Endangered Species

The Contractor shall take sufficient precautions to prevent pollution of streams, lakes, wetlands and other natural areas with fuels, oils, or other harmful materials. The Contractor shall conduct and schedule operations so as to avoid or minimize siltation of streams, lakes, wetlands, and other natural areas.

Unless otherwise provided for in the contract documents, the Contractor shall not disturb wetlands, locations where State or Federal-listed threatened or endangered species may be found or are known to occur, areas that have been designated as essential habitat for such species, or forested areas, prairies, savannas, or other natural areas the Department has committed to protecting. Also, if previously unidentified areas containing or suspected of containing State or Federal-listed threatened or endangered species are identified during construction, the

Contractor shall immediately notify the Department. Upon receipt of such notification by the Department, the Engineer will take or will direct the Contractor to take such actions as are determined to be necessary in response to such finding or encounter. If the Engineer determines that additional actions are necessary to mitigate the effects of the project on such unidentified or previously unidentified areas containing or suspected of containing State or Federal-listed threatened or endangered species, the Contractor shall cooperate in accomplishing these actions.

The cost incurred by the Contractor in complying with the requirements of this Article shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

107.19 Indemnification

The Contractor shall be responsible for any and all injuries to persons or damages to property due to the activities of the Contractor, subcontractors, suppliers, agents, or anyone else for whom the Contractor is responsible, arising out of or resulting from performance of the contract, or any activity in connection therewith. To the fullest extent permitted by law, the Contractor shall indemnify, save harmless and defend the Department, its agents, servants, and employees and each of them against any and all lawsuits, claims, demands, liabilities, losses, and expenses, including court costs and attorney’s fees, for or on account of any injury to any person, or any death at any time resulting from such injury, or any damage to any property, which may arise or which may be alleged to have arisen out of or in connection with the work covered by this contract. The foregoing indemnity shall apply except if such injury, death or damage is cause directly by the willful and wanton conduct of the Department, its agents, servants, or employees or any other person indemnified hereunder.

In claims against the Department or any individual indemnified under this Article by an employee of the Contractor, a subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification herein shall not be limited by a limitation on amount or type of damages payable by or for the Contractor or subcontractor under any employee benefits act.

In the event any such claim, lawsuit, or action is asserted, any such money due the Contractor under and by virtue of the contract as shall be deemed necessary by the Department for the payment thereof, may be retained by the Department for said purpose, or in case no money or insufficient money is due to satisfy such claim, lawsuit, or action, the Contractor’s insurance provider shall remain liable for any payment therefore until any such lawsuit, action, or claim has been settled or has been fully judicially determined and satisfied.

No inspection or action by the Department, its employees or agents, shall be deemed a waiver by the Department of full compliance with the requirements of the contract. This indemnification shall not be limited by the required minimum insurance coverages provided in the contract.

107.20 Insurance

The Contractor shall obtain and thereafter keep in force the following insurance coverages provided by insurance companies acceptable to the Department and authorized to transact business under the laws of the State of Indiana. Coverage limits shall be written at not less than the minimum specified in this Article. Higher minimum limits and additional coverage may be specified elsewhere in the contract documents. Whether stated in this Article or elsewhere in the contract documents, the Department does not warrant the adequacy of the types of insurance coverage or the limits of liability specified.

- (1) Indemnify, Hold Harmless, and Defend Clause. The Contractor and his or her insurance provider, to the fullest extent permitted by law, shall indemnify, save harmless, and defend the Department, its agents, servants, and employees and each of them against any and all lawsuits, claims, demands, liabilities, losses, and expenses, including court costs and attorney’s fees, for or on account of any injury to any person, or any death at any time resulting from such injury, or any damage to any property, which may arise or which may be alleged to have arisen out of or in connection with the work covered by this contract. The foregoing indemnity shall apply except if such injury, death or damage is cause directly by the willful and wanton conduct of the Department, its agents, servants, or employees or any other person indemnified hereunder.
- (2) Liability Insurance Coverages. The Contractor shall purchase from and maintain in a company or companies acceptable to the Department, such company or companies lawfully authorized to do business in the state of Indiana, such insurance as will protect the Contractor from claims set forth below which

may arise out of or result from the Contractor’s operations under the contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable.

- (a) Commercial General Liability Insurance. Commercial general liability insurance in a broad form on an occurrence basis shall be maintained, to include, but not be limited to, coverage for the following where exposure exists: premises/operations; products/completed operations; contractual liability; and coverage to respond to claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor’s employees, as well as claims for damages insured by usual personal injury liability coverage which are sustained: (1) by a person as a result of an offense directly or indirectly related to employment of such person by the contractor; or, (2) by another person and claims for damages, other than to the work itself, because of injury to or destruction of tangible property, including loss of use there from.
 - (b) Worker’s Compensation Insurance. Worker’s compensation insurance shall be maintained covering all liability of the Contractor arising under all applicable worker’s compensation statutes in accordance with the laws of the State of Indiana.
 - (c) Employer’s Liability Insurance. Employer’s liability insurance shall be maintained to respond to claims for damages because of bodily injury, occupational sickness, or disease or death of the Contractor’s employees.
 - (d) Automobile Liability Insurance. Automobile liability insurance shall be maintained to respond to claims for damages because of bodily injury, death of a person, or property damage arising out of ownership, maintenance, or use of a motor vehicle. This policy shall be written to cover any auto whether owned, leased, hired, or borrowed.
- (3) Liability Insurance Limits. The Contractor’s liability insurance, as required above, shall be written with limits of insurance not less than the following.
- (a) Commercial General Liability Insurance

*General Aggregate Limit	\$1,000,000
Damage to Rented Premises Limit	\$ 100,000
Products/Completed Operations Limit	\$1,000,000
Personal and Advertising Injury Limit	\$1,000,000
Each Occurrence Limit	\$1,000,000

** The policy shall be endorsed for the General Aggregate Limit to apply on a “Per Project” basis.*
 - (b) Employer’s Liability Insurance

Bodily Injury by Accident (Each Accident)	\$ 500,000
Bodily Injury by Disease (Each Employee)	\$ 500,000
Bodily Injury by Disease (Policy Limit)	\$ 500,000
 - (c) Automobile Liability Insurance

Combined Single Limit (Each Accident)	\$1,000,000
---------------------------------------	-------------
- (4) Liability Insurance Conditions. The Department, its agents, officers, and employees shall be named as additional insured under ISO additional insured endorsement CG 20 26, edition date 10/93 or its equivalent. The Contractor’s insurance shall be primary and non-contributory. Such contractual liability insurance coverage shall be broad enough to respond to the liability assumed by the Contractor in the indemnify, hold harmless, and defend clause described herein.
- (5) Certificates of Insurance. Certificates of insurance acceptable to the Department, complete with the required endorsements, shall be filed with the Department upon award of the contract. The Department shall be provided with a 30-day written notice of the cancellation or non-renewal of any insurance policy or any material change within an endorsement. Certificates evidencing renewal or replacement of such insurance policies or endorsements shall be provided to the Department at least fifteen days prior to the expiration, cancellation, or non-renewal of such policies or endorsements.

- (6) Duration of Insurance Coverage. The insurance described herein shall be maintained for the duration of the contract and shall remain in force during the period covering occurrences happening on or after the effective date of the agreement, during performance of the work, and at all times thereafter when the Contractor may be correcting, removing, or replacing defective work.
- (7) Failure to Comply. In the event the Contractor fails to obtain or maintain any insurance coverage required under this contract, the Department may purchase such insurance coverage and charge the expense thereof to the Contractor.

The cost incurred by the Contractor in complying with the requirements of this Article shall be considered as included in the contract unit prices bid for the various items of work involved and no additional compensation will be allowed.

107.21 Contractor Safety Responsibility

The Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work. The Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to: all persons on the site who may be affected by the work; all of the work and materials and equipment to be incorporated therein, whether in storage on or off the site; and other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, structures, and utilities not designated for adjustment in the course of the work.

Nothing in this contract or the contracts between the Department and any engineering consultant(s) is intended or shall be construed, unless otherwise expressly stated, to reduce the responsibility of the Contractor, a subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, from full and complete supervision and achievement of work place safety. Any inspection of the work conducted by the Department, the construction engineering consultant(s), and the officers and employees of any of them, whether notice of the results thereof is provided to anyone or not provided to anyone, shall neither establish any duty on their parts nor create any expectation of a duty to anyone, including but not limited to third parties, regarding work place safety.

In order to ensure this and other duties of the Contractor certain indemnification and insurance is required by the contract. Additionally, the Contractor guarantees to the Department a safe work place shall be provided for all employees of the Contractor and each of its subcontractors. There shall be no violation by the Contractor, a subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable of the applicable standards of the Occupational Safety and Health Act, any other work place safety act of this State, or other work place safety requirement of the Federal Highway Administration if the contract is funded in part with federal funds. The Contractor agrees to require this work place safety guarantee of all subcontractors according to Article 108.01, and expressly to require the Department to be a third party beneficiary of each guarantee.

107.22 Opening of Section of Work

The work under construction shall not be opened until authorized by the Department in writing. The Department reserves the right to use and to open any portion of the work before completion of the entire work when the Engineer determines that an early opening is in the interest of the public or when the Contractor has failed to prosecute the work continuously and efficiently. Such opening shall not be construed as an acceptance of the work, or any part of it, or cause for the Department to incur any liability to the Contractor for any additional costs, except as provided in Article 107.23 or otherwise expressly provided in the contract.

Whenever the Contractor is required to open all of the work or any portion thereof according to the authorization of the Engineer given herein, the Contractor shall conduct the remainder of the construction operations so as to cause the least obstruction to vehicular and pedestrian traffic and according to the traffic control plan approved by the Engineer.

107.23 Contractor’s Responsibility for Work

The Contractor shall be solely responsible for performing and completing the work in accordance with the contract documents. He or she shall assume full responsibility for all of the labor, tools, equipment, and other incidental items employed and provided on the work and for all of the means, methods, techniques, sequences, and procedures used in accomplishing the construction. Nothing in this contract or the contracts between the Department and any consultant(s) is intended or shall be construed, unless expressly stated, to reduce the responsibility of the Contractor thereto.

Except as otherwise provided in this Article, all work of the contract, including work added to the contract, shall be under the charge and care of the Contractor. The Contractor shall protect and maintain the work until the date of final inspection, as defined in Article 105.18. The Contractor shall assume the sole responsibility for risk of loss to the work from or by any cause whatsoever, without regard to its state of completion. The Contractor shall rebuild, repair, restore, replace, and make good all lost, destroyed, or damaged work to the condition required by the contract and shall bear all the expense and costs to do so, except when the Engineer determines the loss, destruction or damage to the work to be caused by a cataclysmic event, an act of the public enemy, or an act of a governmental authority. This exception shall not apply should the Engineer determine that the loss, destruction, or damage resulted from the Contractor's failure to take reasonable precautions or to exercise sound engineering and construction practices while conducting the work. The Contractor and Department understand and agree that the definition of what constitutes a cataclysmic event cannot be written with precision, and that application of this exception can be the subject of dispute. Therefore, the Contractor and Department agree that the Engineer will determine the occurrence of a cataclysmic event, the eligibility for reimbursement, and the expenses and costs to be reimbursed in accordance with this exception to the Contractor's responsibility for the work. All determinations of the Engineer shall be final. The Contractor shall have no entitlement to reimbursement, under this or any other article or provision of the contract, for any or all expenses or costs in the absence of the affirmative determination by the Engineer as to coverage by this exception and the amounts eligible for reimbursement, and the Contractor agrees that the application or denial of the application of this exception shall not be cause for action in the court and hereby waives the same.

The Contractor may request in writing that the Department assume responsibility to protect and maintain any portion of the work that has been completed in all respects with the requirements of the contract, subject to the approval of the Engineer.

Any approval granted may alter or limit the part of the work subject to the approval. After the date of written approval, the Contractor shall be relieved of the responsibility to protect and maintain the work subject to the approval and shall not be responsible for the correction of any damage or the performance of any maintenance work in the areas subject to the approval, except that caused in whole or in part by Contractor operations within the limits of the project or negligence. When damage to the work subject to the approval occurs and it is determined the Contractor is not responsible, the Department may order repairs to the work by the Contractor and payment will be made according to Article 109.05. Any approval granted under this Article shall neither constitute final acceptance of any of the work nor be construed to be substantial completion thereof, and the work covered by any approval shall continue to be subject to final inspection and acceptance in accordance with the terms of the contract. Repairs to work subject to the approval required due to defective materials or workmanship or caused in whole or in part by Contractor operations or negligence, shall be performed at no additional cost to the Department.

During periods of suspension in accordance with Article 108.10 or other discontinuance of work from any cause whatever, the Contractor shall continue to be responsible for the work as provided in this Article and shall take such precautions as may be necessary to prevent damage to the work, provide for normal drainage, and shall erect any necessary temporary structures, signs, or other facilities at his/her expense, except as otherwise provided in Article 108.10. During such period of suspension or discontinuance of work, the Contractor shall properly and continuously maintain, in an acceptable growing condition, all living material in newly established plantings, seedings, and soddings furnished under his/her contract, and shall take adequate precautions to protect new tree growth and other important vegetative growth against injury.

107.24 Contractor's Responsibility for Utility Property and Services

At points where the Contractor's operations are adjacent to properties or facilities of utility companies, or are adjacent to other property, damage to which might result in considerable expense, loss, or inconvenience, work shall not be commenced until all arrangements necessary for the protection thereof have been made.

The Contractor shall cooperate with the owners of any utilities in their removal and rearrangement operations so work may progress in a reasonable manner, duplication of rearrangement work may be reduced to a minimum, and services rendered by those parties will not be unnecessarily interrupted. In the event of interruption of utility services as a result of accidental breakage or as a result of being exposed or unsupported, the Contractor shall immediately notify the utility owner and Department. Arrangements will be made to restore such services to a condition equal to that existing before any such damage or destruction was done. If water service is interrupted, repair work shall be continuous until the service is restored. The cost of such restoration shall be the sole

responsibility of the Contractor. No work shall be undertaken around fire hydrants until provisions for continued service have been approved by the local fire authority.

Within the State of Indiana, a statewide one call notice system has been established for notifying utility companies about locating their facilities. The system is known as Indiana 811. All utility companies and municipalities that have buried utility facilities in the State of Indiana are part of this system.

The Contractor shall request all utility owners to locate their facilities by contacting Indiana 811 at (800) 382-5544 or 811 at least 48 hours prior to the start of the work. The political name of the township where the work is located, as provided in the contract documents, along with other location information such as section and quarter section shall be given to Indiana 811. For utilities which are not members of Indiana 811, the Contractor shall contact the utility owners directly. The construction plans will indicate which utilities, if any, are not members of Indiana 811.

The Contractor shall be responsible for maintaining all markers or excavations provided by the utility owners. The type of utility and color typically used for marking such utility are shown in the following table.

<u>Utility Service</u>	<u>Color</u>
Electric Power, Distribution, and Transmission	Safety Red
Municipal Electric Systems	Safety Red
Gas Distribution and Transmission	High Visibility Safety Yellow
Oil Distribution and Transmission	High Visibility Safety Yellow
Telephone and Telegraph System	Safety Alert Orange
Community Antenna Television Systems	Safety Alert Orange
Water Systems	Safety Precaution Blue
Sewer Systems	Safety Green
Non-Potable Water and Slurry Lines	Safety Purple
Temporary Survey	Safety Pink
Proposed Excavation	Safety White

107.25 Furnishing of Site

The Department shall furnish the site to Contractor prior to the start of work. The Department will obtain in a timely manner and, if necessary, pay for all easements and landowner agreements necessary for the performance of the work. The Department will notify the Contractor 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. Upon reasonable written request, the Department shall furnish the Contractor with a current statement of legal title and legal description of the lands upon which the work is to be performed.

If a delay in the Department’s furnishing the site or a part thereof should occur, and such delay is of such a nature as to require a change in the contract, an equitable adjustment to the contract price or contract times will be made and the contract amended according to the provisions of Article 104.02.

107.26 Personal Liability of Public Officials

In carrying out any of the provisions of this contract or in exercising any power or authority granted to the Engineer thereby, there shall be no personal liability upon the Engineer or his or her authorized representative. By entering into this contract with the Department, the Contractor covenants and agrees it shall neither commence nor prosecute any action or suit whatsoever against the officers or employees of the Department for any action or omission done or not done in the course of their administration of this contract. The Contractor agrees to pay all attorney fees and all costs incurred by the Department, its officers, and employees on account of action or suit in violation of this Article.

107.27 No Waiver of Legal Rights

The Department shall not be precluded or estopped by final acceptance or final payment, or any measurement, estimate, or certificate made either before or after the completion and acceptance of the work and payment therefore, from showing the true amount and character of the work performed and materials furnished by the Contractor, nor from showing any such measurement, estimate, or certificate is untrue or is incorrectly made; nor from showing the work or materials do not in fact conform to the contract. The Department shall not be precluded or estopped, by final acceptance, final payment, or any measurement, estimate, or certificate and payment in

accordance therewith, from recovering from the Contractor or its sureties, or both, such overpayment and damage as it may sustain by reason of the Contractor's failure to comply with the terms of the contract.

A waiver on the part of the Department of any right under the contract or of a breach of any part of the contract shall not be held to be a waiver of any other or subsequent breach or right to enforce any provision of the contract.

107.28 Construction Noise Restrictions

All engines and engine driven equipment used for hauling or construction shall be equipped with an adequate muffler in constant operation and properly maintained to prevent excessive or unusual noise. Any machine or device or part thereof which is regulated by or becomes regulated by Federal or State of Indiana noise standards shall conform to those standards. Such equipment shall be operated as designated below.

Construction within 1,000 feet of an occupied residence, motel, hospital, or similar receptor shall be confined to the period between the hours of 7:00 AM and 7:00 PM on weekdays and between the hours of 8:00 AM and 6:00 PM on Saturdays. No construction within such proximity to such facilities shall be performed outside of these working hours or any legal holiday without prior written approval from the Department. These time regulations shall not apply to construction of an emergency nature.

Requests to modify or deviate from these requirements shall be submitted in writing by the Contractor and must be approved in writing by the Department.

107.29 Dust Control

The Contractor shall be responsible for controlling the dust and air-borne dirt generated by his or her construction activities.

The Department may require the implementation of dust control procedures if wind and dry soil conditions reduce visibility on adjacent roads and property. Concerns for health and safety to the public using adjacent facilities will be grounds for the Department to request implementation of a dust control plan.

When circumstances warrant, a specific dust control plan shall be developed. The Contractor and the Engineer shall meet to review the nature and extent of dust generating activities and cooperatively develop specific types of control techniques appropriate to that specific situation. Sample techniques that may warrant consideration include the following measures.

- (a) Minimize track out of soil onto nearby publicly traveled roads.
- (b) Reduce vehicle speed on unpaved surfaces.
- (c) Cover haul vehicles.
- (d) Apply chemical dust suppressants or water to exposed surfaces, particularly to surfaces on which construction vehicles travel.

Dust control measures as indicated in the dust control plan, or as directed by the Engineer, shall be readily available for use on the project site.

The cost of this work shall be included in the unit prices bid and no additional compensation will be allowed.

107.30 Taxes

All applicable sales, use, payroll, and other similar taxes required to be paid during the performance of the work shall be considered during the preparation of bids. Bidders are hereby advised that Owner is exempt from Indiana state sales taxes on materials to be incorporated into the work and such exemption shall be considered during the preparation of bids. Owner will furnish evidence of such exemption to successful bidder, if necessary, for use in purchasing materials to be incorporated into the work. Owner's exemption does not apply to construction supplies, tools, machinery, equipment, or other property purchased or leased by successful bidder, or to materials not incorporated into the work.

107.31 Emergencies

In an emergency affecting the safety or protection of persons or the work or the site or property adjacent thereto, the Contractor is obligated to act to prevent threatened damage, injury, or loss. The Contractor shall give the Department prompt written notice if he or she believes that any significant changes in the work or variations from the contract documents have been caused thereby or are required as a result thereof. If the Department determines that a change in the contract documents is required because of any action taken by the Contractor in response to such an emergency, an equitable adjustment to the contract price or contract times will be made and the contract amended according to the provisions of Article 104.02.

**SECTION 108
PROSECUTION AND PROGRESS**

108.01 Subcontracting

The Contractor shall not subcontract, sell, transfer, assign, or otherwise dispose of the contract or any portion thereof, or of his or her right, title, or interest therein, without written consent of the Department. Notwithstanding consent to subcontract issued by the Department, the Contractor shall perform with the Contractor's own organization, work amounting to not less than 50 percent (50%) of the total contract cost, and with materials purchased or produced by the Contractor. Items designated in the contract as "specialty items" may be performed by subcontract and the cost of any such specialty items so performed by subcontract may be deducted from the total cost before computing the amount of work required to be performed by the Contractor with his or her own organization. "Specialty items" will be those items so designated on the construction plans or in the contract documents.

Upon the request of the Department, the Contractor shall submit to the Department a list of the subcontractors, suppliers, individuals, or entities that will perform work or labor for or render services or supplies to the Contractor in an amount in excess of ten percent (10%) of the contract price. The Department's acceptance of such list, either in writing, or by failing to make written objection thereto, may be revoked at any time on the basis of reasonable objection after due investigation. In order to conduct such investigation, the Department may request the Contractor to provide proof that any subcontractor, supplier, individual or entity has the experience, ability, and equipment the work requires.

If the Department, after due investigation, has reasonable objection to any subcontractor, supplier, individual, or entity, the Department may request the Contractor to submit a replacement. If such replacement has an effect on the contract price or contract times, the contract documents may require modification. The need for such modifications will be evaluated by the Department and, if necessary, will be made in accordance with Article 104.02. The Contractor shall not otherwise substitute, delete, or add to the accepted list of subcontractors, suppliers, individuals, or entities without written approval of the Department.

During performance of the work, the Department may order the Contractor to remove a subcontractor who, in the opinion of the Engineer, does not perform satisfactory work. The Contractor shall comply at once and shall not employ the subcontractor for any further work under this contract. Should the Contractor fail to remove such subcontractor as required above, or fail to furnish a suitable replacement subcontractor or suitable and sufficient personnel for the proper prosecution of the work, the Department may suspend the work by written notice, in accordance with Article 108.10, until such orders are complied with.

The Contractor shall be fully responsible to the Department for all acts and omissions of the subcontractors, suppliers, individuals, or entities that performing work or labor for or rendering services or supplies to the Contractor, just as the Contractor is responsible for the Contractor's own acts and omissions. Nothing in the contract documents shall create, for the benefit of any subcontractor, supplier, or any other individual or entity, any contractual relationship between the Department and any such subcontractor, supplier, or other individual or entity, nor any obligation on the part of the Department to pay or to see to the payment of any moneys due any such subcontractor, supplier, or any other individual or entity, except as may be required by laws and regulations.

For each subcontract, the Contractor shall submit to the Department a certification that a subcontract agreement exists in writing, that the subcontract incorporates by reference the terms and conditions of this contract, and that the subcontract incorporates fully therein the provisions related to employment practices contained in the contract documents. The Contractor shall permit the Department or State or Federal representatives to examine the

subcontract agreements upon notice. No subcontracts shall in any case release the Contractor or his or her surety of liability or any portion thereof under the contract and contract security.

The Contractor shall be solely responsible for scheduling and coordinating the work of subcontractors, suppliers, and other individuals or entities performing or furnishing any of the work under a direct or indirect contract with the Contractor. The Contractor shall require all subcontractors, suppliers, and such other individuals or entities performing or furnishing any of the work to communicate with the Department through the Contractor. The Contractor's superintendent shall be on the site at all times when any subcontract work is being performed.

108.02 Progress Schedule

After the award of the contract and prior to starting work, and within ten (10) days after the effective date of the agreement, the Contractor shall submit to the Department for timely review:

- (1) Project Schedule. The Contractor shall submit a preliminary project schedule which shall show the proposed sequence of work and indicating the times for starting and completing the various items of work, including any milestones specified in the contract documents, according to the contract times stated in the agreement. This schedule shall be used as a basis for establishing the controlling item of construction activities during the performance of the work and for checking progress of the work. The controlling item shall be defined as the item which must be completed either partially or completely to permit continuation of progress on the work. It shall be the responsibility of the Contractor to show the intended rate of production for each controlling item listed on the schedule during the period that such item is controlling.
- (2) Schedule of Submittals. The Contractor shall submit a preliminary schedule of submittals which shall show any submittals required to support the performance of the work and the time requirements associated with the review and approval or acceptance of such submittals.
- (3) Schedule of Values. The Contractor shall submit a preliminary schedule of values that contains values for the entire work, including quantities and prices of items which, when added together, equal the contract price and that subdivides the work into component parts in sufficient detail to serve as the basis for progress payments during performance of the work (i.e., basis of bid form).

Unless otherwise specified in the contract documents, at least one week prior to the start of work, a preconstruction conference, as described in Article 108.03, attended by the Department, Contractor, Engineer, and others, as appropriate, shall be held, among other reasons, to review, for acceptability, as provided below, the schedules described above. The Contractor shall be responsible for scheduling such conference and for notifying the Department, Engineer, and others as appropriate of the conference at least one week prior to the scheduled date of such conference. After such conference, the Contractor shall have an additional ten days to make corrections and adjustments and to complete and resubmit the schedules. Payments may be withheld until satisfactory schedules have been submitted to and approved by the Department.

- (4) Acceptability of Progress Schedule. The Contractor's progress schedule will be acceptable to the Department if it provides an orderly progression of the work to completion within the contract times. Such acceptance will not impose on the Department responsibility for the progress schedule, for sequencing, scheduling, or performing the work, nor interfere with or relieve the Contractor from the Contractor's full responsibility therefor.
- (5) Acceptability of Schedule of Submittals. The Contractor's schedule of submittals will be acceptable to the Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
- (6) Acceptability of Schedule of Values. The Contractor's schedule of values will be acceptable to the Engineer as to form and substance if it provides a reasonable allocation of the contract price to component parts of the work.

During performance of the work, the Contractor shall adhere to the approved schedules. The Contractor shall confer with the Department at regular intervals and at progress meetings, as described in Article 108.08, in regard to the prosecution of the work according to the approved schedules. Such schedules may be adjusted from time to time, as provided below.

The Contractor shall submit to the Department, for review and acceptance, proposed adjustments to the approved schedules that will not result in changes to the contract price or contract times. Such adjustments shall comply

with all applicable provisions of the contract documents. If a proposed adjustment to the approved schedules has an effect on the contract price or contract times, the contract documents may require modification. The need for such modifications will be evaluated by the Department and, if necessary, will be made in accordance with Article 104.02.

108.03 Preconstruction Conference

Unless otherwise specified in the contract documents, at least one week prior to the start of work, a preconstruction conference attended by the Department, 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 described in Article 108.02, procedures for handling samples, shop, working, and layout drawings and other submittals, processing applications for payment, and maintaining required records. The Contractor shall be responsible for scheduling the preconstruction conference and for notifying the Department, Engineer, and others, as appropriate, of the preconstruction conference at least one week prior to the scheduled date of such conference.

At the preconstruction conference, the Department and Contractor each shall confirm or 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 instructions, receive information, render decisions relative to the contract, and otherwise act on behalf of each respective party. At this conference, the Contractor shall also designate, in writing, the superintendent referred to in Article 105.07, who shall be on the work at all times.

108.04 Prosecution of the Work

The Contractor shall begin the work to be performed under the contract as soon as possible following the effective date of the agreement or, if a notice to proceed is given, as soon as possible following the issuance of such notice to proceed. The work shall begin no later than thirty days after the effective date of the agreement or, if a notice to proceed is given, no later than the day indicated in the notice to proceed. A notice to proceed may be given at any time after the effective date of the agreement. In no event shall the work begin later than the thirtieth day after the effective date of the agreement or, if a notice to proceed is given, after the day indicated in the notice to proceed unless otherwise provided for in the contract or otherwise approved by the Department. No work shall be performed under the contract documents prior to the effective date of agreement.

The work shall be prosecuted in such a manner and with such a supply of materials, equipment, and labor as is considered necessary to ensure its completion according to the contract times specified in the contract documents. Once the work begins, the Contractor shall work continuously until the work has been substantially completed, unless otherwise directed by the Department. The Contractor shall notify the Department at least 24 hours in advance of either discontinuing or resuming construction activities.

108.05 Working Days

When the contract provides a specified number of working days, the charging of working days will start when the Contractor begins actual performance of the work, and in no case later than 30 days after the effective date of the agreement, unless otherwise provided for in the contract or otherwise approved by the Department.

A working day shall be defined as any calendar day inclusive, except Saturdays, Sundays, or legal holidays observed by the Contractor's entire work force in Indiana. The length of a working day will be determined by the Department from the number of working hours established by actual job practice by the Contractor for the current controlling item, except not less than eight hours will be considered in the determination.

A full working day will be charged for any day described in the foregoing on which conditions are such that the Contractor could be expected to do a full day's work on the controlling item. A full working day will be charged on days when the Contractor could be working on a controlling item, but elects not to work, or elects to work elsewhere.

No allowance will be made for delay or suspension of the work due to the fault of the Contractor.

The Engineer will determine which days are workable. One copy of the "Weekly Working Days Report of the Engineer" will be mailed to the Contractor on a weekly basis. Any disagreement with the working day charges stated in such report must be filed in writing with the Department within seven days of receipt of such report giving detailed reasons for the disagreement. The receipt of such report by the Department shall be, for purposes of the contract, deemed to occur three days after the date of such report, as indicated on the report. The final resolution of such disagreement will be made by the Department. By not filing a detailed disagreement within the seven day

period, the Contractor will be deemed to have accepted the report as correct and no further challenge will be allowed.

The basis for charging working days shall be as follows.

- (a) A partial working day of one-quarter, one-half, or three-quarters will be charged under the following conditions.
 - (1) When weather conditions do not permit the completion of a full day's work on the controlling item.
 - (2) When job conditions due to recent weather do not permit full efficiency of the men or equipment which are working on the controlling item.
 - (3) A shortage of help which is beyond the Contractor's control prevents reasonable progress on a controlling item.
 - (4) When any condition over which the Contractor has no control prevents completing a full day's production on the controlling item.
- (b) No working day will be charged under the following conditions.
 - (1) When adverse weather prevents work on the controlling item.
 - (2) When job conditions due to recent weather prevent work on the controlling item.
 - (3) When work has been suspended by an act or an omission of the Department.
 - (4) When strikes, lock-outs, extraordinary delays caused by utility work, extraordinary delays in transportation, or inability to procure critical materials suspend work on the controlling item, as long as these delays are not due to any fault of the Contractor.
 - (5) When any condition over which the Contractor has no control causes suspension of work on the controlling item.

108.06 Completion Date and Completion Date Plus Working Days

When the contract provides a specified completion date or a specified completion date plus working days, such terms shall be interpreted as follows.

- (a) Completion Date. When a completion date is specified, the Contractor shall complete all work subject to the date on or before the specified date.
- (b) Completion Date Plus Working Days. When a completion date plus working days is specified, the Contractor shall complete the major items of work as specified in the contract, on or before the completion date. The Contractor shall complete the miscellaneous items of work within the specified number of working days after the completion date.

108.07 Labor, Methods, and Equipment

The Contractor shall, at all times, employ and provide sufficient labor, tools, equipment, and other incidental items for prosecuting the work to full completion in the manner and time required by the contract. The Contractor shall assume full responsibility for all labor, tools, equipment, and other incidental items employed and provided on the work.

All workers shall have sufficient skills and experience to perform properly the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform all work properly and satisfactorily.

Any person employed by the Contractor or by any subcontractor who, in the opinion of the Engineer, does not perform work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of the Department, be removed at once by the Contractor or subcontractor employing such person, and shall not be employed again in any portion of the work without the approval of the Department.

Should the Contractor fail to remove such person or persons as required above, or fail to furnish suitable and sufficient personnel for the proper prosecution of the work, the Department may suspend the work by written notice until such orders are complied with.

All equipment which is proposed to be used on the work shall be of sufficient size and in such mechanical condition as to meet requirements of the work and to produce a satisfactory quality of work. Equipment used on any portion of the project shall be such that no damage to the site, adjacent property, or other properties will result from its use.

The Contractor shall assume full responsibility for the equipment, means, methods, techniques, sequences, and procedures used in accomplishing the construction. Unless the methods and equipment to be used by the Contractor in accomplishing the construction are prescribed in the contract, the Contractor is free to use any methods or equipment that can be demonstrated to the Department as satisfactory to accomplish the contract work in conformity with the requirements of the contract.

When the contract specifies that the construction be performed by the use of certain methods and equipment, such methods and equipment shall be used unless others are authorized by the Department. If the Contractor desires to use a method or type of equipment other than specified in the contract, he or she may request authority from the Department to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed to be used and an explanation of the reasons for desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing construction work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, the Department determines that the work produced does not meet contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining construction with the specified methods and equipment. The Contractor shall remove the deficient work and replace it with work of specified quality, or take such other corrective action as the Department may direct. No change will be made in basis of payment for the construction items involved nor in contract time as a result of authorizing a change in methods or equipment under these contract documents.

108.08 Progress Meetings

Unless otherwise specified in the contract documents, the Contractor shall confer with the Department, Engineer, and others, as appropriate, at regularly scheduled progress meetings in regard to the prosecution of the work according to the schedules described in Article 108.02. Such progress meetings shall be held on site on a weekly basis. The Contractor shall be responsible for scheduling such progress meetings and for notifying the Department, and others, as appropriate, of the schedule for such meetings at least one week prior to the scheduled date of the first such meeting.

The Contractor's superintendent shall attend the progress meetings and shall review with the Department, Engineer, and others, as appropriate, items such as completed and planned work, soil and material stockpile locations, material and equipment storage locations, construction access locations, use of site, change orders, field orders, items requiring written interpretation or clarification, items requiring the Department's approval, payment requests, and any other concerns affecting the prosecution of the work.

108.09 Certified Payroll Reports

For all projects with contracts valued at \$500,000 or more, the Contractor and each subcontractor shall submit weekly, in person, by mail, or electronically, a certified payroll report to the Department, utilizing the Federal form known as Form WH-347. Such certified payroll reports shall identify the classification (i.e., trade and title) of all operators, laborers, mechanics, and other workers performing work on the project (e.g., electrician, journeyman; electrician, apprentice). The full social security number and home address of each worker performing work on the project shall not be included on the certified payroll reports; instead, the certified payroll reports shall include an identification number for each worker (e.g., the last four digits of the employee's social security number). Such certified payroll reports shall consist of a complete record of all operators, laborers, mechanics, and other workers performing work on the project. Each certified payroll report shall be accompanied by an affidavit signed by the Contractor or subcontractor which avers that: (1) such report is true and accurate; (2) the hourly rate paid to each worker performing work on the project is accurately shown on the report; and, (3) the Contractor or subcontractor is aware that filing a certified payroll report that he or she knows to be false is a Class B misdemeanor. In the event the Contractor or any subcontractor uses independent contractors to perform work on the project, such independent contractors must be included on the certified payroll reports. The same information as is required for other operators, laborers, mechanics, and other workers shall be provided for independent contractors performing work on the project.

If it so elects, the Department may withhold any and all payments to the Contractor for work performed by the Contractor if the Contractor fails to submit its certified payroll reports in a timely manner until said certified payroll

reports are submitted to the Department. If it so elects, the Department may also withhold any and all payments to any subcontractor for work performed by such subcontractor if such subcontractor fails to submit its certified payroll reports in a timely manner until said certified payroll reports are submitted to the Department. The Department shall not withhold payments to the Contractor for work performed by the Contractor or for work performed by subcontractors who have submitted their certified payroll reports in a timely manner because one or more other subcontractors have failed to submit their certified payroll reports in a timely manner.

108.10 Suspension of Work

The Department shall have authority to suspend the work, in whole or in part, when unsuitable severe weather conditions or other conditions at the site make for circumstances beyond the Contractor's control, which are unfavorable for the satisfactory performance of the work, and when the Contractor does not comply with the contract or orders of the Engineer. Orders to suspend or resume work shall be complied with immediately. If it becomes necessary to stop work for an indefinite period of time, the Contractor shall store all materials in such manner that they will not unreasonably encumber the site or become damaged in any way, take every precaution to prevent damage or deterioration of the work performed, and install temporary structures, including suitable soil erosion and sediment control devices, where necessary. The Contractor shall not suspend work without written authority from the Department.

The period of suspension shall not count against the time of performance established in the contract unless the suspension is ordered due to the acts or omissions of the Contractor. Extensions of time will be evaluated according to Article 108.11. Except as provided herein below for suspension of an unreasonable duration, the Contractor shall not be paid additional compensation on account of any suspension ordered pursuant to this Article.

If the performance of all or any portion of the work is suspended or delayed by the Department in writing for an unreasonable period of time and the Contractor believes that additional compensation or an extension of the contract times is due as a result of such suspension or delay, the Contractor shall submit to the Department, in writing, a request for adjustment in the contract price and/or contract times within seven days of receipt of the notice to resume work issued by the Department. The request shall set forth the reasons and support for such adjustment.

Upon receipt of such request by the Department, the Engineer will evaluate the Contractor's request. If the Engineer agrees that the period of suspension was unreasonable and that contract price and/or contract times should be adjusted as a result of such suspension, the Department will make an adjustment, excluding profit, and modify the contract in writing accordingly. In no case shall a suspension of less than seven days be considered unreasonable. No adjustment will be made for a suspension of any duration if the suspension was caused by the acts or omissions of the Contractor, his or her subcontractors or suppliers, or the weather. The Department will notify the Contractor of his or her determination whether or not an adjustment of the contract is warranted.

No contract adjustment will be allowed unless the Contractor has submitted a request for adjustment within the time prescribed. No contract adjustment will be allowed under this Article to the extent that performance would have been suspended or delayed by any other cause, or for which an adjustment is provided for or excluded under any other term or condition of this contract.

108.11 Determination and Extension of Contract Times

Determination and extension of contract times shall be as follows.

- (a) Working Days. When the contract provides a specified number of working days, it is understood that completion of the work within the specified number of working days is an essential part of the contract. The Contractor's plea that insufficient time was specified is not a valid reason for extension of time.

A request for an extension of the contract times may be initiated by either the Department or the Contractor. If the Department finds that the quantities of work done, or to be done, are in excess of the estimated quantities by an amount sufficient to warrant additional time, it may grant an extension of the contract times for completion which appears reasonable and proper. The extended number of working days for completion shall then be considered as in effect the same as if it were the original time for completion.

- (b) Completion Date. When a completion date is specified, it is understood that time is of the essence of the contract and that completion of the work by that date is an essential part of the contract. The Contractor's plea that insufficient time was specified is not a valid reason for extension of the contract times.

In the event of delay in the work beyond the reasonable control of the Contractor resulting from:

- (1) Conduct or lack of conduct by the Department or its consultants, representatives, officers, agents, or employees; or delay by the Department in making the site available; or in furnishing any items required to be furnished to the Contractor by the Department;
- (2) Extraordinary conditions of weather for the area and time of year with the understanding that the completion time contemplated by this contract anticipates a certain number of lost days due to normal weather conditions, therefore only unusual or extreme weather conditions for the time of year will be considered as justification for a delay in completion of the work;
- (3) War, national conflicts, terrorist acts, or priorities arising therefrom, including restrictions of the ability to procure critical materials;
- (4) Fires;
- (5) Epidemics;
- (6) Strikes or other labor disruptions extending in duration more than five calendar days;
- (7) Utility or railroad adjustments;
- (8) Material delivery delay caused by strikes, lockouts, wrecks, or freight embargoes;
- (9) Subject to compliance with the requirements of Article 105.09, the operations of other contractors working within the limits of the contractor coordinated contracts; or,
- (10) Cataclysmic events.

And for no other cause or causes, the Contractor shall be entitled to a reasonable extension of the contract times only by the amount of time the Contractor is actually delayed thereby in the performance of the work, provided notice requesting an adjustment to the completion date is given as herein provided. Contractor shall not be entitled to any extension of the contract times unless the Contractor notifies the Department in writing within 21 days of the commencement of each such delay; requests an adjustment within 21 days of the conclusion of such delay; and failure of the Contractor to request an adjustment in conformity with this Article shall be deemed a waiver of the same. Interim completion dates incorporated into a contract subject to a final completion date, and completion date plus working days contracts shall be governed by these provisions.

The Contractor recognizes it is imperative that the work proceed uninterrupted and shall endeavor to prevent and shall promptly cure any work stoppage caused by any labor or jurisdictional disputes arising out of the assignment of work to be performed by the Contractor or its subcontractors or subcontractors of any tier.

After the Contractor has filed a request for an extension of the contract times, the Department will notify the Contractor, in writing, whether or not such extension will be approved. The Engineer will consider how timely the Contractor prosecuted the work up to the point of the delay according to the progress schedule approved according to Article 108.02 when considering the request. No extension of the contract times will be granted unless the delay in completion of the work was caused specifically by a delay in a portion of the work that was on the critical path of the progress schedule, and that was otherwise on schedule. If approved, the extended date for completion shall then be considered as in effect the same as if it were the original date for completion.

Regardless of whether the contract is governed by (a) or (b) of this Article, extensions of the contract times granted for reasons or events beyond the reasonable control of the Department shall be the exclusive relief provided, and no additional compensation or claim for damages will be paid or awarded under this or any other provision of the Contract unless the allowance of additional compensation or relief from damages is expressly allowed by a provision of the contract. An extension of the contract times will be granted only by a change order or a work change directive issued by the Engineer.

108.12 Failure to Complete the Work on Time

Time is of the essence to the contract. Should the Contractor fail to complete the work within the working days stipulated in the contract or on or before the completion date stipulated in the contract or within such extended time as may have been allowed, the Contractor shall be liable and shall pay to the Department the amount shown in the following schedule of deductions, not as a penalty, but as liquidated damages, for each day of overrun in the contract times or such extended times as may have been allowed. The liquidated damages appearing in the schedule of deductions are approximate, due to the impracticality of calculating and proving actual delay costs. Consequently, the schedule of deductions establishes the cost of delay to account for administration, engineering, inspection, and supervision during periods of extended and delayed performance. The costs of delay represented by this schedule are understood to be a fair and reasonable estimate of the costs that will be borne by the Department during extended and delayed performance by the Contractor of the work, remaining incidental work, correction of work improperly completed, or repair of work damaged as a result of the Contractor. The liquidated damage amount specified will accrue and be assessed until final completion of the total work of the contract even though the work may be substantially complete. The Department will deduct these liquidated damages from any monies due or to become due to the Contractor from the Department.

Schedule of Deductions for Each Day of Overrun in Contract Times			
Original Contract Amount		Daily Charges	
From More Than	To and Including	Calendar Day	Working Day
\$ 0	\$ 100,000	\$ 475	\$ 675
\$ 100,000	\$ 500,000	\$ 750	\$ 1,050
\$ 500,000	\$ 1,000,000	\$ 1,025	\$ 1,425
\$ 1,000,000	And over	\$ 1,275	\$ 1,725

When a completion date is specified, the daily charge will be made for every day shown on the calendar beyond the specified completion date. When the time limit is specified as working days, the daily charge will be made for each additional working day, computed as specified in Article 108.05. Interim completion dates incorporated into a contract subject to a final completion date shall also be governed by these provisions.

108.13 Default on Contract

If the Contractor fails to begin the work under contract within the time specified, or fails to perform the work with sufficient workers and equipment or with sufficient materials to ensure the completion of said work within the specified time, or shall perform the work unsuitably, as determined by the Engineer, or shall neglect or refuse to remove materials or perform anew such work as shall be rejected as defective and unsuitable, or shall discontinue the prosecution of the work, or if the Contractor shall become insolvent or be declared bankrupt, or shall commit any act of bankruptcy, or insolvency, or shall make an assignment for the benefit of creditors, or from any other cause whatsoever shall not carry on the work in a manner consistent with the contract documents or otherwise approved by the Engineer, the Engineer will give notice, in writing, to the Contractor and the Contractor's surety, of such delinquency, said notice to specify the corrective measures required. If the Contractor, within a period of ten (10) days after said notice, shall not proceed according to said notice, the Department shall, upon written certification from the Engineer of the fact of such delinquency and the Contractor's failure to comply with said notice, have full power and authority to forfeit the rights of the Contractor and, at its option, to call upon the surety to complete the work according to the terms of the contract, or it may take over the work, including all materials and equipment on the ground as may be suitable and acceptable, and may complete the work with its own forces, or use such other methods as, in its opinion, shall be required for the completion of said contract in an acceptable manner.

When the Department calls upon the surety to complete, the surety shall enter upon the premises and take possession of all materials, tools, and appliances for the purpose of completing the work under the contract and employ by contract or otherwise any person or persons satisfactory to the Department to finish the work without termination of the contract. Such employment shall not relieve the surety of its obligations under the contract and the contract security. Payments on estimates covering work subsequent to the transfer shall be made to the extent permitted under law to the surety or its agent without any right of the Contractor to make any claim.

The Contractor shall bear any extra expenses incurred by the Department in completing the work, including all increased cost for completing the work, and all damages sustained, or which may be sustained, by the Department by reason of such breach refusal, neglect, failure, or discontinuance of work by the Contractor. After

all of the work contemplated by the contract has been completed, the Engineer will calculate the total expenses and damages for the completed work. If the total expenses and damages are less than any unpaid balance due the Contractor, the excess will be paid by the Department to the surety or the Contractor. If the total expenses and damages exceed the unpaid balance, the Contractor and the surety shall be jointly and severally liable to the Department and shall pay the difference to the Department on demand.

If a notice of termination for default has been issued and it is later determined for any reason that the Contractor was not in default, the rights and obligations of the parties shall be the same as if the notice of termination had been issued pursuant to a termination for public convenience according to the provisions of Article 108.14.

108.14 Termination of the Contractor's Responsibility

Whenever the improvements called for by the contract has been completely performed on the part of the Contractor and all parts of the work have been approved by the Engineer and accepted by the Department according to the contract, and the final payment made, the Contractor's obligations shall then be considered fulfilled, except those obligations which by their nature extend beyond the completion of work including, but not limited to, those described in Articles 105.19, 107.23, and 107.27.

108.15 Termination for Public Convenience

The Department may, by written order, terminate the contract or any portion thereof after determining that, for reasons beyond either Department or Contractor control, the Contractor is prevented from proceeding with or completing the work as originally contracted for, and that termination would, therefore, be in the public interest. Such reasons for termination may include, but need not be necessarily limited to, Executive Orders relating to prosecution of war or national defense, national emergency which creates a serious shortage of materials, orders from duly constituted authorities relating to energy conservation, and restraining orders or injunctions obtained by third-party citizen action resulting from national or local environmental protection laws or where the issuance of such order or injunction is primarily caused by acts or omissions of persons or agencies other than the Contractor.

When a contract, or any portion thereof, is definitely terminated or cancelled, and the Contractor released before all items of work included in his or her contract have been completed, payment will be made for the actual number of units of items of work completed at contract unit prices, or as specified in Article 109.07 for partially completed items, and no claims for loss of anticipated profits will be considered. Reimbursement for organization of the work and moving equipment to and from the job will be considered where the volume of the work completed is too small to compensate the Contractor for these expenses under the contract unit prices, the intent being that an equitable settlement will be made with the Contractor.

Acceptable materials, obtained by the Contractor for the work, that have been inspected, tested and accepted by the Engineer, and that are not incorporated in the work may, at the option of the Engineer, be purchased from the Contractor at actual costs as shown by receipted bills and actual cost records at such points of delivery as may be designated by the Engineer.

Termination of a contract, as stated above, will not relieve the Contractor or his or her surety of the responsibility of replacing defective work as required by the contract.

SECTION 109 MEASUREMENT AND PAYMENT

109.01 Measurement of Quantities

Completed work, which is to be measured for payment, will be measured by the Contractor and Engineer according to the United States standard measures. The units of measure shall be English and shall correspond to the units in the contract.

All measurements for pay lengths will be made linearly unless otherwise specified in the contract documents.

Longitudinal measurements for pay areas will be made linearly along the actual surface of the area. For transverse measurements for pay areas, the dimensions used in calculating the pay area shall be the exact horizontal dimensions shown on the plans or the dimensions ordered in writing by the Department. No deduction will be made for an interruption in a pay area having an area of nine square feet or less.

Longitudinal and transverse measurements for pay volumes will be made along the actual surface of the volume. For depth measurements for pay volumes, the dimensions used in calculating the pay volume shall be the exact vertical dimensions shown on the plans or the dimensions ordered in writing by the Department. No deduction will be made for an interruption in a pay volume having a surface area of nine square feet or less.

All measurements for weight shall be from scales meeting the requirements of the State of Indiana's Weights, Measures, and Metrology Program. The Contractor shall provide accurate weights of materials delivered to the site for incorporation into the work, whether temporary or permanent, for which the basis of payment is by weight. These weights shall be documented on delivery tickets which shall identify the source of the material, type of material, the date and time the material was loaded, the contract number, the net weight, the tare weight when applicable, and the identification of the transporting vehicle.

The Department may conduct random, independent vehicle weight checks for material sources using a qualified inspector.

Should the vehicle weight check for a source result in the net weight of material on the vehicle exceeding the net weight of material shown on the delivery ticket by 0.50 percent (0.50%) or more, the Department will document the independent vehicle weight check and immediately furnish a copy of the results to the Contractor. No adjustment in pay quantity will be made.

Should the vehicle weight check for a source result in the net weight of material shown on the delivery ticket exceeding the net weight of material on the vehicle by 0.50 percent (0.50%) or more, the Department will document the independent vehicle weight check and immediately furnish a copy of the results to the Contractor. The Department will adjust the net weight shown on the delivery ticket to the checked delivered net weight as determined by the independent vehicle weight check.

The Department will also adjust the method of measurement for subsequent deliveries from the source based on the independent weight check. The net weight of all materials delivered to all contracts from this source, for which the basis of payment is by weight, will be adjusted by applying a correction factor "A" as determined by the following formula:

$$A = 1.0 - \left(\frac{B-C}{B}\right); \text{Where: } A \leq 1.0 \text{ and } \left(\frac{B-C}{B}\right) > 0.50\%$$

Where:

A = Adjustment factor

B = Net weight shown on delivery ticket

C = Net weight determined from independent weight check

The adjustment factor will be applied as follows:

$$\text{Adjusted Net Weight} = A \times \text{Delivery Ticket Net Weight}$$

The adjustment factor will be imposed until the cause of the deficient weight is identified and corrected by the Contractor to the satisfaction of the Department. If the cause of the deficient weight is not identified and corrected within seven days, the source shall cease delivery of all materials for which the basis of payment is by weight.

Should the Contractor elect to challenge the results of the independent weight check, the Department will continue to document the weight of material for which the adjustment factor would be applied. However, provided the Contractor furnishes the Department with written documentation that the source scale has been calibrated within seven days after the date of the independent weight check, adjustments in the weight of material paid for will not be applied unless the scale calibration demonstrates that the source scale was not within acceptable tolerances, as specified in the State of Indiana's Weights, Measures, and Metrology Program, and as regulated by the Indiana State Department of Health.

At the Contractor's option, the vehicle may be weighed on a second independent scale certified by the State of Indiana's Weights, Measures, and Metrology Program to verify the accuracy of the scale used for the independent weight check.

109.02 Determination of Contract Price

Where the contract documents specify 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 value of each pay item appearing on the basis of bid or basis of quote form, such values being determined by multiplying the unit price of each pay item by the estimated quantity of each pay item, such unit prices and estimated quantities appearing on such basis of bid or basis of quote form. The quantities of each pay item appearing on the basis of bid or basis of quote form are estimates prepared solely for the purposes of the comparison of bids, the establishment of pay item unit prices, and the determination of an initial contract price. Payment to the Contractor will be made for the actual quantities of work performed in accordance with the contract documents, the acceptance of such work and the determination of such quantities to be made by the Department in accordance with the contract documents, and the scheduled quantities may be increased, decreased, or omitted and the contract price adjusted as provided herein.

109.03 Scope of Payment

The Contractor shall receive and accept the compensation provided herein as full payment for performing all work specified, indicated, or contemplated in the contract documents; for furnishing all materials, labor, tools, and equipment necessary to complete the work; for all loss or damage arising out of the nature of the work and from the action of the elements; for any unforeseen difficulties or obstructions which may arise or be encountered during the prosecution of the work until its final acceptance by the Department; for all risks of every description connected with the prosecution of the work; for all expenses incurred by or in consequence of suspension or discontinuance of such prosecution of the work as herein described; for any infringement of patents, trademarks, or copyrights; and for completing the work in an acceptable manner according to the contract documents.

The payment of any partial payment prior to final acceptance of the work by the Department shall in no way constitute an acknowledgement of the acceptance of the work, nor in any way prejudice or affect the obligation of the Contractor, at his or her own expense, to repair, correct, renew, or replace any defects or imperfections in the construction or in the strength or quality of the materials used in or about the construction of the work under contract and its appurtenances, nor any damage due or attributable to such defects, which defects, imperfections, or damage shall have been discovered on or before the final inspection and acceptance of the work or thereafter, if so specified elsewhere in the contract documents. The Department shall be the sole judge of such defects, imperfections, or damage, and the Contractor shall be liable to the Department for failure to correct the same as provided herein.

109.04 Increased or Decreased Quantities

Whenever the quantity of any pay item as given in the proposal shall be increased or decreased, payment shall be made on the basis of the actual quantity of work performed at the unit price named in the proposed for such pay item, except as otherwise provided in Article 104.03, or in the detailed specifications for each item of work. The quantity of any pay item increased to complete extra work will not be paid for unless such extra work was performed in accordance with Article 109.05. Should any pay items contained in the proposal be found unnecessary for the proper completion of the work, the Department may, upon written order to the Contractor, eliminate such pay items from the contract and such action shall in no way invalidate the contract. When a Contractor is notified of the elimination of pay items, the Contractor will be reimbursed for actual work performed and all costs incurred, including mobilization of materials prior to said notification.

109.05 Payment for Extra Work

Should any extra work result from any of the changes described in Article 104.03, the Department will request from the Contractor a proposal to perform such extra work. Such proposal shall list each and every pay item required to complete such extra work. The proposal shall include a quantity and unit price for each and every pay item listed in the proposal and the proposal shall show the total increase in the contract price required to complete the extra work. Should the proposed extra work require an increase in the contract times, the proposal shall indicate the length of such increase.

Upon receipt, the Department will promptly review such proposal and either: decide to proceed with the extra work as proposed, or, return the proposal to the Contractor indicating in writing the Department's reasons for refusing to recommend performance of the extra work as proposed. In the latter case, the Contractor may make the necessary corrections and resubmit the proposal. An authorization to proceed with any extra work will be issued by the Department through the issuance of either a change order or a work change directive.

Extra work which results from any of the changes described in Article 104.03 shall not be started until authorization from the Department is received, which authorization shall state the items of work to be performed and the method of payment for each work item. Work performed without such order will not be paid for.

Extra work will be paid for at either established contract prices, a lump sum price, agreed unit prices, or on a force account basis.

- (a) Lump Sum Price or Agreed Unit Prices. When extra work is to be paid for at either a lump sum price or agreed unit prices, the lump sum or unit prices shall be agreed upon by the Contractor and the Department.
- (b) Force Account Basis. When extra work is to be paid for by force account, the basis for the force account shall be as follows.

- (1) Labor. For all labor and foremen in direct charge of the specific operations, the Contractor shall receive the actual normal rate of wage paid for each and every hour that said labor and foremen are actually engaged in such work.

The Contractor shall receive the actual costs paid to, or in behalf of, workers by reasons of subsistence and travel allowances, health and welfare benefits, pension fund benefits, or other benefits, when such amounts are required by collective bargaining agreement or other employment contract generally applicable to the classes of labor employed on the work.

An amount equal to 35 percent (35%) of the sum of the above items will also be paid to the Contractor.

- (2) Bond, Insurance, and Tax. For property damage, liability, and workmen’s compensation insurance premiums, unemployment insurance contributions, and social security taxes on the force account work, the Contractor shall receive the actual cost, to which ten percent (10%) will be added. The Contractor shall furnish satisfactory evidence of the rate or rates paid for such bond, insurance, and tax.
- (3) Materials. For materials accepted by the Department and used, the Contractor shall receive the actual cost of such materials delivered on the work, including transportation charges paid by the Contractor (exclusive of the machinery rentals as hereinafter set forth), to which cost fifteen percent (15%) will be added.

- (4) Equipment. Equipment used for extra work shall be authorized by the Department. The equipment shall be specifically described, be of suitable size and capacity for the work to be performed, and be in good operating condition. For such equipment, the Contractor will be paid as follows.

- a. Contractor Owned Equipment. Contractor owned equipment will be paid for by the hour using the applicable FHWA hourly rate from the “Equipment Watch Rental Rate Blue Book” (Blue Book) in effect when the force account begins. The FHWA hourly rate is calculated as follows.

$$\text{FHWA hourly rate} = (\text{monthly rate}/176) \times (\text{model year adj.}) \times (\text{Indiana adj.}) + \text{EOC}$$

Where:

EOC = Estimated Operating Costs per hour (from the Blue Book)

The time allowed will be the actual time the equipment is operating on the extra work. For the time required to move the equipment to and from the site of the extra work and any authorized idle (standby) time, payment will be made at the following hourly rate:

$$0.5 \times (\text{FHWA Hourly Rate} - \text{EOC})$$

All time allowed shall fall within the working hours authorized for the extra work.

The rates above include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs, overhaul, maintenance of any kind, depreciation, storage, overhead, profits, insurance, and all incidentals. The rates do not include labor.

The Contractor shall submit to the Department sufficient information for each piece of equipment and its attachments to enable the Department to determine the proper equipment category. If a

rate is not established in the Blue Book for a particular piece of equipment, the Department will establish a rate for that piece of equipment that is consistent with its cost and use in the industry.

- b. Rented Equipment. Whenever it is necessary for the Contractor to rent equipment to perform extra work, the rental and transportation costs of the equipment plus five percent (5%) for overhead will be paid. In no case shall the rental rates exceed those of established distributors or equipment rental agencies.
- (5) Miscellaneous. No additional allowance will be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided.
 - (6) Work Performed by an Approved Subcontractor. When extra work is performed by an approved subcontractor, the Contractor shall receive, as administrative costs, an amount equal to five percent of the total approved costs of such work with the minimum payment being \$100.
 - (7) Statements. No payment will be made for work performed on a force account basis until the Contractor has furnished the Department with itemized statements of the cost of such force account work. Statements shall be accompanied and supported by invoices for all materials used and transportation charges. However, if materials used on the force account work are not specifically purchased for such work but are taken from the Department's stock, then in lieu of the invoices, the Department shall furnish an affidavit certifying that such materials were taken from his or her stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

Itemized statements of the cost of force account work shall be detailed as follows.

- a. Name, classification, date, daily hours, total hours, rate, and extension for each laborer and foreman. Payrolls shall be submitted to substantiate actual wages paid if so requested by the Engineer.
- b. Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment.
- c. Quantities of materials, prices, and extensions.
- d. Transportation of materials.
- e. Cost of property damage, liability, and workmen's compensation insurance premiums, unemployment insurance contributions, and social security tax.

All statements of the costs of force account work shall be furnished to the Department not later than 60 days after the completion of such work. If the statement is not received within the specified time frame, all demands for payment for the extra work are waived and the Department is released from any and all such demands. It is the responsibility of the Contractor to ensure that all statements are received within the specified time regardless of the manner or method of delivery.

109.06 Expenses Incurred by the Department

Upon written request of the Department, the Contractor shall pay bills associated with the performance, observation, or inspection of the work which are the responsibility of the Department. The Contractor shall receive as administrative costs an amount equal to five percent (5%) of the first \$10,000 and one percent (1%) of any amount over \$10,000 of the total actual amount paid per bill with the minimum payment being \$100.

109.07 Payment for Items Omitted When Partially Completed

Should the Department cancel or alter any portion of the contract which results in the elimination or noncompletion of any portions of the work that have been partially completed, the Contractor will be allowed a fair and equitable amount covering all items of work incurred prior to the date of cancellation, alteration, or suspension of such work.

The Contractor shall be allowed a profit percentage on the materials used and the construction work actually performed at the rate specified in Article 109.05, but no allowance will be made for any change in anticipated profits. Acceptable materials ordered by the Contractor or delivered on the work prior to the date of its cancellation, alteration, or suspension by the Department will be purchased from the Contractor by the Department at the actual cost and shall thereupon become the property of the Department; or at the option of the

Department, the unused acceptable material shall remain the property of the Contractor, and the Contractor will be paid the actual cost including freight, unloading, and hauling costs less the actual salvage value.

109.08 Partial Payments

Partial payments will be made as follows.

- (1) Progress Payments. As the work proceeds, the Contractor may, on approximately a monthly basis, unless otherwise specified in the contract documents, submit to the Engineer, for review, an application for payment filled out and signed by the Contractor covering the work completed as of the date of such application and accompanied by such supporting documentation as is required by the Department to review such application. The schedule of values established in accordance with Article 108.02 shall serve as the basis for such applications for payment and such schedule shall be incorporated into such applications for payment in a form acceptable to Department.

The Engineer will, within ten days after receipt of each application for payment, either: accept the application for payment and subsequently process the application for payment; or, return the application to the Contractor indicating in writing the Engineer's reasons for refusing to recommend payment. In the latter case, the Contractor may make the necessary corrections and resubmit the application.

The Engineer's recommendation of any progress payment will constitute a representation by the Engineer, based on the Engineer's observations of the work; the Engineer's measurements of the quantity of work performed in accordance with the contract documents and the value of such work; and, the Engineer's review of the application for payment and the accompanying supporting documentation, that to the best of the Engineer's knowledge, information, and belief, the work has progressed to the point indicated, the quality of the work is generally in accordance with the contract documents, and the conditions precedent to the Contractor's being entitled to such payment appear to have been fulfilled.

The Engineer may refuse to recommend the whole or any part of any progress payment if, in the Engineer's opinion, it would be incorrect to make the representations stated above. The Engineer may also revise or revoke any such payment recommendation previously made to such extent as may be necessary, in the Engineer's opinion, to protect the Department from loss because subsequently discovered evidence or the results of subsequent inspections or tests reveal that the work is defective, the work has been damaged, requiring correction or replacement, the contract price has been reduced by change orders, the Department has been required to correct defective work or to complete work, or the Department has found the Contractor to be in default of contract as described in Article 108.13.

- (2) Material Allowances. At the discretion of the Engineer, payment may be made for materials prior to their use in the work, when satisfactory evidence is presented to the Engineer by the Contractor in an application for payment. Satisfactory evidence includes justification for the allowance (e.g., to expedite the work, meet project schedules, address regional or national material shortages), documentation of material and transportation costs, and evidence that such material is properly stored on the site or at a secure location acceptable and accessible to and agreed to in writing by the Department.

If payment on the basis of materials not incorporated into the work but delivered and suitably stored at the site or at another location agreed to in writing is so requested, the application for payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that the Department will be receiving the materials and equipment free of all liens and evidence that the materials are covered by appropriate property insurance or other arrangements to protect the Department's interest therein, all of which must be satisfactory to the Department.

Material allowances will be considered only for nonperishable materials when the cost of such materials, including transportation, exceeds \$10,000 and such materials are not expected to be utilized within 60 days of the request for the allowance. For contracts valued under \$500,000, the minimum \$10,000 requirement may be met by combining the principal (i.e., material) value of no more than two contract items. An exception to this two item limitation may be considered for any contract regardless of value for items in which materials (i.e., products) are similar, except for type and/or size.

Material allowances shall not exceed the contract value of the pay items in which the materials will be used and shall not include the cost of installation or related markups. Amounts paid by the Department for

material allowances will be deducted from payments due the Contractor as the material is used. Proof of payment for materials and transportation shall be furnished to the Department within 60 days of payment of the allowances or the amounts will be reclaimed by the Department.

30 days after the presentation of an application for partial payment to the Department by the Engineer, along with the Engineer's recommendation for payment, the full amount recommended for payment, less any retainage, will become due and upon becoming due will be paid by Department to Contractor. The amount of retainage withheld from each partial payment will be as stipulated in the contract and such retainage may be withheld by the Department until final acceptance of and final payment for the work.

The failure to perform any requirement, obligation, or term or condition of the contract by the Contractor shall be reason for the Department to withhold any additional part or all of any partial payment until the Department determines that compliance with the contract has been achieved. Furthermore, partial payments may be reduced or withheld if claims have been made against the Department on account of the Contractor's performance of the work or liens have been filed against the Department in connection with the work. If the Department refuses to make payment of the full payment amount requested by the Contractor, the Department will give the Contractor immediate written notice, stating the reasons for such action and will promptly pay the Contractor any amount remaining after deduction of the amount so withheld. The Department shall promptly pay the Contractor the amount so withheld, or any adjustment thereto agreed to by the Department and Contractor, when the Contractor remedies the reasons for such action.

The Contractor warrants and guarantees, at the time of submitting an application for payment, that title to all work, materials, and equipment covered by any application for payment, whether incorporated into the work or not, will pass to the Department no later than the time of payment free and clear of all liens. At the request of the Department, beginning with the first application for payment, each application shall include a Contractor's affidavit and waiver of lien, prepared in accordance with all applicable laws and regulations, stating that all previous payments received on account of the work have been applied on account to discharge the Contractor's legitimate obligations associated with the work and that title to all work, materials, and equipment covered by the payment applied for will pass to the Department free and clear of all liens at the time of payment.

109.09 Acceptance and Final Payment

Whenever all parts of the work specified or indicated in the contract documents have been completed by the Contractor; a definitive certificate of substantial completion has been issued by the Department; the work has undergone a final inspection and has been found, by the Engineer, to be satisfactorily completed; and, all other terms and conditions of the contract documents have been satisfied, the Contractor shall submit to the Department, for review, a final application for payment. The final application for payment shall show the total value of the work completed for which payment has not yet been received and shall be accompanied by such supporting documentation as is required by the Engineer to review such application.

If, on the basis of the Engineer's observation of the work during construction and final inspection; the Engineer's measurements of the quantity of work performed in accordance with the contract documents and the value of such work; and, the Engineer's review of the final application for payment and the accompanying supporting documentation, the Department is satisfied that the work has been completed and that the Contractor's other obligations under the contract documents have been fulfilled, the Department will, within ten days after receipt of the final application for payment, accept the final application for payment. Otherwise, the Department will return the final application for payment to the Contractor, indicating in writing the Department's reasons for refusing to recommend final payment, in which case the Contractor shall make the necessary corrections and resubmit the application.

The Department's recommendation of final payment will constitute a representation by the Department, based on the Department's observations of the work, that, to the best of the Department's knowledge, information, and belief, the work has been found to be satisfactorily completed, all applicable terms and conditions of the contract documents have been satisfied, and the conditions precedent to the Contractor's being entitled to such payment appear to have been fulfilled. The Department may refuse to recommend the whole or any part of a final payment if, in the Department's opinion, it would be incorrect to make the representations stated above. Additionally, all prior measurements of the quantity of work performed, upon which partial payments may have been made, are subject to correction in the final payment.

30 days after the presentation of the final application for payment to the Department, along with the Department's acceptance of such final application for payment, the full amount recommended for payment by the Department, less any sum the Department is entitled to deduct from the final application for payment, including, but not limited to, any liquidated damages, will become due and upon becoming due will be paid by the Department to the Contractor. At such time, any retainage withheld from previous partial payments in accordance with the terms of the contract and not yet paid to the Contractor will also become due and payable to the Contractor.

Final acceptance of the work occurs by the signature of an authorized representative of the Department on his or her written recommendation of final payment and the date of this signature shall constitute the final acceptance date. Final acceptance shall not constitute acceptance of any unauthorized or defective work or material and the Department shall not be barred from requiring the removal, replacement, repair, or disposal of any unauthorized or defective work or material or from recovering damages from any such work or material following final acceptance.

The Contractor warrants and guarantees, at the time of submitting the final application for payment, that title to all work, materials, and equipment covered by any application for payment, whether incorporated into the work or not, will pass to the Department no later than the time of payment free and clear of all liens. The final application for payment shall include a Contractor's affidavit and waiver of lien, prepared in accordance with all applicable laws and regulations, stating that all previous payments received on account of the work have been applied on account to discharge the Contractor's legitimate obligations associated with the work and that title to all work, materials, and equipment covered by the final payment will pass to the Department free and clear of all liens at the time of payment.

The making of final payment by the Department and acceptance of such final payment by the Contractor will constitute a release and waiver of any and all rights and privileges under the terms of the contract, unless otherwise specified in the contract documents, and shall relieve the Department from any and all claims or liabilities for anything done or furnished relative to the work.

109.10 Contract Claims

If the Contractor claims that additional payment is due under the terms of the contract or for any other reason arising out of the performance of the contract and the Department has not agreed, during the ordinary course of contract administration, that payment is due, the Contractor desiring to pursue additional compensation shall file a claim according to the requirements and procedures specified herein. If written notifications are not given, or if the Department is not afforded reasonable access by the Contractor to complete records of actual costs or additional time, or if a claim is not filed according to the procedures and within the time specified herein, then the claim is waived and the Department is released from any and all demands and claims. The fact that the Contractor has provided a proper notification, provided a properly filed claim, or provided the Department access to records of actual cost, shall not in any way be construed as proving or substantiating the validity of the claim. If the claim, after consideration by the Department, is found to have merit, the Department will make an equitable adjustment either in the amount of costs to be paid according to the basis of payment specified herein or in the time required for the work or both. If the Department finds the claim to be without merit, no adjustment will be made.

The Contractor may present a claim made by a subcontractor founded upon the terms of the contract or the actions and orders of the Department without being first required to make payment to the subcontractor provided: the Contractor makes written certification that the subcontractor is entitled to additional compensation; that the subcontractor will be paid in the event of a favorable resolution of the claim; and that the subcontract, releases, and waivers executed by the subcontractor do not bar payment to the subcontractor. The written certification may authorize the subcontractor to present the subcontractor claim directly to the Department. If such authorization is given, the Contractor need not participate in the verbal presentation of the claim. In any event, the submission shall include a copy of the subcontract, and any releases or waivers signed by the subcontractor in favor of the Contractor. The Contractor's interest in the subcontractor's claim shall not be assigned or otherwise disposed of, except as specified in Article 108.01.

- (a) Submission of Claim. All claims filed by the Contractor shall be in writing and in sufficient detail to enable the Department to ascertain the basis and amount of the claim. All claims shall be submitted to the Department. As a minimum, the following information must accompany each claim submitted.

- (1) A detailed factual statement of the claim for additional compensation and time, if any, providing all necessary dates, locations, and items of work affected by the claim.
- (2) The name of any Department official or employee involved in or knowledgeable about the claim.
- (3) The specific provisions of the contract which support the claim and a statement of the reasons why such provisions support the claim.
- (4) If the claim relates to a decision of the Department which the contract leaves to the Department's discretion or as to which the contract provides that the Department's decision is final, the Contractor shall set out in detail all facts supporting his or her position relating to the decision of the Department.
- (5) The identification of any documents and the substance of any oral communications that support the claim.
- (6) Copies of any identified documents, other than Department documents and documents previously furnished to the Department by the Contractor, that support the claim, including, but not limited to, manuals which are standard to the industry and used by the Contractor.
- (7) If an extension of time is sought, the specific days and dates for which it is sought, the specific reasons the Contractor believes a time extension should be granted, and the specific provisions of Article 108.11 under which it is sought.
- (8) If additional compensation is sought, the exact amount sought and a breakdown of that amount into direct labor, direct materials, direct equipment, direct jobsite overhead, and direct offsite overhead.
- (9) A statement, certified by a notary public, containing the following language:

*This statement is submitted by _____, _____ of _____, who
(name) (title) (company)
certifies under penalty of law that the claim for compensation and time, if any, made herein for work under this contract is a true statement, fully documented, and supported under the contract between the parties.*

*Dated: _____,
(month and day) (year)*

- (b) **Record Retention.** It is the responsibility of the Contractor to keep full and complete records of the costs and additional time incurred for any claim. The Contractor shall permit the Department to have access to those records and any other records as may be required by the Department to determine the facts or contentions involved in the claim. The Contractor shall retain those records according to Article 109.11.
- (c) **Audit.** All claims filed against the Department shall be subject to audit at any time following the filing of the claim. The audit may be performed by employees of the Department or by an auditor under contract with the Department. The audit may begin at any time during the life of the contract, or on twenty (20) days notice to the Contractor or its agents if an audit is to be commenced more than 60 days after the final payment date of the contract. The Contractor, subcontractors, or agents shall provide adequate facilities acceptable to the Department, for the audit during normal business hours. Failure of the Contractor or its agents to maintain and retain sufficient records to allow the auditors to verify all or any portion of the claim or to permit the auditor access to the books and records of the Contractor, subcontractors, or agents shall constitute a waiver of the claim and may bar any recovery of all or any portion thereunder.

The records subject to retention and audit are all books and records including but not limited to the following documents.

- (1) Daily time sheets and supervisor's daily reports.
- (2) Payroll records including tax, insurance, welfare, and benefits records.
- (3) Material invoices and requisitions.
- (4) Material cost distribution worksheet.
- (5) Equipment records (list of company equipment, rates, etc.).
- (6) Vendor's, rental agency's, subcontractor's, and agent's invoices.

- (7) Subcontractor's and agent's payment certificates.
 - (8) Cancelled checks (payroll and vendors).
 - (9) Job cost report.
 - (10) Job payroll ledger.
 - (11) General ledger.
 - (12) Cash disbursements journal.
 - (13) Financial statements for all years reflecting the operations on the contract involved.
 - (14) Depreciation records on all company equipment.
 - (15) If a source other than depreciation records is used to develop costs for the Contractor's internal purposes in establishing the actual costs of owning and operating the equipment, all such other source documents.
 - (16) All documents including pricing books and bid documents which relate to each and every claim together with all documents which support the amount of damages as to each claim.
 - (17) Worksheets used to prepare the claim establishing the cost components for items of the claim including but not limited to labor, benefits and insurance, materials, equipment, subcontractors, and all documents which establish the time periods involved, the hours for the individuals involved, and the rates of such individuals.
- (d) Time of Submission. Notice of the intent to file a claim shall be given to the Department within 21 days of the date of the Contractor's final application for payment prepared and submitted according to the provisions of Article 109.09. All claims submitted according to this Article shall be filed not later than six months after such date. Such six month period shall run from the date of the Contractor's final application for payment. The requirement of a general administrative claims cutoff time provided herein shall not constitute a waiver of any notification time requirements stated elsewhere in the contract documents.
- (e) Procedure. All claims shall be submitted to the Department. The Department will consider all information submitted with the claim and render a decision on the claim within 90 days after receipt. Claims not conforming to this Article will be returned without consideration. The Department may schedule a claim presentation meeting if, in the Department's judgment, such a meeting would aid in resolution of the claim, otherwise a decision will be made based on the claim documentation submitted.

Full compliance by the Contractor with the provisions specified in this Article is a contractual condition precedent to the Contractor's right to seek relief in the court. The Department's written decision shall be the final administrative action of the Department. Unless the Contractor files a claim for adjudication by the court within 60 days after the date of the Department's written decision, the failure to file shall constitute a release and waiver of the claim.

- (f) Basis of Payment. After resolution of a claim in favor of the Contractor, any adjustment in time required for the work will be made according to Article 108.11. Any adjustment in the costs to be paid will be made for direct labor, direct materials, direct equipment, direct jobsite overhead, direct offsite overhead, and other direct costs allowed by the resolution. Adjustments in costs will not be made for interest charges, loss of anticipated profit, lost opportunity, preparation of claim expenses, and other consequential indirect costs regardless of method of calculation.

The above basis of payment is an essential element of the contract and the claim cost recovery of the Contractor shall be so limited.

109.11 Contractor Record Retention

All books and records required to be maintained by the Contractor and subcontractor shall be maintained as provided for elsewhere in the contract. The Contractor and subcontractor shall cooperate fully with any audit and provide full access to all relevant materials. Failure by the Contractor or subcontractor to maintain the books, records, and supporting documents required by this Article shall establish a presumption in favor of the Department for the recovery of any funds paid by the Department under the contract for which adequate books and records are not available. The Contractor and subcontractor shall include the requirements of this Article in all subcontracts.

CONSTRUCTION PLANS
 FOR
SHOREWOOD FOREST SUBDIVISION
RAVINE RESTORATION & STORM SEWER IMPROVEMENTS

PORTER CO. DEPARTMENT OF DEVELOPMENT & STORM WATER MANAGEMENT
 NOVEMBER 5, 2024

The Construction Plans presented in Appendix A shall apply to and govern the project designated as **Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements**. Such Construction Plans supplement the specifications contained in the documents listed in the table below and, in case of conflict with any part or parts of said specifications, the Engineer shall determine which specifications shall take precedence and govern. The following hierarchy will be applied by the Engineer in resolving any conflict, error, ambiguity, or discrepancy in or between said specifications.

Specification	Issuing Agency	Adopted/Dated
Special Provisions for Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements	Porter Co. Department of Development & Storm Water Management	November 5, 2024
Technical Specifications for Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements	Porter Co. Department of Development & Storm Water Management	November 5, 2024
Construction Plans for Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements	Porter Co. Department of Development & Storm Water Management	November 5, 2024
General Specifications to the Construction & Maintenance Services Agreements	Porter Co. Department of Development & Storm Water Management	February 1, 2024

[THIS PAGE INTENTIONALLY LEFT BLANK]

TECHNICAL SPECIFICATIONS
 FOR
SHOREWOOD FOREST SUBDIVISION
RAVINE RESTORATION & STORM SEWER IMPROVEMENTS

PORTER CO. DEPARTMENT OF DEVELOPMENT & STORM WATER MANAGEMENT
 NOVEMBER 5, 2024

The following Technical Specifications shall apply to and govern the project designated as **Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements**. Such Technical Specifications supplement the specifications contained in the documents listed in the table below and, in case of conflict with any part or parts of said specifications, the Engineer shall determine which specifications shall take precedence and govern. The following hierarchy will be applied by the Engineer in resolving any conflict, error, ambiguity, or discrepancy in or between said specifications.

Specification	Issuing Agency	Adopted/Dated
Special Provisions for Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements	Porter Co. Department of Development & Storm Water Management	November 5, 2024
Technical Specifications for Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements	Porter Co. Department of Development & Storm Water Management	November 5, 2024
Construction Plans for Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements	Porter Co. Department of Development & Storm Water Management	November 5, 2024
General Specifications to the Construction & Maintenance Services Agreements	Porter Co. Department of Development & Storm Water Management	February 1, 2024

[THIS PAGE INTENTIONALLY LEFT BLANK]

TECHNICAL SPECIFICATIONS
FOR
RAVINE RESTORATION AND
STORM SEWER IMPROVEMENTS
FOR THE
PORTER COUNTY DEPARTMENT OF
DEVELOPMENT AND STORMWATER MANAGEMENT
SHOREWOOD FOREST SUBDIVISION

WESSLER ENGINEERING, INC.
MERRILLVILLE, INDIANA



Certified By:

A handwritten signature in black ink that reads "Michael E. Novotney".

Michael E. Novotney
Professional Engineer No. 11600602

NOVEMBER 2024

[THIS PAGE INTENTIONALLY LEFT BLANK]

TABLE OF CONTENTS

A. TECHNICAL SECTIONS OF THE SPECIFICATIONS

General Documents

00102 – Title Page	2 Pages
00110 – Table of Contents	2 Pages

DIVISION 1 - GENERAL REQUIREMENTS

Section 01010 – Summary of Work	4 Pages
Section 01050 – Construction Engineering	2 Pages
Section 01090 – Reference Standards	4 Pages
Section 01200 – Project Meetings	2 Pages
Section 01300 – Submittals	6 Pages
Section 01400 – Quality Assurance and Quality Control	6 Pages
Section 01500 – Construction Facilities and Temporary Controls	6 Pages
Section 01600 – Material and Equipment	2 Pages
Section 01710 – Cleaning	4 Pages
Section 01720 – Project Record Documents	4 Pages
Section 01731 – Cutting and Patching	4 Pages
Section 01990 – Pay Items	14 Pages

DIVISION 2 – SITE WORK

Section 02050 – Demolition	2 Pages
Section 02051 – Abandonment of Sewer Systems	8 Pages
Section 02101 – Stormwater Pollution Prevention and Erosion Control	12 Pages
Section 02102 – Material Handling and Spill Prevention Plan	10 Pages
Section 02110 – Site Clearing	4 Pages
Section 02111 – Recording of Construction Areas	4 Pages
Section 02200 – Earthwork	10 Pages
Section 02220 – Trenching Backfilling and Compaction for Utilities	10 Pages
Section 02535 – Pavement and Sidewalk Repair and Replacement	6 Pages
Section 02583 – Pavement Marking	4 Pages
Section 02720 – Storm Sewer Systems	10 Pages
Section 02902 – Landscaping for Utilities	4 Pages

-END-

[THIS PAGE INTENTIONALLY LEFT BLANK]

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01010 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 Summary

- A. The project consists of the installation of new stormwater infrastructure, including the installation of new storm sewers and new storm sewer structures, to replace severely deteriorated existing storm sewers along Shorewood Drive, between Kent Court and Pickwick Place, and the installation of a step pool stormwater conveyance system to stabilize and restore a severely eroded ravine located between 219 and 221 Shorewood Drive.

The project includes the removal and abandonment of existing storm sewers and the installation of new storm sewers, via open trench construction, including sawcutting and removing existing pavement, excavating, placing bedding and haunching, laying storm sewer pipe, placing initial backfill, placing final backfill, shaping, trimming and finishing, and cleaning, inspecting, and testing; and, the removal and abandonment of existing storm sewer structures and the installation of new storm sewer structures, via open trench construction, including sawcutting and removing existing pavement, excavating, bedding, setting precast reinforced concrete stormwater structures, placing adjusting rings and castings, backfilling, shaping, trimming, and finishing, and cleaning. It will also include pavement repair and pavement replacement on Shorewood Drive, Kent Court, and Pickwick Place, which will all be disturbed during the performance of the work. Excess excavated material generated during the performance of the work shall be disposed of off-site, at an appropriate and, if applicable, properly permitted off-site location.

The project also includes the installation of a step pool stormwater conveyance system, including excavating, placing filter bed mix material, placing riffle mix material, placing cascade, footer, and energy dissipation boulders, constructing riffle weirs, cascade weirs, aprons, runs, glides, and pools, blending with existing adjacent grade, and shaping, trimming, and finishing. It will also include the installation and removal of a temporary haul road to provide construction access to the ravine from Shorewood Drive, including the installation and removal of a temporary stone construction entrance. Excess material used to construct the temporary haul road generated shall be disposed of off-site, at an appropriate and, if applicable, properly permitted off-site location.

The project also includes other items incidental to the work, including clearing and tree removal, maintenance of traffic, erosion and sediment control, and the restoration of areas disturbed during the performance of the work. The work includes the carrying out of all duties and obligations and the furnishing of all labor, material, tools, and equipment, and other incidentals necessary or convenient to the successful completion of the project.

1.2 Contract

- A. Work shall be constructed under a Unit Price Contract.
- B. The Contractor shall not be allowed extra compensation by reason of any matter or thing concerning which the Contractor might have fully informed himself prior to the bidding. No verbal agreement, understandings or conversations with a representative or employee of the Owner or Engineer, either before or after the execution of this Contract, shall affect or modify the terms of obligations herein contained.

1.3 Completion

- A. Commence Work required by the Contract Documents as soon as possible following the issuance of the Notice to Proceed, but not later than the date indicated in such Notice to Proceed, and fully complete the Work within the Contract Times stated in the Contract Documents unless the Contract Times are extended otherwise in accordance with the Contract Documents.
- B. The Project will not be ready for substantial completion review until test and performance evaluations are completed, all Work is complete and ready for service and the site is clear of construction rubbish and debris.

1.4 Work by Others

- A. The Owner reserves the right to let other Contracts in connection with other portions of the project.

1.5 Items to be Provided by Owner

- A. Those Items shown on the Drawings and/or specified herein.

1.6 Coordination

- A. Coordinate Work with other Contractors. Refer to Article 105.09 of the General Specifications regarding Owner's right to contract with other Contractors for the performance of other work at the project Site which could be occurring during the same time as Work under this contract.
- B. Select order of Work and establish schedule or working hours for construction, subject to approval of Engineer which will assure orderly and expeditious progress of Work.
- C. Maintain existing service affected by Contractors' operations under the contract. Schedule construction to minimize interruptions to existing services, and inconveniences to others.

1.7 Rights of Access

- A. The Contractor agrees that representatives of the Engineer, Owner and regulatory agencies will have access to the Work wherever it is in preparation or progress and that the Contractor will provide facilities for such access and inspection.

1.8 Safety and Health Regulations for Construction

- A. Obligations prescribed as employer obligations under Chapter XVII of Title 29, Code of Federal Regulations, Part 1926, otherwise known as "Safety and Health Regulations for Construction and CFR Part 1910.46 Permit Required for Confined Space" are the sole responsibility of the Contractor. Provide Engineer the name of the Contractor's Safety Officer, plus the on-site Safety Representative, if other than the Superintendent, as indicated under Article 6.21 of the General Conditions of the Construction Contract.

1.9 Discovery of Hazardous Material

- A. If, during the course of this Work, the existence of hazardous material, including asbestos containing material, is observed in the Work area, immediately notify the Engineer in writing. Do not perform any Work pertinent to the hazardous material prior to receipt of special instructions from the Engineer.

1.10 Easements

- A. The Owner will obtain right-of-way easements over and through certain private lands for construction. The width or limits of such easements will be defined by the Owner before the Work begins. If the means and/or methods of construction employed by the Contractor require the use of land beyond these limits, make agreements with the property owners affected for the use of such additional land. Such additional agreements will not include any liability for the Owner or Engineer and shall have no direct effect on the completion of the project, project cost, or the time of completion.
- B. In all such right-of-way easements, carefully remove the property owner's fences, shrubs, trees or other obstacles to the performance of the work, and replace the same after Work is installed, unless such obstacles are to be permanently removed as part of the work, as indicated within the contract documents. Place backfill to the grade of the existing ground level or as otherwise shown on the Drawings.
- C. Include the cost of all restoration of property in the Contractor's bid. No additional payment will be allowed for restoration Work.

1.11 Operations Within Right-of-Way

- A. If the means and/or methods of the construction employed are such as to require the use of land beyond the public right-of-way limits, make arrangements with the property owners affected for the use of such additional land. Such additional agreements will not include any liability for the Owner or Engineer and shall have no direct effect on the completion of the project, project cost, or the time of completion.

1.12 Permits

- A. The Owner has approved all work related to the design and construction of the completed facilities and has elected not to issue the following permits, which would typically be required for a project of similar scope, extent, and character:
 - 1. Porter County Department of Development & Stormwater Management – Site Improvement/Erosion & Sediment Control Permit
 - 2. Porter County Department of Development & Stormwater Management – Right-of-Way Permit
- B. Abide by all terms and conditions of the contract documents, which contain the terms and conditions associated with the permits listed above.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

-END-

SECTION 01050 - CONSTRUCTION ENGINEERING

PART 1 - GENERAL

1.01 Summary

- A. Section Includes: Providing all equipment, personnel and materials necessary for performing Construction Engineering, including layout and verification of existing conditions and infrastructure, to complete the Work as described in these Contract Documents.

1.02 Project/Site Conditions

A. Field Measurements

1. Make all measurements and check all dimensions and elevations necessary for the proper construction of the Work called for by the Drawings and Specifications.
2. Make all necessary measurements to prevent misfitting in said Work, and be responsible for the accuracy of the layout, staking and construction of the Work.

PART 2 - MATERIALS

Not Used.

PART 3 - EXECUTION

3.01 Examination

A. Verification of Conditions

1. Check and verify elevations and locations of existing infrastructure and conditions shown on the Drawings, or otherwise present at the site, that may affect the Work. Allow adequate time for modifications to be made to the Work to account for conditions which may differ from those shown on the Drawings.
2. Verify conditions and accessible existing infrastructure prior to the preparation of shop drawings associated with, or that may be impacted by, existing conditions and infrastructure.
3. Obtain and verify elevations of inaccessible infrastructure immediately after exposure by excavation.
4. No additional compensation will be made to the Contractor for failure to obtain this information in a timely manner which would have permitted modifications to the Work that would have avoided additional work, delays, and cost.

3.02 Preparation

- A. Perform all necessary Construction Engineering, including layout and staking, to ensure that the Work conforms to the lines, grades, and elevations shown on the Drawings or otherwise specified or required.
 - 1. Establish all necessary lines, points, and corners with references for recovery of said items during construction.
 - 2. Conduct a level circuit to establish additional benchmarks for use during construction.
 - 3. Set stakes for structures.
 - 4. Set any other reference points as required for control lines and grades.
- B. When staking utilities, perform the necessary checking to establish location and grade to best fit the conditions.

-END-

SECTION 01090 - REFERENCE STANDARDS

PART 1 - GENERAL

1.01 Summary

A. Section Includes

1. General reference standards, rules and regulations that govern construction work, alterations, repairs, mechanical installations and appliances connected therewith
2. Abbreviations used in these Technical Specifications

1.02 Quality Assurance

A. Regulatory Requirements: Work shall comply with the following:

1. Occupational Safety and Health Act
2. Indiana State Construction Industry Safety Code
3. State Building rules and regulations of the Indiana Department of Homeland Security Fire and Building Safety Division
4. Indiana State Fire Marshal
5. Indiana Department of Environmental Management
6. Indiana Department of Natural Resources
7. Army Corps of Engineers
8. National Electric Code
9. National Electric Safety Code
10. Uniform Building Code
11. Life Safety Code
12. Utility regulations
13. Local ordinances, state, and federal rules and regulations pertaining to the Work
14. Porter County Supplemental Design & Construction Standards

B. Such rules, regulations and ordinances are to be considered part of these Specifications.

C. Fees for licenses shall be paid by the Contractor.

1.03 Reference Abbreviations

A. Reference to a technical society, trade association or standards setting organization may be made in the Specifications by abbreviations in accordance with the following list:

AABC	Associated Air Balance Council
AAR	Association of American Railroads
AAMA	American Architectural Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists

ACI	American Concrete Institute
ADC	Air Diffusion Council
AFBMA	Anti-Friction Bearing Manufacturers Association
A-E	Architect/Engineer
AGA	American Gas Association
AHAM	Association of Home Appliance Manufacturers
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AMCA	Air Movement and Control Association International, Inc.
ANSI	American National Standards Institute
APA	The Engineered Wood Association
ARI	American Refrigeration Institute
ASCE	American Society of Civil Engineers
ASLA	American Society of Landscape Architects
ASME	American Society of Mechanical Engineers
ASSE	American Society of Safety Engineers
ASTM	American Society for Testing and Materials
AWI	Architectural Woodwork Institute
AWPA	American Wood Protection Association
AWS	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Industry Association
CABO	Council of American Building Officials
CAGI	Compressed Air and Gas Institute
CISPI	Cast Iron Soil Pipe Institute
CTI	Cooling Tower Institute
DHI	Door and Hardware Institute
DOH	Department of Health
DOT	Department of Transportation
FS	Federal Specifications
FHWA	Federal Highway Administration, Department of Transportation
FM	Associated Factory Mutual Laboratories
GANA	Glass Association of North America
HPVA	Hardwood Plywood and Veneer Association
ICEA	Insulated Cable Engineers Association
IDEM	Indiana Department of Environmental Management
IEEE	Institute of Electrical and Electronics Engineers
IFI	Industrial Fasteners Institute
IGCC	Insulating Glass Certification Council
INDOT	Indiana Department of Transportation
IPCEA	Insulated Power Cable Engineers Association
ISPC	Indiana State Plumbing Code
MIL	Military Specifications
MSS	Manufacturer's Standardization Society
NAAMM	National Association of Architectural Metal Manufacturers
NACM	National Association of Chain Manufacturers
NAIMA	North American Insulation Manufacturers Association
NAVFAC	U.S. Naval Facilities Engineering Command

NEBB	National Environmental Balancing Bureau
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NETA	InterNational Electrical Testing Association
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
NIST	National Institute of Standards and Technology
NSF	National Sanitation Foundation
OSHA	Occupational Safety and Health Administration
PCI	Precast Prestressed Concrete Institute
PDI	Plumbing and Drainage Institute
PFI	Pipe Fabricators Institute
SAE	Society of Automotive Engineers
SPECS	Specifications
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SPI	Society of the Plastics Industry
SSPC	The Society for Protective Coatings
STI	Steel Tank Institute
TCNA	Tile Council of North America
UL	Underwriter's Laboratories, Inc.
USBR	US Bureau of Reclamation
WWPA	Western Wood Products Association

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

-END-

[THIS PAGE INTENTIONALLY LEFT BLANK]

SECTION 01200 - PROJECT MEETINGS

PART 1 - GENERAL

1.01 Preconstruction Conference

- A. A Preconstruction Conference will be held prior to the issuance of a Notice to Proceed, at least one week prior to starting the Work. The Engineer will make arrangements for the meeting at the site or other location and notify participants in advance of the meeting date, time and location. Required attendees include the Engineer, Contractor, Subcontractors, and the Owner or his representative. Significant proceedings of this meeting will be recorded by the Engineer and copies distributed to the participants.
- B. At the meeting, if they have not already been submitted, submit a preliminary Construction Progress Schedule, Schedule of Submittals (including name, type and specification section), and a Schedule of Values, in accordance with Article 108.02 of the General Specifications, and a list of subcontractors and suppliers if a list was not previously submitted with the Contractor's bid, or if subcontractors and suppliers have changed.

1.02 Progress Meetings

- A. A Progress Meeting will be conducted on a specific day of every week at the job site. A supervisory representative, able to make management decisions, from the Contractor shall attend the meeting. The date, time and location of said meeting will be determined at the Preconstruction Conference.
- B. Present a written status report, neatly prepared, at each meeting. The status report shall include at least the following information: Construction progress, update of schedule, delays, changes, status of RFIs, RFPs, problems, differing conditions, anticipated payment requests, personnel changes, and regulatory compliance updates. The status report shall cover all subcontractors.
- C. Require the attendance of subcontractors' supervisory personnel, as necessary, to assist in the presentation of the status report.
- D. Prepare 5 copies of the status report for distribution to the Engineer's representatives.
- E. If the Contractor fails to have a supervisory representative attend the Progress Meeting or if the Contractor fails to distribute a written status report as specified above, approval of a Partial Payment Application may be withheld until such time as the Progress Meeting can be rescheduled.
- F. Significant proceedings of this meeting will be recorded by the Engineer and copies distributed to the participants.

1.03 Special Meetings

- A. Special Meetings may be called by the Engineer or Contractor as progress of the Work dictates.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

-END-

SECTION 01300 – SUBMITTALS

PART 1 - GENERAL

1.01 Summary

A. Section Includes

1. Administrative and procedural requirements for submittals and construction documentation, including Construction Progress Schedules, Shop Drawings, Product Data, requests for information (RFIs), field transmittal memos (FTMs), samples, tests, O&M manuals, and Partial Pay Claims.

1.02 Electronic Document Management

A. Engineer and Contractor shall utilize an electronic construction communication program, "Ecomm", administered by Engineer through a third-party, Eastern Engineering, for this project.

1. All submittals, including Shop Drawings, RFIs, Field Orders, Change Orders, Change Order Requests, FTMs, Partial Pay Claims, record drawings, and other documents and communications between Contractor and Engineer for the Project shall be submitted and processed through the Ecomm program.
2. Login information and training will be made available, at no cost, to the Contractor at the start of the project.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.01 Construction Schedules

A. Submit Progress Schedules (Bar Charts or CPM/PERT Charts) at the weekly Progress Meetings during the contract period.

1. Provide complete sequence of construction by activity showing dates for beginning and completion of each element of construction.
2. Identify Work in separate phases, or other logically grouped activity.
3. Identify first work day of each week on a horizontal time scale. Sheet size shall be 24" x 36" maximum and 8 ½" x 11" minimum, but of sufficient size to allow space for updating.

B. Engineer will review Progress Schedules for conformance to the contract completion dates. If required, resubmit within 7 days after return of reviewed copy addressing Engineer's review comments.

- C. Show all changes occurring since previous submission of updated schedule. Indicate progress of each activity and show completion dates. Include major changes in scope, activities modified since previous updating, revised projections due to changes and other identifiable changes.
- D. If the Progress Schedule reflects completion date(s) different than the Contract Times, the Contract Times are not thereby voided, nullified, or affected. The Contract Times govern. Where the Progress Schedule reflects completion date(s) that are earlier than the Contract Times, the Engineer may accept such Progress Schedule with the Contractor to specifically understand that no Change Request or Claim for additional Contract Time or Contract Price shall be brought resulting from the Contractor's inability to complete the Work by the earlier date(s) indicated on the accepted Progress Schedule.
- E. Distribute copies of weekly progress schedule to Engineer, the job site file, subcontractors, and other concerned parties.
- F. Instruct recipients to report any inability to comply, and provide detailed explanation, with suggested remedies.

3.02 Alternate or "or equal" items

- A. A Specification followed by one or more manufacturers and "or approved equal" is open to equal products or materials as determined to be "equal" solely by the Engineer. The Engineer's decision shall be final in this regard.
- B. Where specific manufacturers and/or model numbers for products or materials are listed in the detailed Specifications, these items have served as the basis for the design of the improvements in this project. Products and materials submitted as an alternate or "or equal" item must be certified by the Contractor as:
 - 1. Meeting or exceeding the requirements of the detailed Specifications,
 - 2. Being of equal or better quality, and
 - 3. Being of equal function to the specific manufacturer and/or model listed.
- C. If the submitted alternate or "or equal" item requires any modification or deviation from the Drawings, prepare and submit detailed drawings to the Engineer showing all modifications in structures, piping, or other Work required to adapt the Work to the submitted alternate or "or equal" item. The Engineer will review the submitted detailed drawings of the modifications and indicate whether changes are necessary to comply with the project requirements. Detailed drawings which do not comply with the project requirements shall be revised and resubmitted.
- D. The Contractor's listed "add" or "deduct" associated with alternate products and materials shall be based upon an "installed price" and shall take into consideration and include any cost of the design or construction changes that may be required as a result of an alternate or "or equal" product or material.

- E. Voluntary alternate and/or "or equal" products or materials that is installed by Contractor but fails to meet the specified requirements as determined by the Engineer shall be replaced with the specified item at the Contractor's expense.

3.03 Shop Drawings

A. General

1. References to Shop Drawings in this Section 01300 shall by definition include Product Data and other descriptive data.
2. Submit Shop Drawings to the Engineer within 60 days of the Effective Date of Agreement.
3. The Engineer shall have 21 calendar days from the date of receipt of a complete submittal to review and return the submittal. The Contractor shall not be allowed any claims for Shop Drawing review that is completed within the 21-day review period.
 - a. The Engineer may agree to expedite his Shop Drawing review on an item by item basis, but it is imperative that all Shop Drawing submittals be complete and properly marked as indicated in this Section 01300.
 - b. Completion of the project within the contracted time is critical. Engineer cannot review incomplete or poor quality Shop Drawings and will not accept responsibility for any delays caused by incomplete or poor quality Shop Drawing submittals.
 - c. It is the Contractor's responsibility to submit legible Shop Drawings. Faxed copies of the Shop Drawings are unacceptable and will be returned without review.
4. Contractor agrees that Shop Drawing submittals processed by the Engineer are not Change Orders; that the purpose of Shop Drawing submittals by the Contractor is to demonstrate to the Engineer that the Contractor understands the design concept, that he demonstrates his understanding by indicating which products and materials he intends to furnish and install, and by detailing the fabrication and installation methods he intends to use.
5. Review of Shop Drawings does not relieve Contractor of responsibility for correct ordering of products and materials. Contractor's review should ensure that products will fit in available space.
6. Contractor further agrees that if deviations, discrepancies or conflicts between Shop Drawings and Specifications are discovered either prior to or after Shop Drawing submittals are processed by the Engineer, the design Drawings and Specifications shall control and shall be followed.

B. Contractor Submittal Procedure

1. Submit Shop Drawings to the Engineer for every product and all components to be used in the Work in accordance with the General Conditions, individual Sections, and this Section 01300.

2. Shop Drawings shall be submitted and processed electronically. Submit all electronic submittals through ecommunication "Ecomm" program administered by Engineer through Eastern Engineering.
 - a. The Engineer reserves the right to request up to two (2) hard copies of all submittals.
 - b. Full-size drawings may be requested by the Engineer for review.
3. Provide a letter of transmittal to the Engineer for each submittal. The letter of transmittal shall contain the name of the project, workmanship and materials Section number, the name of the Contractor, the list of drawings submitted including numbers and titles, and any other pertinent information for the items being submitted.
4. If any part of a Shop Drawing lists data or information which is in conflict or differs from the Specification or Drawings, clearly note the difference or conflict on the submittal and include in the cover letter a description of the differences entitled "Exceptions to the Specifications and/or Drawings".
 - a. Information on submittals which contain differences or discrepancies which are not clearly noted shall be considered "not reviewed" with any of the Shop Drawing action codes and may be rejected.
5. Coordinate and submit complete sets of Shop Drawings in brochure form and include all related items in one brochure.
6. Do not markup Shop Drawings in red font. Engineer will make all his review comments in red font.
7. Submit Shop Drawings to the Engineer for review before products are ordered or sent to the project.
8. Complete submittals shall include all significant data and a response to each requirement listed in the Specifications. Submittals which do not comply with these requirements may be returned as incomplete and without review.
9. Shop Drawings shall be of sufficient detail to assure the items comply with the Specifications, and shall provide the necessary data for installation, operation, and maintenance.
10. Submittals shall be applicable to this project and not a "cover-all", "general", or "typical" drawing or catalog cut-sheet unless it is made to indicate the products being provided specifically for this project using the following methods:
 - a. Include project name, product name, and other items or identifiers and descriptions on the drawings and cut sheets.
 - b. All sizes, special features, options, modifications, etc., that are provided specific to this project are noted in some fashion.
 - c. All options or features not provided specific to this project or pertinent to this Work are deleted, crossed out, or otherwise removed from consideration.
11. Information to Include
 - a. Manufacturer's model number
 - b. Indication of all performance data, construction materials, finishes and modifications to manufacturer's standard design called for in the Specifications
 - c. Location of connections for all piping
12. Affix Contractor's company name and date in form of a stamp, to all Shop Drawings submittals before submitting. The signature of Contractor's Representative is required.

13. Contractor's Certification: Material data and Shop Drawings shall be submitted by the Contractor with a cover letter, and the Contractor's stamp of approval, indicating that he has reviewed, checked, and approved the data submitted; that submittal is in compliance with the requirements of the project and with the provisions of the Contract Documents; that any exceptions to the Specifications or Drawings are specifically noted or pointed out as such; and that he has verified all field measurements and construction criteria, materials, catalog numbers, and similar data.
14. Failure to provide required information and certification with or on the submittals shall be cause for the return of Shop Drawings without review or other action.

C. Engineer's Review

1. Engineer's action codes shall have the following meanings:
 - a. If a Shop Drawing is stamped "No Exceptions Taken" or "Make Corrections Noted", then no further submittals by the Contractor will be required and a letter of transmittal will be returned to the Contractor.
 - b. If a Shop Drawing is stamped "Make Corrections Noted", make the corrections indicated and proceed as noted.
 - c. If a Shop Drawing is stamped "Rejected-Resubmit" or "Revise and Resubmit", the Contractor will receive marked copies with a letter of transmittal noting the Engineer's review comments.
2. If the first Shop Drawing submittal is rejected by the Engineer, and the second Shop Drawing submittal for the same item is also rejected by the Engineer, then the review fees and expenses that the Engineer incurs in conjunction with the review of the third and subsequent Shop Drawing submittals shall be charged to the Contractor, and the Contractor shall reimburse the Owner.
 - a. Engineer's review fees and expenses shall be based upon the current "Hourly Rate and Reimbursable Expense Schedule" of the Engineer and this compensation shall be paid within 30 days of being invoiced. As an option, Engineer's review fees and expenses may be withheld from payment to Contractor.
3. Resubmitted Shop Drawings
 - a. Make the necessary corrections and resubmit the documents. The letter transmitting corrected Shop Drawings shall note that the documents comprise a resubmittal.
 - b. All information, which is correct on the original submittal, will not be changed in any way on the resubmitted Shop Drawings.
 - 1) If information on a Shop Drawing must be changed due to a Change Order, cloud all the changes on the resubmitted Shop Drawing and state such changes in the resubmittal transmittal letter.
 - 2) If any corrections to the original Shop Drawing, other than those noted by the Engineer, are made on a resubmittal due to discovery by Contractor that original information was incorrect, cloud all the changes on the resubmitted Shop Drawing and state such changes in the resubmittal transmittal letter.
 - c. Revise and resubmit the Shop Drawings as required, until the submittal is marked "No Exceptions Taken" or "Make Corrections Noted".

3.04 Partial Payment Claims

- A. These claims are described in the General Conditions. One (1) pdf copy of the fully executed claims shall be submitted to the Engineer monthly as determined at the Preconstruction Conference.
- B. Submit purchase orders, invoices and delivery tickets to the Engineer for products claimed as stored materials. Prices must be shown on the invoices or delivery tickets if the Contractor is claiming reimbursement for materials stored onsite, in the possession of the Owner. Amounts claimed for stored materials cannot exceed the amounts indicated in the invoice for the applicable items or the value of that pay item as listed on the Bid Attachment.

-END-

SECTION 01400 – QUALITY ASSURANCE AND QUALITY CONTROL

PART 1 - GENERAL

1.01 Summary

- A. Section Includes: Administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Documents.
 - 1. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with the Contract Documents.
 - 3. Requirements for Contractor to provide quality-control services required by Engineer, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.02 Definitions

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and ensure construction complies with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that completed construction complies with requirements. Services do not include contract enforcement activities performed by Engineer.
- C. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratories shall mean the same as testing agency.

1.03 Delegated Design

- A. Where professional design services or certifications by a design professional are specifically required of the Contractor by the Contract Documents, provide these services and certifications in compliance with specific performance and design criteria indicated. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Engineer.
- B. Submit a statement, signed and sealed by the responsible design professional, for each product or system specifically assigned to Contractor to be designed or certified by a design professional, indicating the products or systems comply with

performance and design criteria indicated. Include list of codes, loads, and other design factors used in performing these services.

1.04 Tests and Inspections

- A. All materials and each part or detail of the Work shall be subject to inspection by the Engineer at all times. Allow access to all parts of the Work and furnish such information and assistance required to make a complete and detailed inspection.
- B. Shop inspections may be required including observations of the preparation, manufacture and coating of materials and products at the plant.
- C. The inspection of the Work shall not relieve the Contractor of any obligation to fulfill his contract as prescribed. Defective Work shall be made good and unsuitable materials shall be rejected, notwithstanding that such defective Work and materials have been previously overlooked and accepted on estimates for payments.
- D. All Work shall be tested to the satisfaction of the Engineer before acceptance. The cost of all tests is to be borne by the Contractor.
- E. Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents within 60 days of the Effective Date of Agreement. Include the following information in the schedule:
 - 1. Specification Section number and title
 - 2. Description of test and inspection
 - 3. Identification of applicable standards
 - 4. Identification of test and inspection methods
 - 5. Number of tests and inspections required
 - 6. Time schedule or time span for tests and inspections
 - 7. Entity responsible for performing tests and inspections
 - 8. Requirements for obtaining samples
 - 9. Unique characteristics of each quality-control service
- F. Distribute schedule to Engineer, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.
- G. Prepare and submit certified written reports that include the following:
 - 1. Date of issue
 - 2. Project title and number
 - 3. Name, address, and telephone number of testing agency
 - 4. Dates and locations of samples and tests or inspections
 - 5. Names of individuals making tests and inspections
 - 6. Chain of Custody Record (where applicable)
 - 7. Description of the Work and test and inspection method
 - 8. Identification of product and Specification Section
 - 9. Complete test or inspection data
 - 10. Test and inspection results and an interpretation of test results

11. Ambient conditions at time of sample taking and testing and inspection
12. Comments or professional opinion on whether tested or inspected Work complies with the Contract Documents requirements
13. Name and signature of laboratory inspector
14. Recommendations on retesting and reinspection

1.05 Submittals

- A. Submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.06 Quality Assurance

- A. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance.
- C. Testing Agency Qualifications: An agency specializing in, and with proven experience and capability in, conducting the types of tests and inspections to be performed. Provide proof of agency's capabilities and experience upon Owner's request.

1.07 Quality Control

- A. Contractor Responsibilities: Provide quality-control services specified in the Contract Documents and required by authorities having jurisdiction.
 1. Engage a qualified testing agency to perform quality-control services.
 2. Do not employ the same entity engaged by Owner, unless agreed to in writing by Owner.
 3. Notify testing and inspection agencies in ample time before performing Work that requires testing or inspection. Abide by notification requirements of authority having jurisdiction.
 4. Submit a certified written report of each quality-control service performed to Owner, Engineer, and authority having jurisdiction.
- B. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation. Report results in writing.
- C. Retesting/Reinspection: Regardless of whether original tests or inspections were Contractor's responsibility, provide retesting and reinspection for construction that

revised or replaced Work that failed to comply with requirements of the Contract Documents.

- D. Testing Agency Responsibilities: Provide qualified personnel to perform required tests and inspections.
 - 1. Notify Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of services.
 - 2. Interpret tests and inspections and state in each report whether tested and inspected Work complies with or deviates from requirements.
 - 3. Submit a certified written report, in duplicate, of each test and inspection service through Contractor.
 - 4. Do not release, revoke, alter, or increase requirements of the Contract Documents or approve or accept any portion of the Work.

- E. Associated Services: Cooperate with agencies performing tests and inspections, and provide reasonable auxiliary services requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
 - 1. Access to the Work
 - 2. Incidental labor and facilities necessary to facilitate tests and inspections
 - 3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
 - 4. Facilities for storage and field-curing of test samples
 - 5. Delivery of samples to testing agencies
 - 6. Preliminary design mix proposed for use for material mixes that require control by testing agency
 - 7. Security and protection for samples and for testing and inspection equipment at Project site

- F. Schedule time for tests, inspections, obtaining samples, and similar activities. Coordinate sequence of activities to accommodate quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.01 Repair and Protection

- A. On completion of testing, inspection, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

- B. Protect construction exposed by or for quality-control service activities.

- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

-END-

[THIS PAGE INTENTIONALLY LEFT BLANK]

SECTION 01500 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.01 Summary

- A. Section Includes: Providing and coordinating temporary facilities, utilities and controls.
- B. Related Sections
 - 1. Section 01010 – Summary of Work
 - 2. Section 01090 – Reference Standards

1.02 References

- A. Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD) and Indiana Supplement, latest editions

1.03 Submittals

- A. Quality Assurance/Control Submittals
 - 1. Before beginning Work adjacent to any street, provide the Engineer with a proposed signing schedule, which shall include location, size, and messages of all signs to be used.

1.04 Quality Assurance

- A. Regulatory Requirements
 - 1. Obtain permits as specified in Section 01010.
 - 2. Comply with the latest applicable Federal, State, and local codes, including but not limited to, the agencies and codes specified in Section 01090.
 - 3. Maintain lights and barricades on all obstructions and hazards during contract period in conformance with federal, state, and local laws and codes.

PART 2 - PRODUCTS

2.01 Temporary Facilities, Utilities, and Services

A. Sanitary Facilities

- 1. Provide sanitary facilities for use of all construction personnel including personnel of other contractors for the duration of the project as follows:
 - a. Chemical units complete with weather-tight enclosure adequately ventilated and equipped with latching door.

- b. Maintain chemical units weekly or at lesser periods if determined necessary. Chemical units shall be in accordance with the rules and regulations of the locality of the project (State, county, or city).
- c. Furnish toilet paper and hand sanitizer for the chemical units and replenish supply as needed.

B. Trash Containers

- 1. Provide a trash container for the disposal of packaging materials, pieces of broken pipe, rubbish, trash and all other debris. Empty trash containers weekly or as container is filled.

C. Fire Extinguishers

- 1. Provide multipurpose dry chemical fire extinguishers as required. Mount units in protective red enclosures plainly marked and readily accessible.

D. Bulletin Board

- 1. Provide a bulletin board or display area to post required notices in an appropriate weather-protected manner.

E. Construction Signs and Equipment

- 1. Provide and erect construction signs, lights, channelizing devices, and other traffic control equipment in accordance with the MUTCD and the Indiana Supplement requirements.

PART 3 - EXECUTION

3.01 Installation

- A. Locate temporary facilities herein specified, and facilities required by the Contractor and his Subcontractors for storage or other purposes in the performance of their contracts, to avoid interference with Work. Relocate as required and/or directed by Engineer.

3.02 Protection

- A. Piping Rough-ins: Keep foreign materials out of piping by capping or other protection. Trades responsible for stoppage will be charged for cleaning.
- B. Safety: Maintain signs, lights, and barricades on all obstructions and hazards during construction period in conformance with local, state, and federal laws and codes.

3.03 Access Roads and Parking Areas

- A. Provide and maintain vehicular access to the site and within the site for use by persons and equipment involved in the construction of the project. Maintain access

roads and driveways with sufficient compacted aggregate to provide a suitable support for vehicular traffic and anticipated loads.

- B. Provide and maintain temporary parking facilities for use by construction personnel, the Owner, and the Engineer. Maintain parking facilities free of construction materials, mud, snow, ice, and debris.
- C. Restore areas to original or to specified conditions shown on the Drawings at completion of the Work.

3.04 Maintenance of Traffic

A. General

- 1. Comply with the requirements of the State, City, or County Highway and Street Departments for all traffic maintenance.
- 2. Maintain all construction signs, lights, channelizing devices, and other traffic control equipment in proper working order.
- 3. During construction, maintain and protect the pedestrian and vehicular traffic at all times on all streets involved and provide access to all residential and commercial establishments adjacent to the construction area.

B. Notification Requirements

- 1. Before partially or fully closing any thoroughfare, notify and, if necessary, obtain approval from the duly constituted public authority having jurisdiction (state, county, or city).
- 2. Notify the Engineer of intended partial or full road or drive closures 72 hours in advance of the proposed closing. Place all proper detour signs and barricades prior to the actual street closing.
- 3. Notify each resident or property owner of Work which will impact access to his property a minimum of 2 business days in advance of restricting access to the property.

C. Lane/Road Restriction Requirements

- 1. Do not unduly or unnecessarily restrict or impede normal traffic through the streets of the community. Keep the traveled way of all streets, roads, and alleys clear and unobstructed. Do not use streets, roads, or alleys for the storage of construction materials, equipment supplies, or excavated earth, except when and where necessary.
- 2. Adjacent street segments shall not be closed at the same time to reduce delays for emergency responders. For this requirement, an "adjacent street segment" shall include the next block of the same street in either direction, the same block of a parallel street in either direction, and the nearest blocks of connecting streets in all directions.
- 3. The public streets located outside of the limits of construction shall remain open and unrestricted by construction activities at all times.
- 4. Daily partial road closures on the public streets located within the limits of construction may be permitted. Lane closures are only permissible between

7:00 am and 7:00 pm on weekdays and between the hours of 8:00 AM and 6:00 PM on Saturdays. Unless otherwise provided, maintain at least one 12-foot wide lane of traffic at all streets and service drives during construction of the project. Provide flagmen or temporary signals where required to maintain flow of traffic. During non-construction hours, open all lanes for public use.

5. Partial road closures overnight on the public streets located within the limits of construction may be allowed with prior written approval by the County, provided that the maximum length of closure is less 400 feet, no driveways are blocked, and no more than one overnight partial road closure will occur simultaneously. When re-opening these roads, move the traffic channelizing devices to the edge of the travel lanes, and cover every flagger and one lane road sign with an opaque material, turn signs to face away from the roadway, or remove.
6. The Contractor may limit or prohibit public parking within the limits of the project.
7. If required by duly constituted public authority, construct bridges or other temporary crossing structures over trenches at no additional cost to Owner. Such structures shall be of adequate strength and proper construction and shall be maintained in such manner as not to constitute an undue traffic hazard.

D. Access to Private Property

1. Private driveways shall not be closed, except when and where necessary, and then only upon advance notice to the Engineer and for the shortest practicable period of time, consistent with efficient and expeditious construction. When a residential driveway is closed due to construction activity, designate safe parking areas, and provide access to adjacent properties. The Contractor shall be liable for any damage to persons or property resulting from his Work.
2. Maintain a clean pedestrian access to all establishments within the project limits during construction by use of temporary bridging or other means.

E. Walks and Passageways

1. Make provisions at cross streets for the free passage of vehicles and foot passengers, either by bridging or otherwise.
2. Do not unnecessarily obstruct the sidewalks, gutters, or streets, or prevent in any manner the flow of water in streets. Use all proper and necessary means to permit the free passage of surface water along the gutters.
3. Immediately remove and dispose of excavated materials and offensive matter to avoid inconveniencing the public and adjacent tenants. Erect suitable barriers to prevent such inconveniences and to prevent injury to trees, sidewalks, fences, and adjacent properties.
4. At any time during construction, when there is not a curb adjacent to the roadway, place barricades as shown on the Drawings or as directed by the County. Protect any gaps adjacent to an open sidewalk with orange snow fencing.

F. Pavement Restoration

1. Streets in which excavation has occurred shall be temporarily restored to receive traffic as soon as possible. Permission to close additional streets shall be denied the Contractor if, in the opinion of the Owner or Engineer, the restoration on streets where excavation has occurred has not progressed satisfactorily.
2. Maintain the road surfaces during the construction, take precautions to prevent unnecessary damage to partially completed surfaces, and repair any portions which do become damaged. Bear all costs involved in such maintenance, precautions, and repairs, including the cost of all necessary materials.
3. During construction of new piping, prior to final pavement repair, backfill all public roads and drive crossings as shown on the Drawings and top with 14 inches of Compacted Aggregate No. 53 or approved material.

3.05 Barricades, Warning Lights and Arrow Boards

- A. Provide, erect and maintain all necessary barricades, suitable and sufficient danger signals and signs. Take all necessary precautions for the protection and safety of the public, workmen, structures, and equipment. Roads closed to traffic shall be protected by effective barricades. Obstructions shall be illuminated during hours of darkness.
- B. Erect warning signs in advance of any location on the project where operations may interfere with the use of the road by traffic and at all intermediate points where the new Work crosses or coincides with an existing road.
- C. Place sufficient warning lights and arrow boards on or near the Work and keep them illuminated during periods of construction and reduced visibility (from twilight in the evening until sunrise). The Contractor is responsible for all damages that Owner or any other party may sustain in consequences of neglecting the necessary precautions in prosecuting this Work.

3.06 Removal and Clean-Up

- A. Remove all temporary facilities, utilities, services and materials upon completion of construction. Remove debris and clean area. Repair all damage and restore area to finish condition.

-END-

[THIS PAGE INTENTIONALLY LEFT BLANK]

SECTION 01600 - MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.01 Delivery, Storage and Handling

- A. The delivery, receipt, storage and handling of all fixtures, equipment, materials, components and appurtenances (collectively "products") shall be the responsibility of the Contractor.
- B. Load and unload all products by lifting with hoists and skidding to avoid shock or damage. Under no circumstances shall products be dropped.
- C. Do not skid or roll products on or against other products. Use padded slings, hooks, pipe tongs, etc, to handle all products in a manner to prevent damage.
- D. Pack, transport and store all equipment components and motors in protective enclosures such that they are not subjected to forces or elements that may result in damage. Promptly remove damaged products from the job site and replace with undamaged products.
- E. Do not stack equipment components or motors. Adequately support equipment during transport and storage to prevent undue stress.
- F. Obtain storage space for all products used on this project. The Owner will not receive, store or house products being delivered to the site for Contractor or his Subcontractor.
- G. Store products to prevent dirt and debris from entering and accumulating. Protect products from heat, cold, sunlight, contamination and other adverse conditions.
- H. Deliver, store, protect, and handle products in accordance with the manufacturer's instructions. Products not properly stored or protected may be subject to rejection as determined by the Engineer.

1.02 Local Labor and Materials

- A. Whenever possible, the Contractor, his subcontractors, material men, or others who employ labor, shall employ labor locally.
- B. Purchase materials such as sand, cement, gravel, pipe, steel, and lumber from local dealers when such local dealers' prices meet competition's and where such materials meet the Specifications.

1.03 Domestic Product Requirements

- A. All steel and foundry products provided for public works projects, including ferrous and non-ferrous metals, piping, fittings, and piping-related products, shall be manufactured in the United States in accordance with Indiana Code 5-16-8-2 –

Public agency contract provisions; rules for determining reasonable pricing; and Consolidated Appropriations Act (2014) Section 436.

1.04 Unavailability of Materials and Equipment

- A. Bids must be based on use of the products specified, subject to the provisions of any addenda issued. If the Contractor is unable to furnish or use any of the products specified because of any order by a governmental agency limiting the manufacture or use, or because of the lack of availability in the market for such products, the Contractor shall offer substitutes suitable for the purpose, considering the factors of quality, serviceability, appearance, and maintenance. No substitute shall be used until it has been approved by the Engineer.
- B. No consideration will be given to the use of substitutes on account of market conditions unless the Contractor demonstrates that, for the item in question, he placed his order and submitted shop drawings without delay, that he has shown due diligence in attempting to locate the item as specified, and that the unavailability is due to market conditions in general throughout the particular industry.
- C. If substitutes are used in the Work, the compensation to be paid to the Contractor shall be subject to review and adjustment. The basis upon which the amount of price and adjustments will be founded shall be the cost of the appropriate items at the time the bids were opened.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

-END-

SECTION 01710 - CLEANING

PART 1 - GENERAL

1.01 Summary

A. Section Includes

1. Intermediate Cleaning During Construction
2. Final Cleaning
3. Final Inspection

1.02 Quality Assurance

A. Requirements of Regulatory Agencies

1. Maintain project in accordance with Occupational Safety and Health Act of 1970 as amended, in terms of cleanup.

1.03 Project/Site Conditions

A. Environmental Requirements

1. Conduct cleaning and disposal operations in accordance with local ordinances, state and federal regulations and anti-pollution laws.
2. Do not burn or bury rubbish and waste materials on project site. Do not dispose of volatile wastes such as, mineral spirits, oil or paint thinner in storm or sanitary drains.

PART 2 - PRODUCTS

2.01 Cleaning Materials

- A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
- B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.01 General

- A. All cleaning shall be the responsibility of the Contractor unless specifically noted otherwise. If rubbish and debris are not removed from the Work areas as specified, or cleaning of the buildings, structures and site are not completed as specified, the Owner reserves the right to have the cleaning done at the expense of the Contractor.

- B. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly painted surfaces.
- C. Provide on-site containers for collection of waste materials, debris and rubbish.

3.02 Intermediate Cleaning During Construction

- A. Execute cleaning to ensure that all structures and buildings, grounds, roadways and property are maintained free from accumulations of waste materials, debris and rubbish caused by construction activities. Remove all surplus materials from the job site on a daily basis.
- B. Prior to placing Work areas into service, perform intermediate cleaning as follows:
 - 1. Remove and dispose of all temporary structures and debris, including dirt, sand, gravel, rubbish, and waste material from the Work areas.
 - 2. Thoroughly clean, sweep, and wash down all Work areas.
 - 3. Thoroughly clean, and when so directed, disinfect all materials being modified, rehabilitated, and or replaced.
 - 4. Direct all Subcontractors to similarly clean all areas in which they have worked, and to thoroughly clean all materials provided under their contracts.

3.03 Final Cleaning

- A. General: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit of Work to the condition expected from a commercial building cleaning and maintenance program. Comply with manufacturer's cleaning instructions.
- B. At the completion of Work and immediately prior to final inspection, clean the entire Project as follows:
 - 1. Clean the project site, yard and grounds, in areas disturbed by construction activities, including landscape development areas, of waste materials, debris, rubbish and foreign substances.
 - 2. Sweep paved areas broom clean. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - 3. Remove tools, construction equipment, machinery, and surplus material from the site.
 - 4. Thoroughly clean, sweep, wash, and polish all Work and equipment under the Contract, including finishes.
 - 5. Remove all dirt, sand, gravel, and other material.
 - 6. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from sight-exposed interior and exterior finished surfaces; polish surfaces so designated to shine finish.
 - 7. Remove labels that are not permanent labels.
 - 8. Repair, patch and touch-up marred surfaces to specified finish, to match adjacent surfaces.
 - 9. Remove snow and ice from access to all buildings and structures, new or existing, affected by the Work.

- C. Leave the structures and site in a complete and finished condition to the satisfaction of the Engineer.
- D. At completion of Work, remove tools, equipment, machinery and surplus materials, and clean all sight-exposed surfaces; leave project clean and ready for occupancy or operation as applicable.

3.04 Final Inspection

- A. In preparation for final completion or occupancy, conduct inspection of sight-exposed interior and exterior finished surfaces, and of concealed spaces.
- B. After cleaning is complete the final inspection may be scheduled. The inspection will be done with the Owner and Engineer.

-END-

[THIS PAGE INTENTIONALLY LEFT BLANK]

SECTION 01720 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 Summary

- A. Section Includes: Administrative and procedural requirements for Project Record Documents.
- B. Project Record Documents required include the following as applicable:
 - 1. Marked-up copies of Contract Drawings
 - 2. Marked-up copies of Shop Drawings
 - 3. Newly prepared drawings
 - 4. Marked-up copies of Addenda, and Change Orders
 - 5. Marked-up Product Data submittals
 - 6. Field Orders
 - 7. Record Samples
 - 8. Field records for variable and concealed conditions
 - 9. Record information on Work that is recorded only schematically
 - 10. Field Test Reports
- C. Related Sections
 - 1. Section 01300 – Submittals

1.02 Maintenance of Documents

- A. Make documents available at all times for the Engineer's observations.
- B. Store record documents apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition.

1.03 Submittals

- A. Record Drawings
 - 1. For substantial completion to be established, deliver one (1) set of "Contractor's Record Drawings" to Engineer. The Engineer will review the Record Drawings prior to acceptance.
 - 2. Contractor may complete Record Drawings in electronic format using Owner-approved CAD-based software.
 - 3. Organize into sets and bind and label sets for the Owner's continued use.
 - 4. If the Engineer determines the Record Drawings are not in conformance with the specifications, the Engineer will return the Record Drawings to the Contractor. Revise the Record Drawings and resubmit to the Engineer prior to final completion. The Engineer will review the revised Record Drawings for conformance to specifications. If the revised Record Drawings are not in conformance with the specifications the Engineer or a third party as determined

by the Owner will then perform all necessary field survey and measurements, field excavations and locations, engineering calculations, and drafting to complete the Record Drawings in conformance with the specifications.

5. The Contractor shall be responsible for payment to the Owner for Work to make the corrections and revisions to the incomplete Record Drawings submitted by the Contractor.
6. The Engineer will not recommend Final Completion until Record Drawings are submitted and approved.

B. Markup Procedures

1. During construction, maintain one (1) set of Contract Drawings and Shop Drawings for Project Record Document purposes. Label each drawing "Contractor's Record Drawing" in 2-inch high printed letters. Keep Record Drawings current. Do not permanently conceal any Work until required information has been recorded.
 - a. Legibly and accurately mark these Drawings in an understandable drawing technique to show the actual installations where the installation varies from the installation shown originally. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Items required to be marked include as applicable, but are not limited to, the following:
 - 1) Dimensional changes to the Drawings
 - 2) Revisions to details shown on the Drawings
 - 3) Locations and depths of underground utilities
 - a) All valves (gate, plug, air release, combination sewage, etc.) shall be located and referenced to three (3) permanent surface improvements.
 - b) All fittings (tees, wyes, bends, crosses, plugs, caps, etc.) shall be located and referenced to three (3) permanent surface improvements.
 - c) All force mains shall be located and referenced to the centerline of the road or street at 500-foot minimum intervals.
 - d) All structures (manholes, vaults, etc.) shall be located and referenced to three (3) permanent surface improvements.
 - e) All sewer laterals shall be located and referenced to the downstream manhole (stationing in feet) and depth of lateral at property line.
 - 4) Revisions to routing of piping and conduits
 - 5) Changes made by Change Order or Field Transmittal Memo
 - 6) Details not on original Contract Drawings
 - c. Mark record prints of Contract Drawings with red erasable colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
 - d. Mark important additional information that was either shown schematically or omitted from original Drawings.
 - e. Note Field Transmittal Memo numbers, alternate numbers, Change Order numbers, and similar identification.

2. Responsibility for Markup: Contractor shall be solely responsible for the measurement and recording of the Record Drawings. The presence of the Engineer or Owner shall not relieve the Contractor in any way of his/her obligation in this regard.

C. Miscellaneous Records

1. Refer to other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities and products.
2. Immediately prior to Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for use and reference. Submit to the Engineer for the Owner's records.
3. Miscellaneous records include, but are not limited to, the following categories as applicable:
 - a. Field records on excavations, underground construction and similar Work
 - b. Survey showing locations and elevations of underground lines
 - c. Invert elevations of drainage piping
 - d. Authorized measurements utilizing unit prices or allowances
 - e. Records of landscaping and plant treatments
 - f. Certification received in lieu of labels on bulk products
 - g. Batch mixing and bulk delivery records
 - h. Documented qualification of installation firms
 - i. Inspections and certifications by governing authorities
 - j. Leakage and water-penetration tests
 - k. Final inspection and correction procedures

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.01 Recording

- A. Post changes and modifications to the Documents as they occur. Do not wait until the end of the Project.
- B. Have Documents readily available for review at the weekly progress meetings. Partial pay claims may be withheld if record documents are not kept updated in a satisfactory manner.

-END-

[THIS PAGE INTENTIONALLY LEFT BLANK]

SECTION 01731 - CUTTING AND PATCHING

PART 1 - GENERAL

1.01 Summary

A. Section Includes

1. Procedural requirements for cutting and patching as applicable to mechanical, structural, electrical and related installations.

B. Related Sections

1. Section 02050 – Demolition
2. Section 02535 – Pavement and Sidewalk Repair and Replacement
3. Section 02220 – Trenching, Backfilling and Compaction for Utilities

1.02 Definitions

A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.03 Submittals

A. Submit a plan describing cutting and patching procedures at least 10 days before cutting and patching will be performed. Include the following information:

1. Describe cutting and patching extent; show how the work will be performed.
2. Describe changes to existing structural elements and operating components as well as changes in building's appearance and other significant visual elements.
3. List products to be used and firms or entities that will perform the work.
4. Indicate the dates cutting and patching will be performed.
5. List utilities that will be disturbed, affected, relocated or temporarily out of service. Indicate how long service will be disrupted.
6. Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
7. Obtain approval of cutting and patching plan from Engineer before commencing cutting and patching work. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.04 Quality Assurance

A. Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.

- B. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- C. Operational Elements: Do not cut and patch the following operating elements and related components in a manner that results in reducing their capacity to perform as intended or that result in increased maintenance or decreased operational life or safety.
 - 1. Primary operational systems and equipment
 - 2. Air or smoke barriers
 - 3. Fire-protection systems
 - 4. Control systems
 - 5. Communication systems
 - 6. Conveying systems
 - 7. Electrical wiring systems
 - 8. Operating systems of special construction in Division 13 Sections
 - 9. Piping systems
 - 10. Ventilation systems
- D. Miscellaneous Elements: Do not cut and patch the following elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that result in increased maintenance or decreased operational life or safety.
 - 1. Water, moisture, or vapor barriers
 - 2. Membranes and flashings
 - 3. Exterior curtain-wall construction
 - 4. Equipment supports
 - 5. Piping, ductwork, vessels, and equipment
 - 6. Noise- and vibration-control elements and systems
- E. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Engineer's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.01 Materials

- A. Use materials identical to existing materials unless otherwise specified or approved. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.
- B. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.

PART 3 - EXECUTION

3.01 Examination

A. Verification of Conditions

1. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers before beginning work.
3. Plan the work to avoid interference of use of adjoining areas or interruption of free passage to adjoining areas.

3.02 Preparation

A. Protection

1. Protect existing construction prior to and during cutting and patching to prevent damage.
2. Provide temporary support of work to be cut.
3. Correct any unsafe or unsatisfactory conditions prior to proceeding with installation.
4. Provide protection from adverse weather conditions for portions of project that might be exposed during cutting and patching operations.

B. Provisions for Existing Services

1. Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to minimize or avoid interruption of services to occupied areas.

3.03 Installation

A. Cutting: Interface with Existing Construction

1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original or specified condition.
2. Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original installer; comply with original installer's written recommendations.
3. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
4. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.

5. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 6. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
 7. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
- B. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching
1. Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
 2. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 3. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 4. Floors and Walls: Where walls or partitions that are removed extend from one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 5. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 6. Ceilings: Patch, repair, or re-hang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
 7. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weather-tight condition.
 8. For watertight structures, patch and seal leaks using approved, compatible materials per the manufacturer's recommendations.

-END-

SECTION 01990 - PAY ITEMS

PART 1 - GENERAL

1.01 Summary

A. Section Includes

1. Measurement and payment for unit price Work. Payments will be made to the Contractor for the actual quantities of Work performed or materials furnished in accordance with the Drawings and Specifications.
2. The scheduled quantities of Work to be completed and materials to be furnished may each be increased or decreased without invalidating the unit price bid. The unit price bid for an item will only be subject to reevaluation and adjustment if the variation in estimated quantities meets all the conditions stated in the Article 104.03 of the General Specifications.

1.02 Unit Prices

A. Measurement and Payment

1. Make all measurements and check all dimensions necessary for the proper construction of the Work called for by the Drawings and Specifications. During the execution of the Work, make all necessary measurements to prevent nonconformity in said Work and record such accurate measurements to the construction on a set of construction drawings to be submitted to the Engineer.
2. The method of measuring the Work for payment under the various pay items shall be as indicated in Pay Items below. In any event, the unit or lump sum price stated in the Contract to be paid for the respective item shall include, and be payment in full for, the installation complete in all details and ready for use and operation as specified and as indicated on the Drawings.
3. Payment will be made under each item only for such Work that is not specifically included under other items.
4. All items paid for on a price per linear foot basis will be measured and paid for to the nearest foot unless noted otherwise.

B. Incidental Work

1. The following Incidental Work shall be included in the unit price of each applicable pay item in this Section. No extra payment will be made for Incidental Work, which shall include the furnishing of all labor, material, and equipment necessary to complete the Work, including:
 - a. supporting and protecting utility poles, conduits, and lines;
 - b. recording of construction areas;
 - c. excavating; hauling; filling; backfilling; placing; spreading; shaping; compacting; testing of materials; and maintaining, removing, hauling, and disposing of any temporary materials;
 - d. excavating; sheeting; shoring; dewatering, including treatment and disposal; bypass pumping and piping;

- e. pipe bedding; installing; joining; haunching; initial backfilling; final backfilling;
- f. core drilling; modifying openings; connecting new pipes to existing and new structures or pipes; locating, extending, providing fittings, and connecting existing pipes to new structures or pipes; grouting and sealing pipe penetrations; installing tops and castings;
- g. repairing and/or replacing existing sewers, laterals, water mains, service lines, irrigation system components, curbs and gutters, sidewalks, pavement, field tiles, and other items damaged or affected by the Work;
- h. flushing and cleaning pipes, appurtenances, and structures; pipe and structure inspection;
- i. testing of pipes and structures, including but not limited to, hydrostatic testing, leakage testing, bacteriological tests, mandrel testing, vacuum testing, etc., as specified;
- j. removing, hauling, and disposing of demolished structures, piping, material, and debris;
- k. preparing concrete and asphalt surfaces; sawcutting; formwork; forming; reinforcing; doweling; placing materials; finishing, tooling, and jointing; curing; protecting; slump tests; compression tests; other specified testing;
- l. permitting; safety; street cleaning;
- m. installing erosion control measures prior to and during construction; providing on-going maintenance of erosion control measures until seeding and paving are established;
- n. initial clean-up and restoration;
- o. installing and removing temporary structures, signs, and fencing; removing and replacing signs, mailboxes, fencing, landscaping, and other items; and,
- p. other Incidental Work necessary to complete the Work as specified and as indicated on the Drawings.

1.03 Pay Items

Item 1 Mobilization, Demobilization, Bonds, and Insurance (LSUM)

Description: The Work for Mobilization, Demobilization, Bonds, and Insurance shall include all costs associated with mobilization; demobilization; bonds; insurance; and digital recording of existing conditions as specified in the Contract Documents. The price of this item shall be an amount not to exceed 5 percent of the total bid price.

Measurement: No measurement will be made.

Basis of Payment: Mobilization, Demobilization, Bonds, and Insurance will be paid for at the contract lump sum (LSUM) price listed in the itemized Bid Attachment. Not more than 60 percent of this item will be paid at the time the contractor has mobilized and started Work. The remaining 40 percent will be paid after all Work is complete and ready for final payment and all equipment and materials have been demobilized.

Item 2 Construction Engineering (LSUM)

Description: The Work for Construction Engineering shall include all costs associated with submittals, staking, and layout including personnel, equipment, and supplies to establish control points and monuments; establish survey centerlines and rights-of-way; run level circuits; locate utilities; set stakes for structures, pipes, subgrade, curbs, road base, road pavement, step pool stormwater conveyance systems, and other control elevations necessary for the construction of the project. The price of this item shall be an amount not to exceed 5 percent of the total bid price.

Measurement: No measurement will be made.

Basis of Payment: Construction Engineering will be paid for at the contract lump sum (LSUM) price listed in the itemized Bid Attachment. Payment will be based on the percentage of Work completed for this specific pay item, as determined by the Engineer.

Item 3 Erosion and Sediment Control (LSUM)

Description: The Work for Erosion and Sediment Control shall include preparation of areas to receive temporary erosion control measures, including removing undesirable debris such as construction materials, woody debris, rocks, sediment, etc.; providing and installing temporary erosion control measures including fiber filtration tubes, check dams, inlet protection, construction entrances, concrete washouts, temporary seeding, temporary mulch, temporary erosion control blanket, etc.; on-going maintenance of the erosion control measures until seeding or pavement has been established; removing any temporary erosion control measures at the completion of the Work; and all Incidental Work necessary for a complete installation as specified and as shown on the Drawings.

Measurement: No measurement will be made.

Basis of Payment: Erosion and Sediment Control will be paid for at the contract lump sum (LSUM) price listed in the itemized Bid Attachment. Payment will be based on the percentage of Work completed for this specific pay item, as determined by the Engineer.

Item 4 Maintenance of Traffic (LSUM)

Description: The Work for Maintenance of Traffic shall include providing and installing signage, flaggers, barrels, barricades, and other temporary traffic control facilities; developing detailed traffic control plans, including detour plans (if required); and all Incidental Work necessary to maintain traffic throughout the construction of the project in accordance with the Drawings, the Specifications, and requirements of local, county, and state agencies having jurisdiction over the project area. The price of this item shall be an amount not to exceed 5 percent of the total bid price.

Measurement: No measurement will be made.

Basis of Payment: Maintenance of Traffic will be paid for at the contract lump sum (LSUM) price listed in the itemized Bid Attachment. Payment will be based on the

percentage of Work completed for this specific pay item, as determined by the Engineer.

Item 5 Clearing and Grading – Shorewood Dr. Limits (LSUM)

Description: The Work for Clearing and Grading – Shorewood Dr. Limits, shall be located within the limits of construction located westerly of the head of the ravine, and shall include clearing; grubbing; stripping and stockpiling topsoil; tree protection; tree trimming; tree removal, including removing, hauling, and disposing of trees, stumps, vegetation, fences, and other material and debris; miscellaneous earthwork and/or embankment material, including hauling, placing, and spreading; miscellaneous earthwork and/or embankment construction, including filling, backfilling, compaction, and rough grading; removing, hauling, and disposing of miscellaneous earthwork and/or embankment material; and all Incidental Work necessary for a complete installation as specified and as indicated in the Drawings.

Measurement: Clearing and Grading will be measured on a lump sum (LSUM) basis.

Basis of Payment: Clearing and Grading will be paid for at the contract lump sum (LSUM) price listed in the itemized Bid Attachment. Payment will be based on the percentage of Work completed for this specific pay item, as determined by the Engineer.

Item 6 Pavement Removal, All Types (SYS)

Description: The Work for Pavement Removal, All Types shall include saw cutting; pavement removal; hauling and off-site disposal of pavement debris; and all Incidental Work necessary for a complete removal as specified and as indicated on the Drawings.

Measurement: Pavement Removal, All Types will be measured on a per square yard (SYS) basis for the actual area of pavement removed within the limits shown on the Drawings. Unauthorized work beyond the limits shown on the Drawings will not be measured for payment.

Basis of Payment: Pavement Removal, All Types will be paid for at the contract unit price per square yard (SYS) of pavement removed as listed in the itemized Bid Attachment. Payment will not be granted for unauthorized pavement removal.

Item 7 Curb Removal, All Types (LFT)

Description: The Work for Curb Removal, All Types shall include saw cutting; curb removal; hauling and off-site disposal of curb debris; and all Incidental Work necessary for a complete removal as specified and as indicated on the Drawings.

Measurement: Curb Removal, All Types will be measured on a per linear foot (LFT) basis for the actual length of curb removed within the limits shown on the Drawings. Unauthorized work beyond the limits shown on the Drawings will not be measured for payment.

Basis of Payment: Curb Removal, All Types will be paid for at the contract unit price per linear foot (LFT) of curb removed as listed in the itemized Bid Attachment. Payment will not be granted for unauthorized curb removal.

Item 8 Abandon Pipe (Varying Sizes) (CYS)

Description: The Work for Abandon Pipe shall include excavating; bulkheading and filling pipe completely with flowable fill; filling, backfilling, and grading; and all Incidental Work necessary for a complete abandonment as specified and as shown on the Drawings.

Measurement: Abandon Pipe will be measured on a per cubic yard (CYS) basis for the actual volume of flowable fill used to abandon pipe within the limits shown on the Drawings. Unauthorized work beyond the limits shown on the Drawings will not be measured for payment.

Basis of Payment: Payment for Abandon Pipe will be made at the contract unit price per cubic yard (CYS) of flowable fill used to abandon pipe as listed in the Itemized Bid Attachment. Payment will not be granted for unauthorized work.

Item 9 Pipe Removal (Varying Sizes) (LFT)

Description: The Work for Pipe Removal shall include excavating; removing, hauling, and off-site disposal of pipe; filling, backfilling, and grading; and all Incidental Work necessary for a complete removal as specified and as indicated on the Drawings.

Measurement: Pipe Removal will be measured on a per linear foot (LFT) basis for the size and length of pipe removed within the limits shown on the Drawings. Unauthorized work beyond the limits shown on the Drawings will not be measured for payment.

Basis of Payment: Pipe Removal will be paid for at the contract unit price per linear foot (LFT) of pipe removed as listed in the itemized Bid Attachment. Payment will not be granted for unauthorized work.

Item 10 Abandon Structure (CYS)

Description: The Work for Abandon Structure shall include excavating; removing, hauling, and off-site disposal of portions of existing structures and associated debris; filling structures completely with flowable fill and, if desired, ballast; filling, backfilling, and grading; and all Incidental Work necessary for a complete abandonment as specified and as shown on the Drawings.

Measurement: Abandon Structure will be measured on a per cubic yard (CYS) basis for the actual volume of flowable fill used to abandon structures within the limits shown on the Drawings. Unauthorized work beyond the limits shown on the Drawings will not be measured for payment.

Basis of Payment: Payment for Abandon Structures will be made at the applicable contract unit price per cubic yard (CYS) of flowable fill used to abandon structures as listed in the Itemized Bid Attachment. Payment will not be granted for unauthorized work.

Item 11 Structure Removal (Varying Sizes and Types) (EACH)

Description: The Work for Structure Removal shall include excavating; removing, hauling, and off-site disposal of existing structures and associated debris; filling, backfilling, and grading; and all Incidental Work necessary for a complete removal as specified and as indicated on the Drawings.

Measurement: Structure Removal will be measured on a per each (EACH) basis for each structure removed within the limits shown on the Drawings. Unauthorized work beyond the limits shown on the Drawings will not be measured for payment.

Basis of Payment: Payment for Structure Removal will be made at the applicable contract unit price per each (EACH) for each structure removed as listed in the itemized Bid Attachment. Payment will not be granted for unauthorized work.

Items 12-13 Pipe, Varying Sizes and Types (LFT)

Description: The Work for Pipe shall include excavation; sheeting and bracing; trenching; bedding; pipe; fittings, adaptors, couplings, and other appurtenances; haunching; initial backfill; final backfill; compaction; preparation for restoration or pavement replacement; field quality control; and all Incidental Work necessary for a complete installation as specified and as indicated on the Drawings.

Measurement: Pipe will be measured horizontally along the centerline of the pipe on a per linear foot (LFT) basis from the center of the upstream structure to the center of the downstream structure. The actual length of pipe will be measured where there is no structure connection.

Basis of Payment: Pipe will be paid for at the contract unit price per linear foot (LFT) of pipe installed for each size and type listed in the itemized Bid Attachment.

Items 14-16 Pipe, Varying Sizes and Types, w/Granular Backfill (LFT)

Description: The Work for Pipe w/ Granular Backfill shall include excavation; sheeting and bracing; trenching; bedding; pipe; fittings, adaptors, couplings, and other appurtenances; haunching; initial backfill; final backfill; compaction; preparation for restoration or pavement replacement; field quality control; and all Incidental Work necessary for a complete installation as specified and as indicated on the Drawings.

Granular backfill is required within the Pavement/Structure Loading Zone. If any portion of the pipe trench is within the Pavement/Structure Loading Zone, the entire trench width in that portion shall receive granular backfill. Pavement/Structure Loading Zone areas are indicated on the Drawings; however, the Contractor is responsible for abiding by the granular backfill requirements in other areas, should pipe alignments be adjusted and moved into the Pavement/Structure Loading Zone during construction.

Measurement: Pipe w/ Granular Backfill will be measured horizontally along the centerline of the pipe on a per linear foot (LFT) basis from the center of upstream structure to center of downstream structure. The actual length of pipe will be measured where there is no structure connection.

Basis of Payment: Pipe w/ Granular Backfill will be paid for at the contract unit price per linear foot (LFT) of pipe installed for each size and type listed in the itemized Bid Attachment.

Item 17 Inlet, Type 1 (EACH)

Description: The Work for Inlet, Type 1 shall include excavation; sheeting and bracing; bedding; structure sections; structure joint materials, including flexible watertight seals; connecting existing or new pipes to structures, including core drilling, modifying openings, and non-shrink grout; fittings, adaptors, couplings, and other appurtenances; installing castings, including adjusting rings; filling, backfilling, and grading; and all Incidental Work necessary for a complete installation as specified and as indicated on the Drawings.

Measurement: Inlet, Type 1 will be measured on a per each (EACH) basis for the actual quantity of structures installed within the limits shown on the Drawings.

Basis of Payment: Inlet, Type 1 will be paid for at the contract unit price per each (EACH) structure installed as listed in the itemized Bid Attachment. Payment will not be granted for additional material in cases of over-excavation.

Item 18 Inlet, Type 3 (EACH)

Description: The Work for Inlet, Type 3 shall include excavation; sheeting and bracing; bedding; structure sections; structure joint materials, including flexible watertight seals; connecting existing or new pipes to structures, including core drilling, modifying openings, and non-shrink grout; fittings, adaptors, couplings, and other appurtenances; installing castings, including adjusting rings; filling, backfilling, and grading; and all Incidental Work necessary for a complete installation as specified and as indicated on the Drawings.

Measurement: Inlet, Type 3 will be measured on a per each (EACH) basis for the actual quantity of structures installed within the limits shown on the Drawings.

Basis of Payment: Inlet, Type 3 will be paid for at the contract unit price per each (EACH) structure installed as listed in the itemized Bid Attachment. Payment will not be granted for additional material in cases of over-excavation.

Item 19 Storm Manhole, Type 1 (EACH)

Description: The Work for Storm Manhole, Type 1 shall include excavation; sheeting and bracing; structure joint materials, including flexible watertight seals; connecting existing or new pipes to structures, including core drilling, modifying openings, and non-shrink grout; fittings, adaptors, couplings, and other appurtenances; installing and flow channels and benches; installing castings, including adjusting rings; filling, backfilling, and grading; and all Incidental Work necessary for a complete installation as specified and as indicated on the Drawings.

Measurement: Storm Manhole, Type 1 will be measured on a per each (EACH) basis for the actual quantity of structures installed within the limits shown on the Drawings.

Basis of Payment: Storm Manhole, Type 1 will be paid for at the contract unit price per each (EACH) structure installed as listed in the itemized Bid Attachment. Payment will not be granted for additional material in cases of over-excavation.

Item 20 Precast Concrete End Section, Varying Sizes (EACH)

Description: The Work for Precast Concrete End Section shall include excavation; sheeting and bracing; trenching; bedding; end section, including animal guard; fittings, adaptors, couplings, and other appurtenances; haunching; initial backfill; final backfill; compaction; preparation for restoration or pavement replacement; field quality control; and all Incidental Work necessary for a complete installation as specified and as indicated on the Drawings.

Measurement: Precast Concrete End Section will be measured on a per each (EACH) basis for the actual quantity of end sections installed within the limits shown on the Drawings.

Basis of Payment: Precast Concrete End Section will be paid for at the contract unit price per each (EACH) precast concrete end section installed for each size listed in the itemized Bid Attachment.

Item 21 Concrete Rolled Curb (LFT)

Description: The Work for Concrete Rolled Curb shall include compacted aggregate base; formwork; reinforcement; connecting to existing adjacent curb and gutter, including doweling and adjusting to variable curb height; concrete, including placing and forming; finishing, tooling, and jointing; sealing; and all Incidental Work necessary for a complete installation as specified and as indicated on the Drawings.

Measurement: Concrete Rolled Curb will be measured on a per linear foot (LFT) basis for the actual length of curb installed, to the next nearest joint from the limits shown on the Drawings. Unauthorized work beyond the limits shown on the Drawings will not be measured for payment.

Basis of Payment: Concrete Rolled Curb will be paid for at the contract unit price per linear foot (LFT) of curb installed as listed in the itemized Bid Attachment. Payment will not be granted for unauthorized work.

Item 22 Milling, Varying Depths (SYS)

Description: The Work for Milling shall include approach, transition, scarification, and profiling of the existing pavement surface at variable depths, to provide a smooth transition from new pavement to the termini of the existing pavement; and all Incidental Work necessary for a complete installation as specified and as indicated on the Drawings.

Measurement: Milling will be measured on a per square yard (SYS) basis for the area of milling completed within the limits shown on the Drawings, excluding the width of the pipe trench and/or full depth pavement repair area. Unauthorized work beyond the limits shown on the Drawings will not be measured for payment.

Basis of Payment: Milling will be paid for at the contract unit price per square yard (SYS) of asphalt pavement surface milled for each depth listed in the itemized Bid Attachment. Payment will not be granted for unauthorized milling.

Item 23 Compacted Aggregate Base, No. 53, Varying Depths (TON)

Description: The Work for Compacted Aggregate Base, No. 53 shall include subgrade; coarse aggregate, including placing and compacting; geogrid, including placing; preparation for pavement; and all Incidental Work necessary for a complete installation as specified and as indicated on the Drawings.

Measurement: Compacted Aggregate Base, No. 53 will be measured on a per ton (TON) basis for the amount of coarse aggregate installed within the limits shown on the Drawings. Unauthorized work beyond the limits shown on the Drawings will not be measured for payment.

Basis of Payment: Compacted Aggregate Base, No. 53 will be paid for at the contract unit price per ton (TON) of coarse aggregate installed for each depth listed in the Itemized Bid Attachment. Supply weight tickets documenting the actual amount of coarse aggregate installed for payment. Payment will not be granted for unauthorized work.

Item 24 HMA Intermediate, Varying Types and Depths (TON)

Description: The Work for HMA Intermediate shall include preparation for pavement, including subsurface preparation; HMA mixture; tack coat; density testing; and all Incidental Work necessary for a complete installation as specified and as indicated on the Drawings.

Measurement: HMA Intermediate will be measured on a per ton (TON) basis for the actual amount of hot mix asphalt mixture installed within the limits shown on the Drawings. Unauthorized work beyond the limits shown on the Drawings will not be measured for payment.

Basis of Payment: HMA Intermediate will be paid for at the contract unit price per ton (TON) of hot mix asphalt mixture installed for each type and depth listed in the itemized Bid Attachment. Supply weight tickets documenting the actual amount of hot mix asphalt installed for payment. Payment will not be granted for unauthorized work.

Item 25 HMA Surface, Varying Types and Depths (TON)

Description: The Work for HMA Surface shall include preparation for pavement, including subsurface preparation; HMA mixture; tack coat; density testing; adjusting utility frames and covers; joint routing; joint sealant; replacing pavement markings; and all Incidental Work necessary for a complete installation as specified and as indicated on the Drawings.

Measurement: HMA Surface will be measured on a per ton (TON) basis for the actual amount of hot mix asphalt mixture installed within the limits shown on the Drawings. Unauthorized work beyond the limits shown on the Drawings will not be measured for payment.

Basis of Payment: HMA Surface will be paid for at the contract unit price per ton (TON) of hot mix asphalt mixture installed for each type and depth listed in the itemized Bid Attachment. Supply weight tickets documenting the actual amount of HMA Surface installed for payment. Payment will not be granted for unauthorized work outside the limits shown on the Drawings.

Item 26 Final Cleanup and Restoration – Shorewood Dr. Limits (LSUM)

Description: The Work for Final Cleanup and Restoration – Shorewood Dr. Limits, shall be located within the limits of construction located westerly of the head of the ravine, and shall include removing excess material and debris; finish grading; topsoil and/or compost; plant seed; fertilizer; mulch; permanent erosion control blanket or flexible growth medium; initial 30-day watering period; and all Incidental Work necessary for a complete installation as specified and as shown on the Drawings.

Measurement: No measurement will be made.

Basis of Payment: Final Cleanup and Restoration will be paid for at the contract lump sum (LSUM) price listed in the itemized Bid Attachment. Payment will not be made until such time as the site cleanup and restoration are 100 percent complete, as determined by the Engineer.

Item 27 Clearing and Grading – Ravine Limits (LSUM)

Description: The Work for Clearing and Grading – Ravine Limits shall be located within the limits of construction located easterly of the head of the ravine, and shall include clearing; grubbing; stripping topsoil; stockpiling topsoil; tree trimming; tree protection; removing, hauling, and disposing of trees, stumps, vegetation, fences, and other material and debris; miscellaneous earthwork and/or embankment material, including hauling, placing, and spreading; miscellaneous earthwork and/or embankment construction, including filling, backfilling, compaction, and rough grading; removing, hauling, and disposing of miscellaneous earthwork and/or embankment material; and all Incidental Work necessary for a complete installation as specified and as indicated in the Drawings.

Measurement: Clearing and Grading will be measured on a lump sum (LSUM) basis.

Basis of Payment: Clearing and Grading will be paid for at the contract lump sum (LSUM) price listed in the itemized Bid Attachment. Payment will be based on the percentage of Work completed for this specific pay item, as determined by the Engineer.

Item 28 SPSC Filter Bed Media, Fill Sand (TON)

Description: The Work for SPSC Filter Bed Media, Fill Sand shall include fill sand (e.g., fill sand, bank run sand), including hauling, placing, spreading, and shaping; compacting; and all Incidental Work necessary for a complete installation as specified and as indicated on the Drawings.

Measurement: SPSC Filter Bed Media, Fill Sand will be measured on a per ton (TON) basis for the actual amount of fill sand installed within the limits shown on the

Drawings. Unauthorized work beyond the limits shown on the Drawings will not be measured for payment.

Basis of Payment: SPSC Filter Bed Media, Fill Sand will be paid for at the contract unit price per ton (TON) of fill sand installed as listed in the itemized Bid Attachment. Supply weight tickets documenting the actual amount of fill sand installed for payment. Payment will not be granted for unauthorized work.

Item 29 SPSC Filter Bed Media, Wood Chips (CYS)

Description: The Work for SPSC Filter Bed Media, Wood Chips shall include wood chips, including hauling, placing, spreading, and shaping; compacting; and all Incidental Work necessary for a complete installation as specified and as indicated on the Drawings.

Measurement: SPSC Filter Bed Media, Wood Chips will be measured on a per cubic yards (CYS) basis for the actual amount of wood chips installed within the limits shown on the Drawings. Unauthorized work beyond the limits shown on the Drawings will not be measured for payment.

Basis of Payment: SPSC Filter Bed Media, Wood Chips will be paid for at the contract unit price per cubic yards (CYS) of wood chips installed as listed in the itemized Bid Attachment. Payment will not be granted for unauthorized work.

Item 30 SPSC Riffle Weirs, Riffle Mix (TON)

Description: The Work for SPSC Riffle Weirs, Riffle Mix shall include riffle mix (e.g., INDOT rip rap revetment), including hauling, placing, spreading, and shaping to construct riffle weirs and runs; pea gravel (e.g., INDOT No. 93PG, No. 8, No. 9, or No. 11 Coarse Aggregate) and fill sand, including hauling, placing, and washing riffle weirs and runs with pea gravel and fill sand to choke voids in the riffle weirs; and all Incidental Work necessary for a complete installation as specified and as indicated on the Drawings.

Measurement: SPSC Riffle Weirs, Riffle Mix will be measured on a per ton (TON) basis for the actual amount of riffle mix installed within the limits shown on the Drawings. Unauthorized work beyond the limits shown on the Drawings will not be measured for payment.

Basis of Payment: SPSC Riffle Weirs, Riffle Mix will be paid for at the contract unit price per ton (TON) of riffle mix installed as listed in the itemized Bid Attachment. Supply weight tickets documenting the actual amount of riffle mix installed for payment. Payment will not be granted for unauthorized work.

Item 31 SPSC Riffle Weirs, Footer Boulders (TON)

Description: The Work for SPSC Riffle Weirs, Footer Boulders shall include boulders (e.g., outcropping stone, thick outcropping stone), including hauling, placing, and shaping to construct riffle weir footers; geotextile, including placing; and all Incidental Work necessary for a complete installation as specified and as indicated on the Drawings.

Measurement: SPSC Riffle Weirs, Footer Boulders will be measured on a per ton (TON) basis for the actual amount of boulders installed within the limits shown on the Drawings. Unauthorized work beyond the limits shown on the Drawings will not be measured for payment.

Basis of Payment: SPSC Riffle Weirs, Footer Boulders will be paid for at the contract unit price per ton (TON) of boulders installed as listed in the itemized Bid Attachment. Supply weight tickets documenting the actual amount of boulders installed for payment. Payment will not be granted for unauthorized work.

Item 32 SPSC Cascade Weirs, Cascade Boulders (TON)

Description: The Work for SPSC Cascade Weirs, Cascade Boulders shall include boulders (e.g., outcropping stone, thick outcropping stone), including hauling, placing, and shaping to construct cascade weirs and cascade weir footers; geotextile, including placing; and all Incidental Work necessary for a complete installation as specified and as indicated on the Drawings.

Measurement: SPSC Cascade Weirs, Cascade Boulders will be measured on a per ton (TON) basis for the actual amount of boulders installed within the limits shown on the Drawings. Unauthorized work beyond the limits shown on the Drawings will not be measured for payment.

Basis of Payment: SPSC Cascade Weirs, Cascade Boulders will be paid for at the contract unit price per ton (TON) of boulders installed as listed in the itemized Bid Attachment. Supply weight tickets documenting the actual amount of cascade boulders installed for payment. Payment will not be granted for unauthorized work.

Item 33 SPSC Cascade Weirs, Riffle Mix (TON)

Description: The Work for SPSC Cascade Weirs, Riffle Mix shall include riffle mix (e.g., INDOT rip rap revetment), including hauling, placing, spreading, and shaping to construct cascade weir aprons and runs; pea gravel (e.g., INDOT No. 93PG, No. 8, No. 9, or No. 11 Coarse Aggregate) and fill sand, including hauling, placing, and washing aprons and runs with pea gravel and fill sand to choke voids in aprons and runs; and all Incidental Work necessary for a complete installation as specified and as indicated on the Drawings.

Measurement: SPSC Cascade Weirs, Riffle Mix will be measured on a per ton (TON) basis for the actual amount of riffle mix installed within the limits shown on the Drawings. Unauthorized work beyond the limits shown on the Drawings will not be measured for payment.

Basis of Payment: SPSC Cascade Weirs, Riffle Mix will be paid for at the contract unit price per ton (TON) of riffle mix installed as listed in the itemized Bid Attachment. Supply weight tickets documenting the actual amount of riffle mix installed for payment. Payment will not be granted for unauthorized work outside the limits shown on the Drawings.

Item 34 Final Cleanup and Restoration – Ravine Limits (LSUM)

Description: The Work for Final Cleanup and Restoration – Ravine Limits shall be located within the limits of construction located easterly of the head of the ravine, and shall include removing excess material and debris; finish grading; topsoil and/or compost; plant seed; mulch; permanent erosion control blanket or flexible growth medium; plant plugs; initial 30-day watering period; and all Incidental Work necessary for a complete installation as specified and as shown on the Drawings.

Measurement: No measurement will be made.

Basis of Payment: Final Cleanup and Restoration – Ravine Limits will be paid for at the contract lump sum (LSUM) price listed in the itemized Bid Attachment. Payment will not be made until such time as the site cleanup and restoration are 100 percent complete, as determined by the Engineer.

Item O.1 Over-Excavation of Poor Soils w/Granular Backfill (Item As Ordered By Engineer) (CYS)

Description: The Work for Over-Excavation of Poor Soils w/Granular Backfill shall include excavation, removal, and off-site disposal of poor soils within the pipe trench, as identified by the Engineer and agreed upon by the Owner; replacement of such excavated material with granular backfill to provide a suitable foundation for the pipe; and all Incidental Work necessary for complete removal and replacement of poor soils, as specified.

Measurement: Over-Excavation of Poor Soils w/Granular Backfill will be measured on a per cubic yard (CYS) basis for the actual amount of material removed from the pipe trench, below the specified pipe bedding depth, and as measured in the field during the performance of the work. Unauthorized work not first identified by the Engineer and agreed upon by the Owner will not be measured for payment.

Basis of Payment: Over-Excavation of Poor Soils w/Granular Backfill will be paid for at the contract unit price per cubic yard (CYS) of material removed from the pipe trench as listed in the itemized Bid Attachment. Payment will not be granted for unauthorized work first identified by the Engineer and agreed upon by the Owner.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

-END-

[THIS PAGE INTENTIONALLY LEFT BLANK]

DIVISION 2 – SITE WORK

SECTION 02050 - DEMOLITION

PART 1 - GENERAL

1.01 Summary

- A. Section Includes: Removal of existing concrete sidewalks, curbs, manholes, inlets, culverts, pipes, end sections, footings for lighting and signs, asphalt pavement, concrete pavement, and other structures, materials, and debris.
- B. Related Sections
 - 1. Section 02101 – Stormwater Pollution Prevention and Erosion Control
 - 2. Section 02220 – Trenching, Backfilling and Compaction for Utilities
 - 3. Section 02501 – Abandonment of Sewer Systems

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.01 Coordination

- A. Coordinate all Work with Engineer to assure a minimum of interruptions to drainage systems and traffic.
- B. Complete removal and demolition Work to the satisfaction of the Engineer.

3.02 Asphalt Removal

- A. When removing asphalt adjacent to existing concrete or asphalt, saw cut asphalt to be removed to a straight line.

3.03 Concrete Removal

- A. Remove concrete to the next adjacent joint whenever possible.
- B. When removing concrete adjacent to existing concrete or asphalt, saw cut concrete to be removed to a straight line.
- C. When removing concrete adjacent to buildings, take care to not damage the building. Repair any damage incurred to the building with no additional compensation.

- D. It is the Contractor's responsibility to determine the best way to remove concrete at buildings. If the existing sidewalk is an integral part of the building, save the sidewalk as close to the building as possible, at the direction of the Engineer.
- E. Where concrete sidewalk is removed over existing basement vaults, take care to not damage the structural components of the vault.

3.04 Structures

- A. Unless otherwise directed, abandon existing inlets, manholes, and other structures by filling completely with flowable fill in accordance with Section 02501.
- B. When removing existing inlets, manholes, end sections, footings, and other structures, remove such structures completely.
- C. Where inlets, manholes, end sections, footings, and other structures are removed, backfill the void with granular backfill in accordance with Section 02220.

3.05 Piping

- A. Unless otherwise directed, abandon existing storm sewer and culvert piping by filling completely with flowable fill in accordance with Section 02501.
- B. When removing existing storm sewer and culvert piping, remove such pipes completely.
- C. Where storm sewer and culvert piping is removed, backfill the void with granular backfill, in accordance with Section 02220.

3.06 Disposal

- A. Set aside all castings and grates which are not broken for pick up by the Owner. If the Owner does not claim the castings and grates, they shall become the property of the Contractor and shall immediately be removed from the site.
- B. Remove debris from the site on a daily basis.
- C. Dispose of all material in accordance with local, state, and federal rules, regulations, and ordinances. Obtain any permits necessary to properly dispose of materials and debris.

-END-

SECTION 02051 - ABANDONMENT OF SEWER SYSTEMS

PART 1 - GENERAL

1.01 Summary

A. Section Includes

1. Abandonment in place, by cutting and capping or plugging, of existing sewers, force mains, and service lines.
2. Abandonment in place of existing sewers, force mains, service lines, manholes, and other sewer structures using flowable fill. Flowable fill may be utilized when abandoning existing sewer systems underneath roadways, paved areas, and other sensitive areas, as indicated on the Drawings, and as ordered by the Engineer, as field conditions dictate.

B. Related Sections

1. Section 02220 – Trenching, Backfilling and Compaction for Utilities
2. Section 02535 – Pavement and Sidewalk Repair and Replacement
3. Section 02902 – Landscaping for Utilities

1.02 Submittals

A. Project Data

1. Plugs and Caps
 - a. Type(s), source(s), and technical specifications for all plugs and caps
2. Flowable Fill Mix Design
 - a. Provide mix design which includes:
 - 1) List of all ingredients
 - 2) Source of the materials
 - 3) Gradation of aggregates
 - 4) Names of admixtures and dosage rates
 - 5) Batch weights
 - 6) Mix design designation number
 - b. If requested, provide a trial batch demonstration.
 - c. Provide test data from a laboratory inspected by the Cement and Concrete Reference Laboratory that shows the proposed mix design is in accordance with the requirements listed in this specification.
3. Flowable Fill Installation Plan
 - a. Provide a plan detailing the operation that will be used to install flowable fill, including: equipment to be used, including concrete or grout pumps; technical information regarding the installation of the flowable fill, including pumping rate, pumping pressure, and methods for controlling pumping rate and pressure; bulkhead design, including materials to be used to construct the bulkheads; port and vent design, including materials to be used to construct the ports and vents; and, number of flowable fill applications per system component, if more than one.

4. Sewer System Abandonment Plan
 - a. Provide a plan detailing the sewer system abandonment, including: proposed abandonment sequence, including abandonment via cutting and capping and via flowable fill; bypass pumping requirements, if any; and, any other information pertinent to the completion of the work.

B. Quality Control Submittals

1. Flowable Fill Test Results
 - a. Unconfined Compressive Strength
 - b. Flow Consistency
 - c. Setting and Early Strength
2. Delivery Tickets

1.03 Quality Assurance

A. Qualifications

1. Provide the services of a qualified, independent testing laboratory to perform all field tests.

PART 2 - PRODUCTS

2.01 Plugs and Caps

- A. Grout Plugs: Cement-based dry-pack grout conforming to ASTM C1107, Grade B or C.
- B. Manufactured Plugs and Caps: Commercially available manufactured plug or cap specifically designed and manufactured to be used with pipe being abandoned.

2.02 Flowable Fill

- A. Unconfined compressive strength: minimum 50 psi and maximum 150 psi (56 days). Present at least three acceptable strength tests for proposed mix design in mix design submittal.
- B. Placement characteristics: Self-leveling, self-compacting, flowable material.
- C. Shrinkage characteristics: non-shrink.
- D. Water bleeding: not to exceed 2 percent, according to ASTM C940.
- E. Minimum wet density: 90 pounds per cubic foot.
- F. Provide removable flowable fill material which meets the requirements of INDOT Standard Specifications Section 213 and Section 904 classification for Type 4 Structure Backfill.

2.03 Ballast

- A. Ballast Material: Natural rock or broken, unreinforced concrete with minimum size equal to at least 10 times maximum aggregate size of the flowable fill and maximum dimension of 24 inches. The maximum dimension shall not be more than 20 percent of minimum dimension of space to be filled.
- B. Ballast Composition: Free of regulated waste material.

PART 3 - EXECUTION

3.01 Abandonment of Sewers and Force Mains Via Cutting and Capping

- A. Do not begin cut and cap abandonment operations until replacement sewer or force main has been constructed and tested, all service lines have been connected to replacement sewer or force main, and replacement sewer or force main has been approved for use by Engineer.
- B. Excavate overburden from sewers and force mains to be abandoned in place at locations indicated on Drawings, in accordance with Section 02220. Cut existing sewer or force main, at location shown on Drawings, to provide an end surface perpendicular to the longitudinal axis of the pipe and suitable for cap or plug to be installed. Remove completely those segments of sewer or force main located outside of those segments to be abandoned in place, as specified on the Drawings.
- C. Prior to capping or plugging sewer or force main, check for other sources feeding the sewer or force main. Unless otherwise indicated on the Drawings, or otherwise ordered by Engineer, inspect sewers and force mains to be abandoned in place using suitable closed circuit television inspection equipment to identify connections. If previously unidentified connections are found during such inspection work, notify Engineer immediately.
- D. Clean and prepare inside surface of sewer or force main to at least 12 inches from end of pipe to achieve firm bond and seal of grout plug or manufactured plug to pipe surface. Similarly, clean and prepare exterior of pipe to at least 12 inches from end of pipe if manufactured cap is to be used.
- E. Install cap or plug on sewer or force main. When using grout plug, place plug approximately 12 inches from end of pipe and fill remaining pipe end completely with dry-pack grout mixture. When using manufactured plug or cap, install fitting as recommended by manufacturer's instructions, to form water tight seal. The sewer or force main to be abandoned in place shall not be "valved off" and shall not be capped or plugged other than as shown on Drawings and/or in accordance with the accepted submittals.
- F. Install flowable fill around cap or plug and over and around end of sewer or force main to help ensure cap or plug is water tight.

- G. After sewer or force main to be abandoned in place has been cut and capped, remove and dispose of any surface identifications, such as cleanouts or valves. If such surface connections have a piped connection to the abandoned sewer or force main, demolish and remove upper portion of such piped connection, to minimum depth of 2 feet below finished grade, and cap or plug such piped connection in accordance with the above.
- H. Backfill excavations in accordance with Section 02220.
- I. Restore pavement, sidewalks, and curbs and gutters in accordance with Section 02535 and lawn and sustainable plant areas in accordance with Section 02902.
- J. Mark location of abandoned sewers and force mains on Record Drawings, noting means and methods used to abandon each segment.

3.02 Abandonment of Service Lines Via Cutting and Capping

- A. Do not begin cut and cap abandonment operations until replacement service lines have been constructed and tested, all replacement service lines have been connected, and replacement service lines have been approved for use by Engineer.
- B. Service lines to be abandoned in place shall be cut and capped where such service lines connect to the sewer or force main, unless otherwise indicated on the Drawings or otherwise ordered by the Engineer.
- C. Excavate overburden from service lines to be abandoned in place at locations indicated on Drawings, in accordance with Section 02200. Cut existing service line, at location shown on Drawings, to provide an end surface perpendicular to the longitudinal axis of the pipe and suitable for cap or plug to be installed. Remove completely those segments of service lines located outside of those segments to be abandoned in place, as specified on the Drawings.
- D. Prior to capping or plugging service line, check for other sources feeding the service line. If other sources are found, notify Engineer immediately.
- E. Clean and prepare inside surface of service line to at least 12 inches from end of pipe to achieve firm bond and seal of grout plug or manufactured plug to pipe surface. Similarly, clean and prepare exterior of pipe to at least 12 inches from end of pipe if manufactured cap is to be used.
- F. Install cap or plug on service line and, if appropriate, associated clamp and/or concrete thrust block. When using grout plug, place plug approximately 12 inches from end of pipe and fill remaining pipe end completely with dry-pack grout mixture. When using manufactured plug or cap, install fitting as recommended by manufacturer's instructions, to form water tight seal. The service line to be abandoned in place shall not be "valved off" and shall not be capped or plugged other than as shown on Drawings and/or in accordance with the accepted submittals.

- G. Install flowable fill around cap or plug and over and around end of service line to help ensure cap or plug is water tight.
- H. After service line to be abandoned in place has been cut and capped, remove and dispose of any surface identifications, such as cleanouts or valves. If such surface connections have a piped connection to the abandoned service line, demolish and remove upper portion of such piped connection, to minimum depth of 2 feet below finished grade, and cap or plug such piped connection in accordance with the above.
- I. Backfill excavations in accordance with Section 02220.
- J. Restore pavement, sidewalks, and curbs and gutters in accordance with Section 02535 and lawn and sustainable plant areas in accordance with Section 02902.
- K. Mark location of abandoned service lines on Record Drawings, noting means and methods used to abandon each segment.

3.03 Preparation for Abandonment Via Flowable Fill

- A. Flowable fill mix design, flowable fill installation plan, sewer system abandonment plan, and other submittals required above shall be accepted by the Engineer prior to the start of flowable fill abandonment operations. Notify the Engineer at least 24 hours in advance of starting flowable fill abandonment operations.
- B. Select equipment, including concrete or grout pumps, and develop flowable fill installation plan with sufficient safety and care to avoid damage to existing utilities, structures, and improvements during installation. Plan to operate equipment, including pumping rate and pumping pressure, in a manner that will not damage or distort new or existing improvements.
- C. Unless otherwise indicated on the Drawings, or otherwise ordered by Engineer, inspect sewers, force mains, and service laterals to be abandoned in place using suitable closed circuit television inspection equipment to assess condition of pipe, locate irregularities, and identify connections. If previously unidentified connections are found during such inspection work, notify Engineer immediately. During development of flowable fill installation plan, plan to compensate for irregularities in sewer pipe, such as obstructions, open joints, or broken pipe to ensure no voids remain unfilled.
- D. Unless otherwise indicated on the Drawings, or otherwise ordered by Engineer, using suitable sewer cleaning equipment, clean areas of sewers, force mains, service lines, manholes, and other sewer structures of debris that may hinder the placement of flowable fill. Remove excessive amounts of debris, sludge, and other materials that may hinder the placement of or degrade the performance of flowable fill.
- E. Using suitable sewer cleaning equipment, or other methods acceptable to Engineer, remove excessive amounts of free water from sewers, force mains,

service lines, manholes, and other sewer structures to be abandoned in place prior to starting flowable fill abandonment operations.

3.04 Preparation for Abandonment of Sewer Structures Via Flowable Fill

- A. Perform preparation work below prior to starting flowable fill abandonment operations in manholes and other sewer structures.
- B. Remove castings from manholes and other sewer structures to be abandoned in place. Unless otherwise indicated on the Drawings, or otherwise ordered by Engineer, deliver salvaged castings to Owner for future use. If indicated on the Drawings, or otherwise approved by the Engineer, salvaged castings may be used for constructing new sewer structures.
- C. Demolish and remove upper portion of sewer structure, including precast concrete structure adjustment rings and cones and brick and mortar structure chimneys and cones, to minimum depth of 4 feet below finished grade. Sewer structure may be removed to greater depth, but shall not be removed to closer than 18 inches above the crown of the adjacent sewers or force mains.
- D. When adjacent sewers or force mains are not to be filled with flowable fill, place temporary plugs in each sewer or force main connecting to the sewer structure to be abandoned in place, in preparation for filling structure with flowable fill.

3.05 Preparation for Abandonment of Sewers, Force Mains and Service Lines Via Flowable Fill

- A. Perform preparation work below prior to starting flowable fill abandonment operations in sewers, force mains, and service lines.
- B. Excavate overburden from sewers, force mains, and service lines to be abandoned via flowable fill at the locations indicated on Drawings, in accordance with Section 02220. Cut existing sewer, force main, or service line, at location shown on Drawings, to provide an end surface perpendicular to the longitudinal axis of the pipe and suitable for bulkhead and port or vent installed. Remove completely those segments of sewers, force mains, and service lines located outside of those segments to be abandoned in place, as specified on the Drawings.
- C. In accordance with accepted flowable fill installation plan, install bulkheads and ports, consisting of 2-inch PVC pipes, which will act as injection ports or vent ports for the flowable fill installation, at each end of the sewer, force main, or service line segment to be abandoned or use other suitable methods to facilitate and contain the flowable fill installation.
- D. After sewer, force main, or service line to be abandoned via flowable fill has been bulkheaded, remove and dispose of any surface identifications, such as cleanouts or valves. If such surface connections have a piped connection to the abandoned service line, demolish and remove upper portion of such piped

connection, to minimum depth of 2 feet below finished grade, and cap or plug such piped connection in accordance with the above.

- E. When adjacent sewers, force mains, or service lines are not to be filled with flowable fill, place temporary plugs in each sewer, force main, or service line connecting to the pipe to be abandoned in place, in preparation for filling pipe with flowable fill.

3.06 Installation of Flowable Fill

- A. Abandon existing sewers, force mains, and service lines by completely filling such pipes with flowable fill. Abandon manholes and other sewer structures by completely filling those portions of such structures to be left in place with flowable fill and, if desired, ballast.
- B. In accordance with the accepted flowable fill installation plan, place flowable fill to completely fill the volume of the pipes to be abandoned in place. Continuously place flowable fill from bulkhead to bulkhead, with no intermediate injection ports. However, in no case should a single flowable fill installation exceed 500 feet in length.
- C. Place flowable fill at the downstream end of the pipe segment to be abandoned in place. Pump flowable fill through the port installed in the bulkhead at the downstream end of the pipe segment to be abandoned in place. Inject flowable fill, under pressure, through the port and into properly vented system, until flowable fill emerges from the port installed in the bulkhead at the upstream end of the pipe segment being abandoned in place. Place flowable fill with sufficient pressure to overcome friction and completely fill the volume of the pipe.
- D. If ballast is to be used, place ballast and then place flowable fill at the bottom of the sewer structure to be abandoned in place, allowing flowable fill to rise through the ballast, effectively filling all voids. Pump flowable fill through a 2-inch PVC pipe discharging at the bottom of the sewer structure, which will act as an injection port, until flowable fill emerges from the top of the ballast. Alternatively, ballast may be placed at the same time that flowable fill is being placed. If ballast is to be used, do not fill more than 50 percent of the sewer structure volume with ballast to prevent nesting and void formation.
- E. Have the flowable fill installation performed by experienced crews with equipment to monitor pumping rate and pumping pressure, and methods for calculating the volume of flowable fill installed.
- F. Remediate any flowable fill installation that does not completely fill the volume of the sewer, force main, service line, manhole, or other sewer structure to be abandoned in place, or where voids develop due to excessive shrinkage of or bleeding from the flowable fill, by installing additional flowable fill, in accordance with the above.
- G. Collect and dispose of excess flowable fill material and other debris in accordance with applicable regulations.

- H. Backfill excavations in accordance with Section 02220.
- I. Restore pavement, sidewalks, and curbs and gutters in accordance with Section 02535 and lawn and sustainable plant areas in accordance with Section 02902.
- J. Mark location of abandoned service lines on Record Drawings, noting methods and locations of abandoning each segment.

3.07 Field Quality Control

A. Tests

1. Flowable Fill Tests: Perform the following tests for flowable fill:
 - a. Unconfined Compressive Strength
 - b. Flow Test: Conduct flow consistency testing in accordance with ASTM D6103 by filling a 3-inch diameter by 6-inch high open ended cylinder placed on a smooth, nonporous, level surface. Pull the cylinder straight up within 5 seconds and measure the spread of the fill. The diameter of the spread shall be 8 inches or more with no noticeable segregation.
 - c. Setting and Early Strength Test: Determine whether the flowable fill has hardened sufficiently for loads to be applied and construction activities to continue by conducting one of the following tests:
 - 1) Penetration Resistance test in accordance with ASTM C403 – minimum value of 500 psi required for loading
 - 2) Ball Drop test in accordance with ASTM D6024 – maximum indentation diameter of less than 3 inches required for loading

-END-

SECTION 02101 - STORMWATER POLLUTION PREVENTION AND EROSION CONTROL

PART 1 - GENERAL

1.01 Summary

A. Section Includes

1. Temporary and permanent control measures used during the life of the contract to control water pollution, soil erosion, and siltation using berms, dams, dikes, gravel, riprap, mulches, grasses, and other erosion control devices or methods.
2. Temporary erosion control may include Work outside the construction limits such as borrow pit operations, equipment and material storage sites, and waste areas.

B. Related Sections

1. Section 02102 – Material Handling and Spill Prevention Plan
2. Section 02110 – Site Clearing
3. Section 02200 – Earthwork
4. Section 02902 – Landscaping for Utilities

1.02 Quality Assurance

A. Regulatory Requirements

1. Provide grass and other plant seed containers bearing a seed label tag in accordance with the requirements of the Indiana Seed Law.
2. Provide fertilizer conforming to federal and state regulations and to the standards of the Association of Official Agricultural Chemists.
3. Comply with all federal, state, and local erosion control and pollution prevention laws.

- B. Authority of Owner: The Owner has the authority to limit the surface area of erodible earth material exposed by clearing and grubbing, excavation, borrow and fill operations, and to direct the Contractor to provide immediate permanent or temporary control measures to minimize contamination of adjacent streams or other watercourses, lakes, ponds, and areas of water impoundment.

1.03 Delivery, Storage and Handling

- A. Deliver grass and other plant seed in new and unopened containers or bags.

PART 2 - PRODUCTS

2.01 Materials

- A. General: Provide materials in accordance with the requirements specified herein.

B. Lime: pulverized agricultural limestone containing calcium and magnesium nutrients used to adjust soil pH.

C. Temporary Grass Seed

1. Quick-growing species such as ryegrass, Italian ryegrass, or cereal grasses suitable to the area.
2. Use grass species that will not compete with the grasses sown later for permanent cover.
3. Application: Apply temporary seeding to all disturbed areas to be left idle for 7 days or more during the growing season unless other erosion control measures are indicated on the Drawings. Complete stabilization within 14 days.

D. Permanent Grass Seed

1. Type, mixture, and quantity to meet the application rate, as shown on the Drawings.
2. Contains no more than 5 percent inert matter.
3. Contains no objectionable weeds.

E. Bluff Plant Seed

1. Type, mixture, and quantity to meet the application rate, as shown on the Drawings.
2. Contains no more than 5 percent inert matter.
3. Contains no objectionable weeds.

F. Streambank Plant Seed

1. Type, mixture, and quantity to meet the application rate, as shown on the Drawings.
2. Contains no more than 5 percent inert matter.
3. Contains no objectionable weeds.

G. Sod

1. Type shown on the Drawings
2. Free of weeds
3. Use within 1 week of its cutting - do not allow to dry out
4. Strongly rooted sod, a minimum of 2 years old
5. Capable of growth upon planting
6. Water routinely to promote growth

H. Mulch

1. Hay, straw, fiber mats, netting, bark, or wood fiber.
2. Straw mulch shall consist of threshed straw of cereal grain such as oats, wheat, barley, rye, and rice.

3. Wood fiber shall not contain any growth or germination-inhibiting factors. Composition on air-dry weight basis shall be: 9 to 15 percent moisture, pH range from 4.5 to 6.0.
4. Free of objectionable weeds, seeds, or other material that may be detrimental to the planting being established.
5. Application: Apply mulch to all areas that have been seeded and to disturbed areas to be left idle for 7 days or more outside of the growing season unless other measures are indicated on the Drawings. Complete stabilization within 14 days.
6. Application rates:
 - a. Straw/hay mulch: 92 pounds per 1,000 square feet (2 ton/acre)
 - b. Wood fiber mulch: 46 pounds per 1,000 square feet (1 ton/acre)
 - c. Wood chips: 230 pounds per 1,000 square feet (5 ton/acre)

I. Fertilizer

1. Contains the minimum percentage of available nutrients (Nitrogen, Phosphorus, and Potash) based on soil content, seed mix and local conditions.
2. If local conditions do not indicate otherwise and soil testing is not required, provide 12-12-12 analysis fertilizer.
3. Application rate: as specified by the supplier.

J. Topsoil

1. Preserve and reuse topsoil.
2. Topsoil shall meet the following requirements:
 - a. Natural, fertile, agricultural soil, capable of sustaining vigorous grass and other plant growth
 - b. Of uniform composition throughout without admixture of subsoil
 - c. Free of stones, lumps, clods, sticks larger than one inch, sod, live plants and roots, and other extraneous matter
 - d. Free of pollutant contamination

K. Compost

1. Provide compost only from a compost producer that participates in the US Composting Council's (USCC) Seal of Testing Assurance (STA) program.
2. Provide compost produced by aerobic (biological) decomposition of organic matter.
3. Provide compost generated from acceptable compost feedstock. Acceptable compost feedstock includes, but is not limited to, the following: leaf and yard trimmings, food scraps, treated biosolids, manure, agricultural residuals, forest residuals, tree wood, bark, and paper. Do not use compost containing feedstock materials that have been treated with chemical preservatives.
4. Ensure compost does not contain any visible refuse, other physical contaminants, or any substance considered harmful to plant growth. Do not use mixed municipal solid waste compost.
5. Use compost that meets all applicable EPA 40 CFR 503 standards for Class A biosolids including the time and temperature standards.

6. Provide compost meeting the following requirements:

Parameters	Method, TMECC ¹	Requirements	
		Vegetated Compost	Unvegetated Compost
pH ²	04.11-A	5.0-8.5	N/A
Soluble Salt Concentration (electrical conductivity) ²	04.10-A	≤ 5 dS/m (mmhos/cm)	≤ 5 dS/m (mmhos/cm)
Moisture Content	03.09-A	30-60% (wet weight basis)	30-60% (wet weight basis)
Organic Matter Content	05.07-A	25-65% (dry weight basis)	25-100% (dry weight basis)
Particle Size	02.12-B	3" = 100% passing, 1" = 90-100% passing 3/4" = 65-100% passing 1/4" = 0-75% passing <u>< 6" particle length</u>	3" = 100% passing, 1" = 90-100% passing 3/4" = 65-100% passing 1/4" = 0-75% passing <u>< 6" particle length</u>
Stability (carbon dioxide evolution rate) ³	05.08-B	< 8 mg CO ₂ -C per g OM per day	N/A
Physical Contaminants (man-made inerts)	N/A	< 1% (dry weight basis)	< 1

Note: 1) Test methodologies are provided in Test Methods for the Examination of Composting and Compost (TMECC, The US Composting Council); 2) Each specific plant species requires a specific pH range. Each plant also has a salinity tolerance rating; maximum tolerable quantities are shown; and, 3) Stability rating is an area of compost science that is still evolving and, as such, other various test methods may be applicable.

L. Erosion Control Blanket: Provide North American Green BioNet SC150BN or approved equal.

M. Flexible Growth Medium: Provide Flexterra HP-FGM or approved equal.

N. Fiber Filtration Tubes

1. Natural or man-made fiber filter media encased within cylindrical tubes composed of a photodegradable mesh.
2. Performance: slowing and filtering of suspended particles in stormwater runoff. The tubes shall allow water to flow freely while providing filtration of suspended particles.

O. Geotextile Fabric for Use Under Boulders, Riprap, or Coarse Aggregate

1. Provide non-woven needle punched or heat bonded geotextile fabric consisting of strong, rot resistant, chemically stable long-chain synthetic polymer materials which are dimensionally stable relative to each other. The geotextile plastic yarn or fibers shall consist of at least 85 percent by weight of polyolefins, polyesters, or polyamides and resist deterioration from ultraviolet and heat exposure.
2. Provide geotextile meeting or exceeding the following requirements (Source: INDOT Standard Specifications 2022 (or most recent version), Section 918.02).

Test	Method, ASTM	Requirements				
		Type 1A	Type 1B	Type 2A	Type 2B	Type 3
Grab Tensile Strength, min.	D4632	200 lbs.	200 lbs.	250 lbs.	300 lbs.	250 lbs.
Grab Elongation	D4632	> 50%	< 50%	> 50%	< 50%	< 50%
CBR Puncture Strength, min.	D6241	500 lbs.	600 lbs.	625 lbs.	1,000 lbs.	875 lbs.
Trapezoid Tearing Strength, min.	D4533	80 lbs.	75 lbs.	100 lbs.	150 lbs.	60 lbs.
Deterioration in Tensile Strength due to UV degradation 500 hrs., min.	D4355 D6637	70% strength retained	70% strength retained	70% strength retained	70% strength retained	90% strength retained
Apparent Opening Size, AOS	D4751	≤ No. 80 sieve, for soils ≥ 40% passing the No. 200 sieve	≤ No. 40 sieve, for soils < 40% passing the No. 200 sieve	≤ No. 100 sieve, for soils ≥ 40% passing the No. 200 sieve	≤ No. 40 sieve, for soils < 40% passing the No. 200 sieve	≤ No. 70 sieve
Permittivity	D4491	≥ 1.2 sec ⁻¹	≥ 2.1 sec ⁻¹	≥ 0.80 sec ⁻¹	≥ 0.90 sec ⁻¹	0.28 sec ⁻¹

Note: 1) All values are minimum average roll values (MARV) as determined in accordance with ASTM D4354 in the weaker direction, except AOS size is based on maximum average roll value.

P. Other: All other materials shall meet commercial grade standards and be approved by the Engineer before being incorporated into the project.

1. Anionic polymers are not to be used for stormwater runoff treatment unless approved by IDEM.
2. Cationic polymers are prohibited.

PART 3 - EXECUTION

3.01 Examination

A. Site Verification of Conditions

1. Complete soil testing when vegetation does not establish to determine nutrients needed.
2. Coordinate soil testing services.
3. Implement resulting recommendations.

3.02 Preparation

- A. Do not start Work until the erosion and sediment control schedules and methods of operations for the applicable construction activities have been accepted by the Engineer.
- B. Coordinate and/or phase temporary erosion and sediment control measures contained herein with the permanent erosion control measures and soil stabilization methods as specified as part of this contract to assure economical, effective, and continuous erosion and sediment control throughout the construction and warranty period.

3.03 Protection

- A. Manage sediment-laden water with appropriate sediment control measures to minimize sedimentation to receiving waters and adjacent properties. Refer to Specification 02102.

- B. Protect natural features (e.g., wetlands, sinkholes, karst features, floodways, etc.) with stormwater management or treatment measures to address pollutants that may discharge to these features.
- C. Minimize soil compaction in areas where permanent vegetation will be re-established and/or areas that are designated to infiltrate stormwater for the post-construction phase.
- D. Preserve existing natural buffers that are adjacent to waters of the state to promote infiltration and provide protection of the water resource as established on the Drawings, unless infeasible.
- E. Do not discharge pollutants such as sediments, fuels, lubricants, bitumen, raw sewage, or wash water from concrete mixing operations (concrete washout), water from trench or pit dewatering, and other harmful materials into or near stormwater conveyances, wetlands, rivers, streams, and impoundments or into natural or manmade channels leading thereto.
- F. Do not apply pesticides when working in or adjacent to a floodway, river, stream, ditch, or other stormwater conveyance.
- G. Properly dispose of all waste materials.
- H. Establish vegetation in accordance with the Seasonal Soil Protection Chart and other information presented on the Drawings.
- I. Temporarily or permanently stabilize unvegetated areas that are scheduled or likely to be left inactive for 7 days or more with measures appropriate for the season to minimize erosion potential. Initiate stabilization activities by the end of the seventh day the area is inactive. Stabilization activities and completed within 14 days.
- J. Final stabilization for construction projects within agricultural land is accomplished by temporarily or permanently seeding upon completion of land disturbing activities unless the agricultural landowner prefers to leave disturbed land un-stabilized for crop production.

3.04 Installation – General

- A. Incorporate all permanent erosion control features into the project at the earliest practical time. Except where future construction operations will damage slopes, perform the permanent seeding, mulching and other slope protection Work in stages as soon as substantial areas of exposed slopes can be made available.
- B. Use temporary erosion and pollution control measures to correct conditions that develop during construction, that are needed prior to installation of permanent control features, or that are needed temporarily to control erosion that develops during normal construction practices.

- C. Schedule and perform clearing and grubbing operations so that grading operations and permanent erosion control features can follow immediately thereafter if the project conditions permit; otherwise, install temporary erosion control measures between successive construction stages.
- D. Limit the area of clearing and grubbing, excavation, borrow, and embankment operations in progress, commensurate with progress in completing the finish grading, seeding, mulching and other such permanent control measures in accordance with the accepted schedule. Should seasonal limitations make such coordination unrealistic, install temporary erosion control measures.
- E. In the event temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the Work as scheduled or as ordered by the Engineer, perform such Work at Contractor's expense.
- F. Maintain all erosion and sediment control practices during the construction period.

3.05 Installation - Erosion and Sediment Control Measures

A. Temporary Construction Entrance

1. Install a temporary construction entrance as specified in the Drawings.
2. Construct temporary construction entrances in location(s) shown on the Drawings and where needed where construction vehicles will repeatedly access a disturbed or unpaved area from a paved roadway to prevent tracking of soil or mud onto publicly or privately owned paved surfaces.
3. Not all locations of construction entrances may be shown on the Drawings. The contractor is responsible for locating and placing construction entrances at all points of construction traffic ingress and egress to prevent tracking and to avoid disturbance to existing waterways.
4. Should tracking of soil occur, clear accumulated sediment from public and private driveways by the end of the day, as instructed by a regulatory authority, and/or more frequently as sediment is tracked onto roadways.
5. Redistribute or properly dispose of collected sediments in a manner that is in accordance with all applicable statutes and regulations.
6. Do not rinse tracked material with water unless water is collected and disposed of properly.
7. Do not clear sediment using mechanical methods that will mobilize dust off the project site.

B. Fiber Filtration Tubes

1. Install in accordance with manufacturer's instructions.
2. Use fiber filtration tubes for the slowing and filtering of stormwater.
3. Use the appropriate tube size for the slope and the distance between tubes as specified by the manufacturer.
4. The tubes shall allow water to flow freely and provide filtration of suspended particles.

C. Dust Control

1. Use water to dampen surfaces to minimize dust and prevent wind erosion.
2. Do not rinse surfaces with water unless water is collected and disposed of properly.
3. Implement dust control methods on a routine basis where conditions warrant.
4. Provide water and dust suppression when requested by the Engineer.

D. Pumping Bags

1. Install pumping bags according to the Drawings.
2. Provide pumping bags to filter sediment from dewatering operations.
3. Properly dispose of used pumping bags.
4. Appropriately size the bags for the amount of flow.
5. Use pumping bags on an erosion resistant surface.
6. Do not discharge sediment-laden water from dewatering operations into or near stormwater conveyances, wetlands, rivers, streams, and impoundments or into natural or manmade channels leading thereto. Refer also to Section 02102 for the disposal of sediment-laden water.

E. Outlet Protection

1. Construct outlet protection to prevent erosion, provide energy dissipation, and retain sediment in areas of concentrated flow where stormwater conveyances discharge.
2. Place at pipe and channel outfalls and in locations as specified in the Drawings.

F. Inlet Protection

1. Install inlet protection at all stormwater inlets within the construction area, or in areas that receive runoff from disturbed areas, to prevent sediments, construction debris, and other potential stormwater pollutants from entering storm sewer inlets and catch basins.
2. For inlets within a road or driving lane, equip the inlet protection practice with an overflow or bypass so ponding water does not cause unsafe driving conditions.
3. Remove accumulated sediment and debris collected by inlet protection practices and dispose of properly after every rain event.
4. When cleaning or removing inlet protection, do not place sediment and debris in a ditch, stream, wetland, waterway, or stormwater conveyance.

G. Riprap Check Dam: Install riprap check dams as illustrated on the Drawings or as needed to reduce erosion potential and capture potential pollutants in drainage channels or areas of concentrated flow.

H. Concrete Washout Area: Refer to Section 02102 for Concrete Washout requirements.

I. Restore Disturbed Areas

1. Restore all lawn and sustainable plant areas (i.e., non-paved surfaces) that were disturbed during construction with temporary seeding and permanent seeding or sod unless shown otherwise on the Drawings.
2. Prior to seeding, disturbed areas must be graded and receive a minimum of 6 inches of topsoil unless shown otherwise on the Drawings. Use excavated material which meets the specified requirements for topsoil, or if the quantity of suitable topsoil is not sufficient, use topsoil obtained from another source.
3. Scarify the planting area to a minimum depth of 6 inches. Mix soil amendments such as fertilizer and lime if required, in the top 2 to 4 inches of topsoil with a disk or rake operated across the slope.
4. Apply seed uniformly with a drill or cultipacker seeder, or by broadcasting. Cover seed with topsoil a minimum of 1/2 inch. Cover newly seeded areas with anchored mulch or erosion control blanket where indicated on the Drawings or otherwise required in accordance with this section.
5. Keep seeded and fertilized areas adequately watered to a minimum of 1-inch depth per week until germination of all seed is complete and uniform grass or other vegetative cover is accomplished.
6. Immediately prior to installing sod, water the planting area with a fine spray to a minimum penetration of 1 inch.
7. Do not place frozen sod, and do not place sod on frozen or dry soil. Do not place sod when the air temperature is less than 32 degrees Fahrenheit.
8. Lay sod with closely fitted abutting joints without stretching and overlapping and stagger the ends of the strips. Trim and fit sod into irregular areas to eliminate gaps.
9. On slope areas, lay sod starting from the bottom of the slope and lay sod horizontal to the contour. Where slopes are greater than a horizontal to vertical ratio of 3 to 1, staple or stake each sod strip at the corners and in the middle.
10. After initial watering, tamp or roll sod with a roller to eliminate irregularities. Repeat watering at regular intervals to keep sod moist until it is rooted and to maintain growth until final acceptance.

J. Mulch: Anchor mulch unless held in place by a tackifier or netting.

K. Erosion Control Blanket

1. Where construction disturbs slopes equal to or steeper than 3 to 1 (H:V) or within drainage channels, protect bare slopes with an erosion control blanket, as indicated on the Drawings.
2. When vegetation is to be established, place erosion control blanket over the seed and anchor according to manufacturer's instructions to prevent the seed from washing away.
3. Place erosion control blankets on seedbeds free of sticks, rocks, and other objects larger than 1 inch.
4. If installed within a drainage channel, erosion control blanket shall extend up the sides of the channel to 1 foot above the ordinary high water mark or to the top of bank, whichever is greater, unless otherwise indicated on the Drawings.

3.06 Soil Stockpiles

- A. Manage soil stockpiles for wind erosion, stormwater erosion, and sediment control.
- B. Provide soil stockpiles with perimeter protection measures (silt fence, fiber filtration tube, etc.).
- C. Temporarily or permanently stabilize stockpiled soil that is scheduled or likely to be left inactive for 7 days or more with measures appropriate for the season to minimize erosion potential. Complete stabilization activities within 14 days.
- D. Position stockpiles away from any ditch, stream, wetland, or stormwater conveyance.
- E. Properly dispose of soil that will not be used for the project.

3.07 Trench Excavation

- A. Pile material from trench excavations in an area away from any ditch, stream, wetland, or stormwater conveyance and install silt fence around the material for sediment control.
- B. Install inlet protection within the project area when excavated material is placed on a paved surface.
- C. Following pipe installation, backfill trenches and temporarily or permanently stabilized all bare areas to prevent soil erosion.

3.08 Field Quality Control

- A. Self-Monitoring Program – Inspections
 - 1. Regularly inspect erosion and sediment control devices and other best management practices to ensure that they are operating properly.
 - 2. Regularly inspect disturbed areas, material storage areas, and equipment storage areas that are exposed to precipitation for evidence of, or the potential for, pollutants leaving the project site or entering a storm drainage conveyance.
 - 3. Regularly inspect stormwater discharge locations and/or outfalls to determine if control measures are effective in preventing adverse impacts to receiving waters.
 - 4. Regularly inspect haul routes and construction entrance(s) daily for evidence of off-site vehicle tracking of sediments.
 - 5. Regularly inspect staging area to ensure that solid and liquid wastes are being properly disposed of and are not allowed to be discharged into stormwater runoff.

3.09 Maintenance

- A. Maintain all erosion and sediment control measures and perform the following maintenance procedures throughout the project and until such time as the

disturbed area has been completely stabilized or other provisions have altered the need for these measures.

1. Implement maintenance practices as specified in the Drawings.
2. Replace mulch materials to their original level when the level has been substantially reduced due to decomposition of the organic mulches and displacement or disappearance of both the organic and inorganic mulches.
3. Remove rubbish and channel obstructions from bare and vegetated channels within the project limits. Repair damage from scour or bank failure, rodent holes, and breaching of diversion structures. Remove deposits of sediment.
4. Immediately repair excessive wear, movement, or failure of erosion control blankets.
5. Repair or replace any filter fabric which has decomposed or become ineffective prior to its expected usable life.
6. Till and smooth to conform to the existing grade and reseed any sediment deposits remaining in place after erosion and sediment control measures are no longer required and have been removed.
7. Maintain construction entrances in a condition to prevent tracking or flowing of sediment onto roads. This could require periodic top dressing of the construction entrance with additional surface materials as conditions demand. Repair and clean out any features used to trap sediment and remove all sediment spilled, dropped, washed, or tracked onto road surfaces and dispose of properly.
8. Remove accumulated sediments and debris from inlet protection devices after each storm event.
9. Periodically remove concrete and residual liquid from the concrete washout area, as needed to maintain available space for the future washout and rainwater. Dispose of in accordance with Section 02102.
10. Repair all rills that may appear. Re-grade to eliminate rill and stabilize ground by seeding or other approved methods.
11. Remove and dispose of all temporary erosion and sediment control practices within 30 days after site stabilization is achieved or after the temporary practices are no longer needed.

3.10 Schedules

- A. Contractor is to review the Erosion Control Schedule on the Drawings and revise as needed to phase construction activities as appropriate to ensure controls are in place prior to construction and to minimize the footprint of disturbed unstable areas.
- B. Submit a revised erosion control schedule as needed for temporary and permanent erosion control work as applicable for clearing and grubbing, grading, construction, paving and structures at watercourses.
 1. Install the temporary construction entrance and filters before clearing and grading begins.
 2. Install temporary perimeter controls (e.g., inlet protection) before clearing and grading begins.

3. Do not clear, grub or grade until it is necessary for construction to proceed. Maintain natural vegetation and vegetated buffers when practical to reduce the need for control devices. Maintain all controls as described throughout the construction project and until upstream drainage areas are stabilized.
4. Permanently stabilize bare soils once construction activities cease in an area.

-END-

SECTION 02102 - MATERIAL HANDLING AND SPILL PREVENTION PLAN

PART 1 - GENERAL

1.01 Summary

- A. Section Includes: providing a plan outlining procedures to:
 - 1. Help protect the health and safety of those working at the project site as well as the environment
 - 2. Prevent the contamination of stormwater runoff by onsite pollutants
 - 3. Help prevent fuel and chemical spills
 - 4. Provide a response procedure should a spill occur
- B. Related Sections
 - 1. Section 02101 – Stormwater Pollution Prevention and Erosion Control
 - 2. Section 02110 – Site Clearing

1.02 References

- A. 327 IAC 2-6.1 – Spills; Reporting, Containment, and Response
- B. 327 IAC 2-10 – Secondary Containment of Aboveground Storage Tanks Containing Hazardous Materials

1.03 Definitions

- A. Minor Spill: Approximately 10 gallons or less of pollutant with no contamination of ground or surface waters. Minor spills can generally be controlled by the first responder with help from other site personnel.
- B. Major or Hazardous Spill: More than 10 gallons with the potential for death, injury, or illness to humans or animals or has the potential for surface or groundwater pollution.
- C. Pollutants generated onsite may include gasoline, diesel fuel, oils, grease, paints, pesticides, nutrients, concrete and cementitious washout, soil, solvents, paper, plastic, Styrofoam, metals, glass, and other forms of liquid or solid wastes.

1.04 Quality Assurance

- A. Regulatory Requirements
 - 1. Ensure material handling and storage associated with construction activity complies with the spill prevention and spill response requirements in Indiana Administrative Code 327 IAC 2-6.1.
 - 2. Ensure aboveground storage tanks containing hazardous materials are stored appropriately according to the requirements in Indiana Administrative Code 327 IAC 2-10.

3. Dispose of contaminated soils, absorbents, and spill cleanup materials in accordance with all Federal, State, and local regulations.
4. Do not use water to flush spilled material unless authorized by a Federal, State, or local agency.
5. Additional regulation or requirements may be required. Consult a spill response professional to ensure all appropriate and required steps have been taken.
6. Do not remove contaminated material from the site until approval is given by Indiana Department of Environmental Management (IDEM), Office of Emergency Response (when emergency response is required).
7. Construction waste must be managed to prevent the discharge of pollutants and windblown materials. Waste containers (trash receptacles), when selected to manage waste, must be managed to reduce the discharge of pollutants and windblown debris.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.01 Preparedness

- A. Prepare a contact list of First Responders and the chain of command in the event of a spill on the site. Include names, contact numbers, local agency contact numbers, and information on circumstances requiring the initiation of the contact list and chain of command. Include IDEM Emergency Spill Line (888) 233-7745 or (317) 233-7745.
- B. Maintain a list of qualified contractors, vacuum trucks, tank pumpers, and other equipment and businesses qualified to perform cleanup operations.
- C. Provide a list and quantity of absorbent materials and supplies the Contractor will make available onsite in sufficient quantities to address minor spills.
- D. Train construction personnel, equipment operators, subcontractors, and other employees on proper fueling procedures, prevention of spills, spill response procedures, and communication procedures.

3.02 Spill Response

A. Minor Spills

1. Contain the spill to prevent material from entering the waterways and the storm or groundwater systems. Immediately clean up the spill with absorbent materials.
2. Do not flush with water, bury, or allow soaking into the ground.
3. Tarps can be used to cover spilled material during rain events on land.
4. Use absorbent material to cleanup spills on land.
 - a. Contain spills on impervious surfaces with a dry absorbent.

- b. Contain spills on clayey soils by constructing an earthen dike and dispose of spilled material as soon as possible to prevent migration deeper into the soil and groundwater. Remove contaminated soils.
- 5. Use containment booms to prevent the migration of spills on water.
 - a. Contain spills on water with a containment boom and absorb with an oil-only boom, mechanical skimmer, or other similar device.
 - b. Outside agencies will determine additional cleanup measures.
 - c. Report oil spills that cause a sheen upon the waters.
- 6. Gather contaminated materials and/or soils. Place contaminated absorbents and soils into a container for later disposal. Ensure the lid is closed and mark or label the container for identification purposes.
- 7. Contact 911 if the spill could be a safety issue.
- 8. Contact supervisors and designated inspectors immediately.
- 9. Dispose of waste appropriately.

B. Major or Hazardous Spills

- 1. Control or contain the spill without risking bodily harm.
- 2. Temporarily plug or cover storm drains if possible, to prevent migration of the spill into the stormwater system.
- 3. Use containment booms to prevent the migration of spills on water.
 - a. Contain spills on water with a containment boom and absorb with an oil-only boom, mechanical skimmer, or other similar device.
 - b. Outside agencies will determine additional cleanup measures.
 - c. Report oil spills that cause a sheen upon the waters.
- 4. Immediately contact the local Fire Department at 911 to report any hazardous material spill.
- 5. Contact supervisors and designated inspectors immediately. Contact county or municipal officials responsible for stormwater facilities. The Contractor is responsible for having these contact numbers available at the job site. Submit a written report to the Owner as soon as possible.
- 6. Contact IDEM, Office of Emergency Response as soon as possible, but within 2 hours of discovery at 1-888-233-7745. Note the following information for future reports to the IDEM or the National Response Center (1-800-424-8802):
 - a. Name, address, and phone number of person making the spill report
 - b. The location of the spill
 - c. The date and time of the spill
 - d. Identification of the spilled substance
 - e. Cause of the spill
 - f. Approximate quantity of the substance that has been spilled or may be further spilled and the amount recovered
 - g. The duration and source of the spill
 - h. Name and location of the damaged waters
 - i. Name of spill response organization
 - j. Measures taken in the spill response
 - k. Other pertinent information

3.03 Spill Prevention and Material Handling Practices

A. Vehicle and Equipment Fueling

1. Purpose: To prevent fuel spills and leaks and to reduce or eliminate contamination of stormwater and waterways.
2. Implementation
 - a. Use offsite commercial fueling stations when possible. Use onsite vehicle and equipment fueling only where it is impractical to send vehicles and equipment offsite to a commercial fueling station.
 - b. When performing fueling onsite, provide a designated fueling area.
 - c. Do not "top-off" fuel tanks.
 - d. Keep available absorbent spill cleanup materials and spill kits in fueling areas and on fueling trucks.
 - e. Inspect vehicles and equipment daily for leaks. Repair leaks immediately or remove them from the project site.
 - f. Use drip pans or absorbent pads during vehicle and equipment fueling, unless the fueling is performed over an impermeable surface in a dedicated fueling area.
 - g. Protect dedicated fueling areas from stormwater run-on and runoff and locate them at least 50 feet away from the downstream drainage facilities, stormwater conveyances or waterways.
 - h. Perform fueling on level-grade areas.
 - i. Protect fueling areas with berms and dikes to contain spills.
 - j. Equip nozzles used in vehicle and equipment fueling with an automatic shut off.
 - k. Do not leave fueling operations unattended.
 - l. Avoid mobile refueling of construction equipment; rather transport the equipment to the designated fueling area.
 - m. Store all petroleum products in tightly sealed containers which are clearly labeled.
 - n. Observe Federal, State, and local regulations for any stationary above ground storage tanks.

B. Vehicle Maintenance Areas

1. Purpose: To prevent stormwater exposure and spills during the normal maintenance of construction machinery.
2. Implementation:
 - a. As feasible, perform maintenance offsite in a covered facility with an impervious floor.
 - b. Use a dedicated site for machinery maintenance.
 - c. Locate maintenance areas at least 50 feet from stormwater inlets or water bodies.
 - d. Maintain spill kits and absorbent materials in close proximity to maintenance areas. Utilize drip pans and absorbent pads to prevent oils or other maintenance fluids from reaching the soil surfaces.
 - e. Inspect equipment daily for leaks or worn hoses. Repair or replace as needed to prevent onsite spills.
 - f. Properly dispose of all spilled fluids and fluids removed from machinery.

C. Equipment and Vehicle Washing

1. Purpose: To prevent or reduce the discharge of pollutants to waterways or stormwater from construction equipment and vehicle washing.
2. Implementation:
 - a. As feasible, perform washing offsite in a covered facility with an impervious floor and drains connected to the sanitary sewer.
 - b. Use a dedicated site for washing.
 - c. Locate wash areas at least 50 feet from stormwater inlets or water bodies.
 - d. Do not discharge wash water if using soaps, solvents, or detergents. Only non-contaminated wash water may be discharged to stormwater.
 - e. Inspect equipment and vehicles for leaks or worn hoses prior to washing.
 - f. Properly dispose of contaminated wash water.

D. Solid Waste Management

1. Purpose: To prevent or reduce the discharge of pollutants to waterways or stormwater from construction waste by providing designated waste collection areas and containers, arranging for regular disposal, and training employees and subcontractors.
2. Suitable Applications: Suitable for construction sites where the following wastes are generated or stored:
 - a. Solid waste generated from trees and shrubs removed during land clearing, demolition of existing structures (rubble), and building construction.
 - b. Packaging materials including wood, paper, and plastic.
 - c. Scrap or surplus building materials including scrap metals, rubber, plastic, glass pieces, and masonry products.
 - d. Domestic wastes including food containers such as beverage cans, coffee cups, paper bags, plastic wrappers, and cigarettes.
 - e. Construction waste including brick, mortar, timber, steel and metal scraps, pipe and electrical cuttings, non-hazardous equipment parts, Styrofoam, plastic, and other packaging for construction materials.
 - f. Sediments and other materials collected in erosion and sediment control measures (silt fence, inlet protection, catch basin sumps, etc.).
 - g. Natural debris such as excess soil, stone, sand, leaves, branches, brush, or wood.
3. Implementation
 - a. Develop a plan for proper waste disposal including the disposal of excess soil and excavated material. If a commercial disposal facility will not be utilized for soil disposal, then develop a Stormwater Pollution Prevention Plan for the selected disposal area.
 - b. Select designated waste collection areas onsite.
 - c. Inform trash-hauling contractors that only watertight dumpsters are acceptable for onsite use.
 - d. Inspect dumpsters for leaks, and repair dumpsters that are not watertight.
 - e. Provide an adequate number of containers with lids or covers to prevent loss of wastes from wind and to prevent the collection of rainwater.
 - f. Waste that is not disposed of in trash receptacles must be protected from exposure to the weather and/or removed at the end of the day from the site and disposed of properly.

- g. Collect site trash daily or more frequent if needed during demolition Work. Do not allow containers to overflow. Clean up immediately if a container spills, leaks, or overflows.
- h. Remove solid waste promptly from erosion and sediment control devices.
- i. Ensure that toxic liquid wastes (used oils, solvents, and paints) and chemicals (acid, pesticides, additives, curing compounds) are not disposed of in dumpsters designed for construction debris.
- j. Do not hose out dumpsters on the construction site. Ensure that dumpster cleaning is conducted by the trash hauling contractor off site.
- k. Make sure that construction waste is collected, removed, and disposed of only at authorized disposal areas. Do not locate solid waste storage areas in areas prone to flooding or ponding.
- l. Locate solid waste dumpsters a minimum of 50 feet away from waterways, stormwater inlets or other drainage facilities.
- m. Minimize the potential for spills or leaks to drain immediately into a waterway or drainage facility.
- n. Do not bury construction waste onsite.
- o. Cover construction material hauled from the site in dump trucks with a tarpaulin.
- p. Inspect construction waste areas regularly.

E. Fluids, Paints, Solvents and Other Chemicals Storage and Use

1. Purpose: To prevent stormwater exposure and spills during the use and storage of the materials.
2. Implementation
 - a. Store materials in manufacturer's containers.
 - b. Maintain Safety Data Sheets (SDS) on all products.
 - c. Store materials in a weatherproof/vandal resistant locker or building.
 - d. Keep materials away from flammable sources.
 - e. Follow manufacturer's instructions for the proper use and storage of all materials.
 - f. Do not perform washing of applicators or containers of solvent, paint, grout, stucco, or other materials near or into a waterway or stormwater inlet. Wash water is to be disposed offsite as wastewater.
 - g. Tightly seal and store paint containers and curing compounds when not required for use.
 - h. Do not discharge excess paint to a waterway or storm system. Properly dispose of excess paint according to the manufacturer's instructions and in accordance with all Federal, State, and local regulations.

F. Secondary Containment

1. Provide secondary containment for aboveground storage tanks or storage areas containing hazardous materials that are located outside.
2. Provide secondary containment consistent with good engineering standards.
3. Provide secondary containment that is compatible with the hazardous materials being stored.
4. Provide secondary containment that will prevent a release from entering waters for a 72-hour period.

5. Secondary containment must meet one of the following:
 - a. Double-walled tank,
 - b. Dikes, berms, retaining walls, trenches, or
 - c. Diversionary system
6. Provide secondary containment with a capacity to contain at least 110% of the volume of the largest aboveground tank or the volume of the largest aboveground tank plus enough freeboard to contain precipitation generated by a 25 year/24-hour rain event.
7. Provide secondary containment with a minimum 120-gallon capacity for storage area holding only drums.
8. Maintain the secondary containment to protect the integrity and capacity of the area.
9. Remove collected liquid in the secondary containment area within 72 hours of its discovery to maintain the capacity. Remove ice as soon as weather permits. Liquid that collects within the secondary containment area must meet all applicable requirements of the Water Quality Standards if discharged to waters of the state.

G. Disposal of Sediment-Laden Water

1. Purpose: To prevent the purposeful discharge of sediment-laden water from the project site.
2. Implementation
 - a. Do not discharge sediment-laden water from pumping operations into or near stormwater conveyances, wetlands, rivers, streams, waterways, and impoundments or into natural or manmade channels leading thereto.
 - b. Discharge sediment-laden water from dewatering of trenches, or other excavations by means of a pump or similar means into a manufactured pumping bag for filtering in accordance with the manufacturer's instructions unless the pumped water is routed through another erosion control measure such as a sediment trap or outlets onto a well-established vegetated area without eroding.
 - c. Pumping operations moving clean water through a site are not required to have a pumping bag or similar device at the outlet.
 - d. Protect the point of discharge to prevent soil erosion.
 - e. Do not discharge water with a visible sheen and/or pollutants at a level that requires additional or alternate treatment.

H. Concrete Washout Area

1. Discuss the concrete management techniques (such as handling of concrete waste and washout) with the ready-mix concrete supplier before any deliveries are made.
2. Incorporate requirements for concrete waste management into material supplier and subcontractors' agreements. Inspect construction activities on a regular basis to ensure suppliers, contractors, and others are utilizing designated washout areas. If concrete waste is being disposed of improperly, identify the violators and take appropriate action.

3. Perform washout of concrete trucks either offsite or in designated areas only. Never dispose of washout from concrete trucks in a ditch, stream, wetland, waterway, or stormwater conveyance.
4. Provide a designated concrete washout area for use of washing out concrete trucks to contain potential stormwater pollutants. Use one of the following methods:
 - a. Construct a minimum 10-feet by 10-feet by 3-feet deep area (or larger as required to contain liquid and solid waste from concrete washout operations) with a polyethylene lining. Construct and prepare the base of the system so that it is free of rocks and other debris that may cause tears or punctures in the polyethylene lining.
 - b. Install and maintain a pre-fabricated containment system in accordance with the manufacturer's instructions.
 - c. Use a polyethylene-lined roll-off dumpster when other methods are not practicable.
 - d. Subcontract with a concrete supplier that collects all washout water and pumps it back into the mixer drum for proper disposal off-site. In this instance, a concrete washout area would not be required.
5. Install orange safety fencing around concrete washout area perimeter. Post signage directing contractors and suppliers to the designated concrete washout location.
6. Locate washout areas at least 50 feet from storm drains, open ditches, or water bodies.
7. Inspect concrete washout area daily and after each storm event.
 - a. Check to ensure that the washout has not reached or exceeded maximum capacity.
 - b. Inspect the integrity of the overall structure.
 - c. Inspect the polyethylene liner for failure. The liner may need to be replaced after every cleaning if removal of material has damaged the liner.
 - d. Repair the concrete washout structure, as needed, or construct a new system.
8. Concrete wastewater liquid shall be fully evaporated prior to the planned capacity of the washout structure capacity being exceeded. Liquid that collects in the washout area could be high in alkalinity and could contain pollutants. Liquid must be disposed of offsite as wastewater.
 - a. Concrete wastewater liquid that has not solidified may be pumped out into a secondary lined container or into a tanker and taken to an approved disposal facility.
 - b. Concrete wastewater shall not be allowed to leak onto the ground, run into storm drains, or into any body of water. Where washout wastewater leaks onto the ground, all contaminated soils shall be excavated and disposed of properly.
9. Allow concrete wastes to set. Break up and properly dispose of hardened wastes. Upon removal of waste, inspect the structure.
10. Do not wash sweepings from exposed aggregate concrete into the street or storm drain. Collect and return sweepings to aggregate base stockpile or dispose of in the trash.
11. Do not dump excess concrete onsite, except in designated areas.

12. Provide a secondary concrete washout system onsite to be used in an emergency and that is of sufficient size to hand concrete washout wastewater from a minimum of one truck.
13. When concrete washout areas are no longer required, close the concrete washout systems. Dispose of all hardened concrete and other materials used to construct the system. Backfill, grade, and stabilize any holes, depressions, and other land disturbances associated with the system.

I. Fertilizers

1. Apply fertilizers only in the minimum amounts recommended by the manufacturer, as indicated from a soil test, or per the Indiana Stormwater Quality Manual.
2. Work fertilizers into the soil to limit exposure to stormwater.
3. Do not apply immediately prior to precipitation events.
4. Store fertilizers in a covered area and transfer partially used bags to a sealable container to avoid spills.

-END-

[THIS PAGE INTENTIONALLY LEFT BLANK]

SECTION 02110 - SITE CLEARING

PART 1 - GENERAL

1.01 Summary

- A. Section Includes: Furnishing all labor, tools, equipment and materials necessary to complete clearing and grubbing, removal of trees, stumps, vegetation, fences, and other material and debris, and hauling and disposal of removed trees, stumps, vegetation, fences, and other material and debris as shown on the Drawings and described herein.
- B. Related Sections
 - 1. Section 02101 – Stormwater Pollution Prevention and Erosion Control
 - 2. Section 02200 – Earthwork
 - 3. Section 02220 – Trenching, Backfilling and Compaction for Utilities

PART 2 - PRODUCTS

2.01 Topsoil

- A. Topsoil shall be reasonably free from subsoil, debris, and stones larger than 1 inch in diameter.
- B. Refer to Section 02101 and Section 02200 for additional topsoil requirements.

PART 3 - EXECUTION

3.01 Coordination

- A. The Owner has obtained or will obtain right-of-way and drainage easements for the location of the contemplated improvements.
- B. Contractor is responsible for marking and establishing the necessary clearing width, subject to the approval of Owner, based on the Drawings.

3.02 Clearing

- A. Remove trees, bushes, and fences only where shown on the Drawings which will interfere with the new construction. Dispose of materials and debris at a location secured by the Contractor and in accordance with all applicable laws.

3.03 Grubbing

- A. Remove any stumps, roots larger than 1-1/2 inches in diameter, vegetation, boulders, and other objectionable material within the limits of the construction area.

- B. Remove tree stumps and roots to the following depth:
 - 1. Within paved area: 24 inches below subgrade
 - 2. Within building and structure areas: 36 inches below subgrade
 - 3. Within lawn areas: 24 inches below subgrade
- C. Scrape clean all areas to be stripped of topsoil. Remove all brush, weeds, grass, roots and other materials that will interfere with lawn maintenance.
- D. Strip the construction area of all topsoil to its entire depth. Do not use topsoil for subgrade fill. Stockpile topsoil for use in finish grading operations in approved areas and protect from erosion.
- E. Dispose of all rubbish and debris resulting from clearing and grubbing operations off the property and in accordance with all applicable laws. Do not burn any rubbish and debris onsite.

3.04 Trimming

- A. Remove interfering branches without injury to tree trunks. Do not paint or cover wounds to the tree or pruned branches.

3.05 Protection

- A. Protect existing trees and shrubbery in the construction area that are to remain. Remove and replace in kind all trees and shrubbery in the construction area that are to remain but that are damaged or killed during construction.
- B. Tree Protection During Excavation - Adhere to the following procedure when installing underground electric, water, sewer lines and structures near trees.
 - 1. When possible, avoid trenching inside the dripline of a tree.
 - 2. Cut roots cleanly. Do not paint cut roots.
 - 3. Backfill the trench as soon as possible. Do not leave the roots exposed to air.
 - 4. Clean up around trees immediately after construction.
- C. Protect existing utilities that are to remain.

3.06 Management of Trees for the Emerald Ash Borer

- A. Emerald Ash Borer (EAB), *Agrilus planipennis Fairmaire*, is an exotic beetle that damages all species of ash trees (genus *Fraxinus*) and other hardwood trees. In accordance with federal regulations (7 CFR 301.53-1 through 301.53-9), all trees potentially containing EAB are not to be moved out of the federally quarantined area. Coniferous trees (such as pine, spruce or fir) are not regulated by 7 CFR 301.53-1 through 301.53-9. The EAB quarantine restricts movement of the following:
 - 1. Cut firewood of any kind, except pine. Firewood may move between federally quarantined states in the quarantined area if this is allowed by each state. It is best to verify with each destination state Department of Agriculture for their

rules or contact IDNR Division of Entomology and Plant Pathology for assistance and the latest information on quarantine status.

2. Living EAB insects of any life stage from immature to adult.
3. Any whole ash trees, including nursery trees.
4. Limbs, stumps, branches, or debris from ash trees with a diameter of 1 inch or more.
5. Ash logs, slabs, or untreated ash lumber with the bark attached.
6. Ash chips and ash bark chips (both composted and non-composted) that are 1 inch or more in diameter.
7. Any product made from ash wood that was recently alive and growing that might move any life stage of the beetle.

For additional guidance regarding the proper disposal of tree material that could potentially be infested with EAB, contact the Indiana Department of Natural Resources Department of Entomology and Plant Pathology at 1-866-663-9684 or Purdue's EAB Outreach and Education Program at 1-765-494-0822.

-END-

[THIS PAGE INTENTIONALLY LEFT BLANK]

SECTION 02111 - RECORDING OF CONSTRUCTION AREAS

PART 1 - GENERAL

1.01 Summary

A. Section Includes

1. Providing all labor, materials, equipment, services, and operations necessary to produce color, audio-visual, digital recording of the existing surface features and conditions within the construction area prior to beginning construction.
2. Providing corresponding runsheet logs.

1.02 Submittals

- ##### A. Submit still frame capable, color videos on a digital media storage device compatible for playback on a personal computer (USB flash drives acceptable).

PART 2 - PRODUCTS

2.01 Equipment

- ##### A. Use a high-quality color camcorder with 1/4-inch, 1/3-inch, or 1/2-inch charged coupled device-imaging system. Camera must:
1. Utilize optical stabilization (Electronic stabilization is not acceptable.)
 2. Be capable of 20x minimum optical magnification
 3. Be capable of producing NTSC 525 lines resolution/60 fields/30 frames per second
 4. Have minimum illumination capabilities of at least 3-lux

PART 3 - EXECUTION

3.01 General

- ##### A. Prior to beginning construction, walk each Work site with Owner and Engineer and record existing site conditions. Provide audio-visual recordings of all existing surface features and site conditions located within the construction zone of influence.
- ##### B. The purpose of this coverage is to accurately document the pre-construction conditions of the surface features.
- ##### C. The pre-construction video documentation shall be done by a responsible commercial firm known to be skilled and regularly engaged in the business of color audio-video construction documentation. The firm shall furnish such information as the Engineer deems necessary to determine the ability of the firm to produce a professional video in accordance with Contract.

3.02 Information to be Included

- A. The construction zone of influence shall be defined as those areas located within the right-of-way and the permanent and temporary easements, generally located within the limits of construction indicated on the Drawings, but shall include those areas adjacent to these areas which may be affected by routine construction operations, or as requested by the Engineer.
- B. The surface features within the construction zone of influence shall include, but not be limited to, all visible roadways, pavements, curbs, driveways, sidewalks, culverts, headwalls, retaining walls, buildings, landscaping, trees, shrubbery and fences.
- C. Provide a runsheet log that accurately catalogs the contents of each video. Information in the runsheet must include:
 - 1. Street name, easement, or address
 - 2. Drawing sheet number(s) relative to the line entry of a particular area of coverage
 - 3. Media storage device numbers
 - 4. Real time code indexing for each segment of the project. Real time code indexing will indicate hours, minutes, and seconds to cross reference with playback equipment to locate specific points of interest on the project.
 - 5. Direction of travel for each specific segment
 - 6. Viewing side for each specific segment
 - 7. Starting point for each specific segment
 - 8. Ending point for each specific segment
 - 9. Project information, i.e., project title, owner, date
- D. All media storage devices must be tagged/labeled with appropriate project information and be able to be cross-referenced with runsheets. Information on media storage device labels shall include:
 - 1. Video number
 - 2. Project Title
 - 3. Location of project
 - 4. Month and year of coverage
 - 5. If multiple copies of each video is to be made available, media storage devices must be marked as sets, i.e., Engineer's set, Owner's set, Contractor's set.
 - 6. Quick reference list of contents of a particular video

3.03 Miscellaneous Details

- A. Conduct recording of the project prior to the placement of equipment and materials on the jobsite. Log and present all videos to the Engineer before the actual construction is started for their review. Give particular and detailed attention to any defects noted, such as cracks, disturbed areas, damaged items, or as may be required by Engineer. It is the intent of this coverage to document pre-existing conditions accurately and clearly, especially any items that may result in construction claims.

- B. To prevent tampering or editing of videos, all recordings must digitally display continuous and simultaneously generated information including the date and time of recordings, as well as the corresponding engineering stationing numbers. The date information will contain the month, day and year.
- C. Accompanying the recording shall be a corresponding and simultaneously recorded audio track containing the commentary of the camera operator. Each video shall begin with the current date, project name, municipality, and the general location, i.e., name of street, viewing side, and direction of progress. The commentary shall assist in the maintenance of viewer orientation, identification of surface features, and objective description of the points of interest being shown on the video portion of the recording.

3.04 Recording

- A. Perform recordings during times of good visibility. Do not record during periods of visible precipitation, or when more than 10 percent of the ground area is covered with snow, unless authorized by the Engineer.
- B. Identify houses and buildings visually by house number, when visible, in such a manner that structures of the proposed system, i.e., manholes on a sewer system, gate valves and hydrants on a water system can be located by reference. In all instances, locations shall be identified by audio or visual means at intervals not to exceed 100 linear feet.
- C. To produce the proper detail and perspective, provide adequate lighting to fill in shadow areas caused by trees, utility poles, road signs, and other such objects.
- D. The rate of speed in the general direction of travel of the conveyance used during taping shall be directly proportional to the number, size, and value of the surface features within that construction area's zone of influence. The rate of speed shall not exceed 48 feet per minute in residential areas, or 100 feet per minute in non-residential areas. The rate of travel for haul routes, rainfall studies, and road surface view shall be approximately five (5) miles per hour. Panning rates and zoom-in, zoom-out rates shall be electronically or manually controlled sufficiently such that during playback will produce clarity of the object viewed. The playback picture shall be in focus and be of extreme clarity at all times.
- E. Where conventional wheeled vehicles are used, mount the camera securely to produce steady viewing. Camera lens is to be a minimum of eight (8) feet from ground of viewing area, or at a level to facilitate best perspective and line of sight. Vehicles used while performing documentation must be plainly marked with Company name and phone number. Use caution signs, flags, and strobes on vehicle as necessary.
- F. Televisé and tape areas with paved roads, along co-owned easements through parks, lawns, and open fields. If recording on private property, give the Owner sufficient prior notice of such entry so that property owners may be advised of and their permission obtained for the Work. If permission is denied, runsheet log shall be duly noted.

- G. The Engineer shall have the authority to designate what area may be omitted or added for recording.
- H. The Engineer shall have the authority to reject all or any portion of the recording not conforming to Specifications.

-END-

SECTION 02200 - EARTHWORK

PART 1 - GENERAL

1.01 Summary

A. Section includes

1. Stripping, storage and redistribution of topsoil, cut and fill operations, and rough and finish grading
2. Hauling on, excavation, filling, backfilling, placing, compaction, hauling off, and off-site disposal of materials
3. Dewatering operations

B. Related Sections

1. Section 02101 – Stormwater Pollution Prevention and Erosion Control
2. Section 02110 – Site Clearing
3. Section 02220 – Trenching Backfilling & Compaction for Utilities

1.02 References

- A. ASTM D698 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort
- B. ASTM D2487 – Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
- C. Indiana Department of Transportation (INDOT) Standard Specifications, latest edition

1.03 Definitions

- A. Pavement/Structure Loading Zone: The area within an imaginary line beginning 5 feet from any edge of pavement, curb, gutter, sidewalk, building, structure, vault, tank, pad, or other load-bearing feature and extending downward at a 1H:1V slope, beginning at ground level and extending indefinitely.
- B. Structural Pad: The area within an imaginary line that extends downward from the outside edge of a footing, foundation, mat, or other load-bearing feature at a 1H:2V slope.
- C. Structural Fill: Material placed beneath foundations and structures and used to fill an excavation around the vertical sides of structures, directly over structures, and where described in these Technical Specifications and indicated on the Drawings.
- D. Plastic Clay: Soil type CH with a Liquid Limit above 50.
- E. Common Excavation: All excavation not classified as rock excavation or excavation that is otherwise classified.

F. Rock Excavation

1. Igneous, metamorphic, and sedimentary rock which cannot be excavated without blasting or the use of a modern power shovel of no less than one cubic yard capacity, properly used, having adequate power and in good running condition, or the use of other equivalent power equipment.
2. Boulders or detached stones each having a volume of one half (1/2) cubic yard or more.

G. Unclassified Excavation: Excavation of all materials of whatever character encountered in the Work.

H. Borrow: Approved material required for the construction of embankments or other portions of the Work, and obtained from offsite.

I. Unsuitable Material: Include frozen soil, relatively soft material, relatively wet material, deleterious material, plastic clays, or soils that exhibit a high organic content.

1.04 Submittals

A. Project Data

1. Type(s), source(s), and technical specifications for:
 - a. Fill Sand
 - b. Wood Chips
 - c. Riffle Mix
 - d. Boulders
 - e. Pea Gravel

B. Test Results

1. Structural fill material testing and classification results, including: material source, natural and optimum moisture content, sieve analysis, maximum dry density, classification.
2. Test report on borrow material soil classification (if applicable)
3. Field compaction test results
4. Subgrade evaluations

1.05 Quality Assurance

A. Qualifications

1. Provide the services of a qualified testing laboratory to perform all laboratory tests and evaluations.
2. Provide the services of a qualified testing agency experienced in geotechnical engineering and field determinations of soil suitability for the evaluation of foundations, pavements, and structures subgrade soils and conditions.

1.06 Job Conditions

- A. Maintain benchmarks, monuments, and other reference points, and replace any that are disturbed or destroyed.

1.07 Warranty

- A. Refill and restore to the original grade settlement in the backfill which takes place within the warranty period at no additional cost to the Owner. Restore the surface area where settlement has occurred, including, but not limited to repairing lawn and sustainable plant areas, including regrading, reseeding, refertilizing, and mulching and/or reapplying erosion control blanket; and repairing paved areas, including, but not limited to, repairing streets, drives, and sidewalks.
- B. Guarantee all trees, shrubs, ornamental plants, and plant plugs during the warranty period.

PART 2 - PRODUCTS

2.01 Materials

A. Regular Backfill

- 1. Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D2487, or a combination of these groups; free of rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

B. Structural Fill

- 1. Clean, well-graded, coarse-grained granular material free of organic material, debris, deleterious materials, or frozen soils.
 - a. Coarse-Grained Granular Material
 - 1) Less than 5% fines, by weight, passing a No. 200 sieve
 - 2) 100% passing a 1" sieve
 - 3) Coarse sands, gravels, and gravel-sand mixtures, including variously and appropriately graded sands and gravels. Soil types GW, GP, SW and SP are included in this class.
- 2. Lean Concrete
 - a. Seven-Day Compressive Strength: 700 psi min.
 - b. Material meeting Section 03300

C. Topsoil

- 1. Natural, fertile, agricultural soil, capable of sustaining vigorous plant and lawn growth.
- 2. Uniform composition throughout, without admixture of subsoil.
- 3. Free of stones, lumps, clods, and sticks larger than 1-inch; live plants and their roots, sticks, and other extraneous matter.
- 4. Refer to Section 02101 and Section 02110 for additional topsoil requirements.

D. Fill Sand

1. Soil Classification Groups SW and SP according to ASTM D2487, or a combination of these groups; free of debris, waste, frozen materials, vegetation, and other deleterious matter. Materials meeting such requirements may be described as fill sand or bank run sand.

E. Wood Chips

1. Small- to medium-sized pieces of wood formed by cutting or chipping larger pieces of wood such as trees, branches, logging residues, stumps, roots, and woody debris; free of debris, waste, frozen materials, vegetation, and other deleterious matter.

F. Riffle Mix

1. Materials for riffle mix shall be angular, open- or coarse-graded coarse aggregate such as crushed stone and gravel meeting the gradation requirements detailed in the Drawings. INDOT Riprap, Revetment, and other coarse aggregate meeting the following nominal sizes and percent passing, will be considered an acceptable material:
 - a. 100 percent passing 18-inch sieve
 - b. 90-100 percent passing 12-inch sieve
 - c. 20-40 percent passing 6-inch sieve
 - d. 0-10 percent passing 3-inch sieve

G. Boulders

1. Materials for footer boulders and cascade boulders shall be large, angular pieces of stone meeting the dimension and unit weight requirements detailed in the Drawings. Materials meeting such dimension and unit weight requirements may be described as outcropping stone or thick outcropping stone.

H. Pea Gravel

1. Materials for pea gravel shall be angular, open- or coarse-graded coarse aggregate such as crushed stone and gravel. INDOT No. 93PG, No. 8, No. 9, and No. 11, and other coarse aggregate meeting the following nominal sizes and percent passing, will be considered an acceptable material:
 - a. 100 percent passing 1-inch sieve
 - b. 75-100 percent passing 3/4-inch sieve
 - c. 40-100 percent passing 1/2-inch sieve
 - d. 20-100 percent passing 3/8-inch sieve
 - e. 0-60 percent passing No. 4 sieve
 - f. 0-15 percent passing No. 8 sieve
 - g. 0-5 percent passing No. 30 sieve

PART 3 - EXECUTION

3.01 Preparation

- A. Clear, remove stumps, and scrape clear all construction areas as specified in Section 02110.
- B. Remove all topsoil at construction areas in accordance with Section 02110. Stockpile topsoil for use in finish grading operation. Do not use topsoil for fill.
- C. Do not place fill materials until the subgrade associated preparation work have been inspected by the Engineer.
- D. Before borrow or disposal operations begin, provide the Engineer plans for the control of water including measures to keep sediment from entering streams.

3.02 Excavation

- A. Keep open excavations free of water to avoid impacting the Work.
 - 1. Provide and maintain adequate dewatering equipment to remove and dispose of surface water and groundwater entering excavations.
 - 2. Use appropriate measures to prevent surface water from entering the excavation and to provide adequate drainage of the areas adjacent to the excavation.
 - 3. Filter water from dewatering operations to remove sediment before discharge and disposal in accordance with Section 02101.
- B. Protect open excavations by roping areas off, or with barricades or railings, to prevent injury to personnel. Comply with all applicable Occupational Safety and Health Administration (OSHA) regulations.
- C. Excavate true to line and grade, and elevation at bottom of the excavation. Excavate to undisturbed structurally stable subsoil. Notify Engineer where excavation, in order to reach such subsoil, must continue deeper than required by the elevations indicated on the Drawings. No additional payments will be made for unauthorized excess excavation.
- D. Excavate to the dimensions indicated for new construction plus sufficient space as applicable to permit erection of forms, shoring, masonry, foundations, structure installations, weir installations, and excavation inspections.
- E. Excavate below structures, slabs and pavement to permit placement of subbase material.
- F. Provide shoring or piling as required to protect excavation bank.
- G. Unless otherwise directed by the Engineer, boulders, if encountered, must be disposed of outside of the construction area.

3.03 Contaminated Soils and Groundwater

- A. If suspected contaminated soils or groundwater are discovered during excavation, inform the Engineer immediately and cease excavation.
- B. Contact the corresponding regulatory agency based on the excavation location.
 - 1. If the excavation is within the INDOT right-of way, contact INDOT Environmental Services Division (317-232-5113) and report the suspected contamination to the IDEM Emergency Response hotline (888-233-7745). Follow INDOT Site Assessment Guidelines for proper investigation and handling of the suspected contaminated soils or groundwater.
 - 2. If the excavation is outside of the INDOT right-of-way, the Owner will report the suspected contamination to IDEM Emergency Response. IDEM may direct the Owner to additional regulatory agencies depending on the nature of the suspected contamination.
- C. Keep suspected contaminated soils separate from soils that appear to be “clean” or uncontaminated.
 - 1. DO NOT place suspected contaminated soils, in environmentally sensitive areas such as waterways, floodways, wetlands, karst features, or stormwater conveyances.
 - 2. Place suspected contaminated soil on a plastic tarp and cover with an additional plastic tarp or place in containers (e.g. drums) with a lid.
 - 3. Place a berm around the covered stockpile to ensure that soils are not blown by wind or carried by stormwater.
 - 4. Follow the direction of the regulatory agency in handling, storage, characterization, and disposal of contaminated soils.
- D. Leave suspected contaminated groundwater in the excavated area.
 - 1. If the suspected contaminated groundwater must be removed from the excavated area, pump to covered containers (e.g. drums or totes) for proper disposal.
 - 2. Follow all federal, state, and local disposal requirements for suspected contaminated groundwater.
 - a. Discharging contaminated groundwater to a waterway or stormwater conveyance requires an emergency NPDES permit from IDEM’s Office of Water Quality. The contaminated groundwater must meet the NPDES drinking water quality standards. Contaminated groundwater may not be discharged until the permit is obtained (typically 90 days).
 - b. Discharging contaminated groundwater to the sanitary sewer requires local approval and analytical tests per the local sewer use ordinance or wastewater discharge requirements.
- E. Any increase or decrease of cost resulting from encountering contaminated soils or groundwater will be adjusted in the manner provided in the General Conditions.

3.04 Subgrade Evaluation

- A. Prepare all areas that will support foundations, floors, pavements, weirs, or newly placed structural fill prior to subgrade evaluation. Remove all loose surficial soil, topsoil, and other unsuitable materials at least 5 feet beyond the limits of the proposed foundations, floors, pavements, weirs, and structural fill, and within the Pavement/Structure Loading zone when feasible.
- B. Once excavations have reached the required elevations and dimensions, notify the Engineer and Contractor's testing agency so the subgrade can be evaluated. Do not place materials on the subgrade until the subgrade and associated preparation work has been inspected and approved by the Engineer and Contractor's testing agency.
- C. Foundation subgrade evaluation
 - 1. The Contractor's testing agency will test the exposed subgrade to confirm that a bearing surface of adequate strength has been reached.
 - 2. Further excavate localized soft soil zones encountered at the bearing elevation until adequate support soils are encountered, or the minimum undercut depths are achieved, whichever is greater.
 - 3. Replace the undercuts with compacted structural fill.
 - 4. For each type of soil on which footings will be placed, conduct at least one bearing test for every 500 square feet of structure foundation, but in no case less than three tests, to verify required design bearing capacities.
- D. Pavement and slab-on-grade area subgrade evaluation
 - 1. Under observation of the Engineer and Contractor's testing agency, proof-roll the subgrade in the location of the new pavements and slab-on-grade floor slabs shown on the Drawings.
 - 2. Proof rolling shall consist of repeated passes of a loaded pneumatic-tired vehicle such as a tandem-axle dump truck or scraper.
 - 3. Any areas found to rut, pump, or deflect excessively must be compacted in place or undercut and replaced with compacted structural fill, as directed by the Engineer.
- E. Minimum undercut depths to be provided if unsuitable soils, plastic clays, or other unsuitable subgrade conditions are encountered shall be as follows:
 - 1. Subgrade under foundation: minimum 24" undercut
 - 2. Subgrade under slabs: minimum 18" undercut
 - 3. Subgrade under paved areas: minimum 12" undercut

3.05 Filling, Backfilling, and Placing

A. General

1. Once the subgrade has been approved by the Contractor's testing agency and the Engineer, fill, backfill, and/or place materials within the excavations to the required grades as shown on the Drawings.
 2. Suspend earthwork operations when satisfactory results cannot be obtained because of rain, freezing weather, or other unsatisfactory conditions in the field.
 3. Material shall be of the proper moisture content before compaction. Do not perform filling or backfilling if the material is too wet to permit proper compaction.
 4. Place layers in the deepest portion of the fill first. As placement progresses, construct layers approximately parallel to the finished grade line.
 5. Place layers in successive horizontal layers for the full width of the section and at the loose lift thickness specified.
- B. The Contractor is responsible for the stability of the fill above the top of footings. Do not backfill until walls are braced or shored and the Engineer has approved the backfilling operation. If fill is to be provided on both sides of walls, fill on both sides at same time.
- C. Install vapor barrier on drainage fill prior to installing slab-on-grade floor slabs. Place drainage fill under floor slabs, slabs on grade, walks, and paving to indicated depths but not less than 4 inches in depth.

3.06 Compaction

A. General

1. Compact fill materials using equipment capable of compacting each lift its full depth. Maintain moisture at optimum content during compaction operations.
2. Provide compacting equipment of the design, weight, and quantity to obtain the required soil compaction. Under no circumstances will a bulldozer or similar tracked vehicle be used as compacting equipment.
3. Use water distribution equipment with suitable sprinkling devices to add moisture to the soil, if required.
4. Compact areas inaccessible to a roller by mechanical tampers. Operate the equipment in such a manner that hardpan, cemented gravel, clay, or other chunky soil material are broken up into small particles and become incorporated with the material in the layer.
5. Compaction by flooding is not acceptable.
6. If a fill area excavation extends beyond the limits of that fill area definition, continue with the same fill material and compaction across the entire excavation unless approved by Engineer.

B. Degree of Compaction

1. Compact to the limits specified below and in accordance with ASTM D698.

2. Fill areas beneath footings, foundations, and mats (within the Structural Pad):
 - a. From bottom of fill to within 12" of top of fill: Place structural fill in 8" maximum loose lifts and compact each layer to 100% of maximum dry density (ASTM D698).
 - b. Final 12" of fill: Place structural fill in 6" maximum loose lifts and compact each lift to 100% of maximum dry density (ASTM D698).
3. Fill areas beneath floor slabs, adjacent to and within 5 feet of foundations, and over foundation (outside the Structural Pad but within the Structure Loading Zone):
 - a. From bottom of fill to within 12" of top of fill: Place structural fill in 8" maximum loose lifts and compact to not less than 95% of maximum dry density (ASTM D698).
 - b. Final 12" of fill: Place structural fill in 6" maximum loose lifts and compact each lift to 100% of maximum dry density (ASTM D698).
4. Fill areas adjacent to walls:
 - a. Place structural fill in 8" maximum loose lifts and compact to 90% of maximum dry density (ASTM D698) for fills not required to support structural loads above and compact to 95% maximum dry density (ASTM D698) for fills required to support structural loads above.
5. Fill areas within the Pavement Loading Zone:
 - a. From bottom of fill to within 12" of top of fill: Place structural fill in 8" maximum loose lifts and compact each layer to 95% of maximum dry density (ASTM D698).
 - b. Final 12" of fill: Place structural fill in 6" maximum loose lifts and compact each lift to 100% of maximum dry density (ASTM D698).
6. For all other fill areas: Place regular backfill in 8" maximum loose lifts and compact each layer to 90% of maximum dry density (ASTM D698).

C. Field Density Testing

1. Perform one field density test for every 500 square feet of fill on each lift, but in no case less than three tests, to ensure that adequate compaction is being achieved.

3.07 Proof Rolling of Fills

- A. Perform proof rolling operations using a pneumatic tire roller conforming to the requirements of INDOT Specification 203.26.
- B. Perform a minimum of two complete coverages.
- C. Correct all roller marks, irregularities, and failures.
- D. After completion of filling and compaction operation, proof roll area with smooth wheel vehicle to leave a smooth surface sealed to shed all water.

3.08 Grading

- A. Furnish, operate, and maintain equipment necessary to control uniform layers, section, and smoothness of grade for maximum compaction and drainage.

B. Rough Grading

1. Evenly grade to an elevation 6 inches below the finish grade elevations indicated, unless otherwise indicated on the Drawings.
2. Protect all constructed items during grading operations, and repair if damaged.
3. All areas in the project, including excavated and filled sections and adjacent transition areas, shall be reasonably smooth, compacted, and free from irregular surface changes.
4. Provide a finish grade ordinarily obtainable from either blade-grader or scraper operations, unless otherwise specified.
5. The finished subgrade surface generally shall be not more than 0.3 feet above or below the established grade or approved cross-section, with due allowance for topsoil and seeding or sod as applicable.
6. The tolerance for areas within 10 feet of buildings shall not exceed 0.15 feet above or below the established sub-grade.
7. All ditches, swales and gutters as applicable shall be finished to drain readily.
8. Evenly slope the subgrade to provide drainage away from the building walls in all directions at a grade not less than 1/2-inch per foot.
9. Provide grade rounding at top and bottom of banks and at other breaks in grade.

C. Protection

1. Protect newly graded areas from the action of the elements.
2. Repair settlement or washing that occurs prior to acceptance of the Work, and reestablish grades to the required elevations and slopes.
3. Fill to required subgrade levels any areas where settlement occurs.

D. Finish Grading

1. Proceed to finish elevations shown on Drawings with a tolerance of plus or minus 1/2 inch.
2. Rake subsoil clean of stones and debris. Scarify to a depth of 3 inches.
3. In accordance with Section 02101, spread stockpiled topsoil over prepared subgrade to a minimum depth of 6 inches, unless otherwise indicated on the Drawings, and roll until suitable for restoration of disturbed areas.
4. Maintain surfaces and replace additional topsoil necessary to repair erosion.

E. Complete final restoration operations including grading, seeding, and/or other necessary treatments to blend the area into the surrounding landscape as shown on the Drawings. Assure restored areas are well drained.

F. No additional payments will be made for restoration of borrow areas. Drainage, location, or use of the pit, shall comply with existing laws, regulations, and ordinances. Under no conditions shall borrow sites detract from the appearance of the natural topographical features or increase any potential hazard.

-END-

SECTION 02220 - TRENCHING, BACKFILLING AND COMPACTION FOR UTILITIES

PART 1 - GENERAL

1.01 Summary

A. Section Includes: Performing surface preparation and excavation Work as required for the installation of utilities and appurtenances including excavation, trenching, bedding, backfilling, and other related Work.

B. Related Sections

1. Section 02101 – Stormwater Pollution Prevention and Erosion Control
2. Section 02200 – Earthwork
3. Section 02720 – Storm Sewer Systems

1.02 References

A. American Society for Testing and Materials (ASTM), latest editions

1. ASTM C403 – Standard Test Method for Time of Setting of Concrete Mixtures by Penetration Resistance
2. ASTM D698 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort
3. ASTM D2321 – Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
4. ASTM D2487 – Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
5. ASTM D6024 – Standard Test Method for Ball Drop on Controlled Low Strength Material (CLSM) to Determine Suitability for Load Application
6. ASTM D6103 – Standard Test Method for Flow Consistency of Controlled Low Strength Material (CLSM)

B. Indiana Department of Transportation (INDOT) Standard Specifications, latest edition

1. Section 213 – Flowable Backfill
2. Section 904 – Aggregates

C. Occupational Safety & Health Administration (OSHA) Regulations (Standards – 29 CFR), latest editions

1. Part 1926 – Safety and Health Regulations for Construction

D. Porter County Supplemental Design & Construction Standards & Specifications

1. Section 8.09 – Utilities
2. Section 8.18 – Standard Drawings

1.03 Definitions

- A. Bedding – Granular material placed beneath the pipe to establish line and grade and to provide pipe support.
- B. Final (Trench) Backfill – Granular or other specified material placed from the top of the Initial Backfill to the top of the trench, or to just beneath the surface that is to be restored.
- C. Granular Backfill – Class I or Class II material as described in 2.01.
- D. Haunching – Granular or other specified material placed from the top of the bedding to the springline (center) of the pipe, installed uniformly in lifts on each side of the pipe, and shoveled under the sides of the pipe to provide resistance against soil and traffic loading.
- E. Initial Backfill – Granular or other specified material placed from the springline of the pipe to the specified height above the crown of the pipe, to provide adequate pipe support and to protect the pipe from damage due to compaction of the final backfill.
- F. Pavement/Structure Loading Zone – The area within an imaginary line beginning 5 feet from any edge of pavement, curb, gutter, sidewalk, building, or other structure and extending downward at a 1H:1V slope, beginning at ground level and extending indefinitely.

1.04 Submittals

A. Product Data

- 1. Class I material source and gradation
- 2. Class II material source and gradation
- 3. Flowable Fill Mix Design
 - a. Provide mix design which includes:
 - 1) List of all ingredients
 - 2) Source of the materials
 - 3) Gradation of aggregates
 - 4) Names of admixtures and dosage rates
 - 5) Batch weights
 - 6) Mix design designation number
 - b. If requested, provide a trial batch demonstration.
 - c. Provide test data from a laboratory inspected by the Cement and Concrete Reference Laboratory that shows the proposed mix design is in accordance with the requirements listed in this specification.

B. Quality Control Submittals

- 1. Backfill Compaction Test Results
- 2. Flowable Fill Test Results
 - a. Unconfined Compressive Strength

- b. Flow Consistency
- c. Setting and Early Strength
- 3. Delivery Tickets

1.05 Quality Assurance

A. Qualifications

- 1. Provide the services of a qualified, independent testing laboratory to perform all field tests.

1.06 Warranty

- A. Refill and restore to the original grade settlement in the backfill which takes place within the warranty period at no additional cost to the Owner. Restore the surface area where settlement has occurred, including, but not limited to repairing lawn and sustainable plant areas, including regrading, reseeding, refertilizing, and remulching and/or reapplying erosion control blanket; and repairing paved areas, including, but not limited to, repairing streets, drives, and sidewalks.
- B. Guarantee all trees, shrubs, ornamental plants, and plant plugs during the warranty period.

PART 2 - PRODUCTS

2.01 Bedding and Backfill Material Classifications

- A. Class IA: Angular, open- or coarse-graded coarse aggregate such as crushed stone or gravel. INDOT No. 8 coarse aggregate, and other coarse aggregate meeting the following nominal sizes and percent passing, will be considered an equivalent Class IA material:
 - 1. 100 percent passing 1-inch sieve
 - 2. 75-95 percent passing 3/4-inch sieve
 - 3. 40-70 percent passing 1/2-inch sieve
 - 4. 0-15 percent passing No. 4 sieve
 - 5. 0-10 percent passing No. 8 sieve
- B. Class IB: Angular, well- or dense-graded coarse aggregate such as crushed stone and gravel. INDOT No. 53 coarse aggregate, and other coarse aggregate meeting the following nominal sizes and percent passing, will be considered an equivalent Class IB material:
 - 1. 100 percent passing 1-1/2-inch sieve
 - 2. 80-100 percent passing 1-inch sieve
 - 3. 70-90 percent passing 3/4-inch sieve
 - 4. 55-80 percent passing 1/2-inch sieve
 - 5. 35-60 percent passing No. 4 sieve
 - 6. 25-50 percent passing No. 8 sieve
 - 7. 12-30 percent passing No. 30 sieve

8. 5-10 percent passing No. 200 sieve

C. Class II: Structural fill consisting of coarse, well graded, clean sands and gravel-sand mixtures including variously graded sands and gravels containing small percentages of fines, generally granular and non-cohesive, either wet or dry. Soil types GW, GP, SW and SP are included in this class. Provide Class II material which meets the requirements of INDOT Standard Specifications Section 904 classification for Structure Backfill with maximum particle size.

D. Maximum Particle Size for Class I and Class II Materials

Nominal Pipe Size (in.)	Maximum Particle Size (in.)
2-4	1/2
6-8	3/4
10-15	1
16 and larger	1 1/2

E. Excavated Material: Excavated material suitable for use as trench backfill must be clean and free of rocks and frozen soil lumps larger than 6 inches, wood, debris, or other extraneous material.

F. Flowable Fill: Removable, self-leveling, self-compacting, flowable material with a minimum unconfined compressive strength (28 day) of 50 psi and a maximum unconfined compressive strength of 150 psi. Provide Removable Flowable Backfill material which meets the requirements of INDOT Standard Specifications Section 213 and Section 904 classification for Type 4 Structure Backfill.

2.02 Sheeting and Bracing

A. Provide sheeting, shoring and bracing capable of sustaining the lateral forces of the trench and pit banks and that comply with all applicable OSHA requirements. Protective systems for excavations 20 feet deep or greater must be designed and certified by a registered Professional Engineer.

PART 3 - EXECUTION

3.01 Preparation

A. Planning

1. Maintain traffic flow at all streets and service drives during construction.
2. Do not cut farm fences when gates are available within a reasonable distance to move equipment from one field to another.
3. Comply with the terms and limits of easements. Obtain property access permission prior to accessing or traversing yards or fields outside easements.

B. Protection

1. Before any excavation is started, provide adequate protection for all lawns, trees, landscape Work, shrubs, fences, hydrants, sidewalks, utility poles, and other objects that are to remain in place.
2. Maintain such protection for as long as necessary to prevent damage from operations.
3. Movable items such as mailboxes and roadway signs may be temporarily relocated during construction unless shown otherwise on the Drawings. Reinstall movable items in their original location immediately after backfilling and compacting is complete. Replace movable items damaged during construction with new items at the Contractor's expense.
4. Verify the location of existing sanitary sewers, water mains, gas mains, electric ducts, telephone ducts, utility services, and other underground structures. Determine the exact location of and the means of protection for these facilities and structures. Protect, support and maintain operation of these facilities during construction.

C. Site Preparation

1. Complete site clearing and grubbing.
2. Remove existing pavement and walks from the areas of excavation.
3. Strip topsoil and vegetation from the areas of excavation.
 - a. Clean topsoil may be stockpiled for reuse.
 - b. Do not mix grass, weeds, roots, brush, and stones larger than 1-inch in diameter with stockpiled topsoil. Dispose of root contaminated topsoil.

3.02 Excavating

A. Keep open excavations free of water to avoid impacting the Work.

1. Provide and maintain adequate dewatering equipment to remove and dispose of surface water and groundwater entering excavations.
2. Use appropriate measures to prevent surface water from entering the excavation and to provide adequate drainage of the areas adjacent to the excavation.
3. Filter water from dewatering operations to remove sediment before discharge and disposal in accordance with Section 02101.

B. Excavate carefully and cautiously to avoid damaging existing underground utilities and structures.

1. Repair, or have repaired, existing utilities and structures broken or otherwise damaged during Construction.
2. Immediately bring to the attention of the Engineer any unforeseen conflicts with existing utilities exposed during excavation and preparation of trenches and pits.
3. If proposed utility cannot be installed at locations shown on the Drawings, adjust its alignment or relocate the existing utilities as approved by the Engineer.

- C. Store excavated materials suitable and necessary for backfilling in a neat pile adjacent to the excavation in a manner that will not interfere with traffic. Do not place such materials at heights or within the proximity of excavations where they may cause earth slides or cave-ins. Do not stockpile excavated material closer than 2 feet from the top edge of the excavation wall at ground surface.
- D. Remove excavated material not suitable for backfilling and excess suitable material from the job site. Dispose of the materials in accordance with all local, state, and federal regulations.

3.03 Contaminated Soils and Groundwater

- A. If suspected contaminated soils or groundwater are discovered during excavation, inform the Engineer immediately and cease excavation.
- B. Contact the corresponding regulatory agency based on the excavation location.
 - 1. If the excavation is within the INDOT right-of way, contact INDOT Environmental Services Division (317-232-5113) and report the suspected contamination to the IDEM Emergency Response hotline (888-233-7745). Follow INDOT Site Assessment Guidelines for proper investigation and handling of the suspected contaminated soils or groundwater.
 - 2. If the excavation is outside of the INDOT right-of-way, the Owner will report the suspected contamination to IDEM Emergency Response. IDEM may direct the Owner to additional regulatory agencies depending on the nature of the suspected contamination.
- C. Keep suspected contaminated soils separate from soils that appear to be “clean” or uncontaminated.
 - 1. DO NOT place suspected contaminated soils, in environmentally sensitive areas such as waterways, floodways, wetlands, karst features, or stormwater conveyances.
 - 2. Place suspected contaminated soil on a plastic tarp and cover with an additional plastic tarp or place in containers (e.g., drums) with a lid.
 - 3. Place a berm around the covered stockpile to ensure that soils are not blown by wind or carried by stormwater.
 - 4. Follow the direction of the regulatory agency in handling, storage, characterization, and disposal of contaminated soils.
- D. Leave suspected contaminated groundwater in the excavated area.
 - 1. If the suspected contaminated groundwater must be removed from the excavated area, pump to covered containers (e.g., drums or totes) for proper disposal.
 - 2. Follow all federal, state and local disposal requirements for suspected contaminated groundwater.
 - a. Discharging contaminated groundwater to a waterway or stormwater conveyance requires an emergency NPDES permit from IDEM’s Office of Water Quality. The contaminated groundwater must meet the NPDES

drinking water quality standards. Contaminated groundwater may not be discharged until the permit is obtained (typically 90 days).

- b. Discharging contaminated groundwater to the sanitary sewer requires local approval and analytical tests per the local sewer use ordinance or wastewater discharge requirements.
- E. Any increase or decrease of cost resulting from encountering contaminated soils or groundwater will be adjusted in the manner provided in the General Specifications.

3.04 Sheeting and Bracing

- A. Properly shore, sheet, brace, or cut back at the proper slope, all excavations to safely install utilities and to protect adjacent streets and structures.
- B. The Contractor is responsible and accountable for all sheeting and bracing used and for damages to persons or property resulting from the improper quality, strength, placement, maintenance and removal of the sheeting, shoring, and bracing, including damage to trees, shrubs, walkways and other property.

3.05 Trenching

- A. Excavate trenches to the depths and widths shown or as required for the proper installation of the pipe and appurtenances.
- B. Excavate trenches in straight lines. Keep sides of trenches as near vertical as possible and properly sheet and/or brace, if required. Perform open cut excavation except where otherwise approved or noted on Drawings.
- C. Provide a continuous, uniform bearing support for the pipe on bedding within the trench, dished to provide circumferential support to the lower third of each pipe. Dig out holes to receive pipe bells.
- D. As ordered by the Engineer, remove rock and soft material encountered in the trench which, in the opinion of the Engineer, is incapable of providing adequate bearing to support the pipe. Remove material to accommodate the minimum specified bedding depth below the required elevation and fill with Class I or Class II material as specified. Review with the Engineer the locations where over-excavation and additional granular backfill is required due to the presence of rock or soft material, prior to conducting such over-excavation.
- E. Do not open more than 50 feet of trench in advance of the installed pipe, unless otherwise directed or permitted by the Engineer. Excavate the trench within 6 inches of full depth for a distance of at least 30 feet in advance of the pipe installation, unless otherwise directed or permitted.
- F. Support all sewer, gas, water or other pipes or conduits crossing the trench to prevent damage and service interruptions. The manner of supporting such pipes or conduits will be subject to the approval of the Engineer or the inspector of the Utility involved.

- G. Provide adequate sheeting and bracing in trenches and pits to protect life, property and the Work. Renew and maintain sheeting, planking, timbering, shoring, bracing, and bridging, and do not remove until sufficient backfill has been placed to protect the pipe.
- H. Where rock is encountered in excavations, remove the rock by mechanical means. Use a rock trencher which produces excavated material commensurate to granular backfill, which can then be used as bedding for pipe in areas of rock excavation. Blasting is not permitted.

3.06 Trench Backfill

- A. Specifications regarding trench backfilling also apply to excavated pits.
- B. Do not backfill trenches until all piping and utilities have been inspected by the Engineer.
- C. Backfill all trenches within State Highway right-of-way in accordance with INDOT Specifications. Backfill all trenches within the right-of-way of other public authorities having jurisdiction in accordance with requirements of the public authority.
- D. For any trench that intersects any portion of the pavement/structure loading zone use Class I backfill materials.
- E. For any utility located in proximity to a building foundation use 1H:1V structure loading zone rule for the placement of compacted bedding and backfill materials.
- F. Comply with details shown on the Drawings for the placement of bedding and backfill materials for each pipe material.
- G. Placement and Compaction Requirements:
 1. Place Bedding, Haunching, and Initial Backfill materials in 4- to 6-inch balanced lifts to ensure proper compaction and filling of all voids. Haunching shall be hand placed (e.g., shovel slice, hand tamp) to ensure proper compaction and complete filling of voids.
 2. For Final Backfill materials, use procedures and equipment for the Standard Proctor compaction test in accordance with ASTM D698/AASHTO T99.
 3. Outside the pavement/structure loading zone:
 - a. Place final backfill in maximum 12-inch lifts.
 - b. Compact each layer to a minimum of 90 percent of the maximum Standard Proctor dry density.
 - c. Provide additional compaction if required to minimize settling. Limited mounding of backfill above finish grade may be performed to compensate for settlement with the approval of the Engineer.
 - d. Prepare upper portion of trench for restoration of disturbed areas as applicable.

4. Within the pavement/structure loading zone:
 - a. Place final backfill in 6- to 8-inch lifts, except place final 12 inches in 6-inch lifts.
 - b. Compact each layer to 95 percent of the maximum Standard Proctor dry density, except the final 12 inches under pavement, compact each 6-inch lift to 100 percent of the maximum Standard Proctor dry density.
 - c. Prepare upper portion of trench for pavement replacement as applicable.
5. Stone and unpaved driveways and alleys:
 - a. Place final backfill in 6- to 8-inch lifts.
 - b. Compact each layer to 95 percent of the maximum Standard Proctor dry density.
 - c. Replace the last 12 inches of surface with the same material as the original surface unless otherwise specified and compact to 100 percent of the maximum Standard Proctor dry density.

H. Compaction Procedures

1. Place final backfill in balanced lifts to ensure proper compaction and filling of all voids.
2. Class IA material: Shovel slice or otherwise carefully place; walk or hand tamp into place.
3. Class IB material: For the first 24 inches of backfill over the pipe, use hand-operated tamping devices. Use standard mechanical methods (powered tampers, vibrators, etc.) for the remainder of the trench.
4. Class II material: For the first 24 inches of backfill over the pipe, use hand-operated tamping devices. Use standard mechanical methods (powered tampers, vibrators, etc.) for the remainder of the trench.
5. Do not flood or puddle with water to consolidate backfill.
6. When compaction test results are unsatisfactory, re-excavate, re-compact the backfill and retest until the specified compaction is obtained.

I. Flowable Fill

1. Discharge the mixture from mixing equipment into the space to be filled. Do not float pipe when placing flowable fill. Bring the flowable fill up uniformly to the fill line. Keep each filling stage continuous.
2. Protect flowable fill from freezing until the material has stiffened and bleeding water has subsided. As the temperature nears freezing, additional curing time may be needed.
3. Concrete may be placed on the flowable fill as soon as bleeding water has subsided. Place all pavements on flowable fill according to manufacturer's instructions.

- J. Maintain backfilled trenches in a smooth and uniform condition until paving or seeding operations are completed.

3.07 Field Quality Control

A. Tests

1. Class IB Compaction Tests: Perform compaction tests for Class IB trench backfill material in accordance with ASTM D698 and as follows:
 - a. At each road crossing: vertically at 2-foot intervals in the trench
 - b. At every 1,000 feet longitudinally in roadways along the pipe alignment and vertically at 2-foot intervals in the trench
 - c. Notify the Engineer 24 hours prior to the tests so that he may be present for the compaction tests.
 - d. No additional payment will be made for compaction tests. Compaction tests are considered incidental to the Work.
2. Class II Compaction Tests: Perform compaction tests for Class II trench backfill material in accordance with ASTM D698 and as follows:
 - a. At each road crossing: vertically at 2-foot intervals in the trench
 - b. At every 1,000 feet longitudinally in roadways along the pipe alignment and vertically at 2-foot intervals in the trench
 - c. Notify the Engineer 24 hours prior to the tests so that he may be present for the compaction tests.
 - d. No additional payment will be made for compaction tests. Compaction tests are considered incidental to the Work.
3. Flowable Fill Tests: Perform the following tests for flowable fill:
 - a. Unconfined Compressive Strength
 - b. Flow Test: Conduct flow consistency testing in accordance with ASTM D6103 by filling a 3-inch diameter by 6-inch high open ended cylinder placed on a smooth, nonporous, level surface. Pull the cylinder straight up within 5 seconds and measure the spread of the fill. The diameter of the spread shall be 8 inches or more with no noticeable segregation.
 - c. Setting and Early Strength Test: Determine whether the flowable fill has hardened sufficiently for loads to be applied and construction activities to continue by conducting one of the following tests:
 - 1) Penetration Resistance test in accordance with ASTM C403 – minimum value of 500 psi required for loading
 - 2) Ball Drop test in accordance with ASTM D6024 – maximum indentation diameter of less than 3 inches required for loading

3.08 Material Disposal

- A. All existing utility infrastructure and appurtenances (piping, structures, etc.) that are to be replaced or removed to allow for new construction are the responsibility of the Contractor. As these materials are excavated, remove them from the site on a daily basis and dispose of them in accordance with applicable local, state and federal rules and regulations.

-END-

SECTION 02535 - PAVEMENT AND SIDEWALK REPAIR AND REPLACEMENT

PART 1 - GENERAL

1.01 Summary

A. Section Includes

1. Providing all labor, tools, equipment and materials necessary to restore pavement, sidewalks, curbs and gutters to as good or better condition than existed prior to construction.
2. Preparing and resurfacing existing paved areas including streets, drives, parking lots, etc.

B. Related Sections

1. Section 02220 – Trenching, Backfilling and Compaction for Utilities
2. Section 02583 – Pavement Markings

1.02 References

A. Indiana Department of Transportation (INDOT) Standard Specifications, latest edition

B. Porter County Supplemental Design & Construction Standards & Specifications

1. Section 8.06 – Public Streets
2. Section 8.18 – Standard Drawings

1.03 Quality Assurance

A. Qualifications

1. Obtain materials from the same source throughout the Project.
2. Submit name of the asphalt mixing plant to the Engineer for approval.
3. Submit job mix design on an INDOT Material and Test Division standard form or similar form

B. Requirements

1. Perform Work and provide materials in accordance with INDOT Standard Specifications Sections 402, 403, 405, 406, 409 and 904 and Porter County Supplemental Design & Construction Standards & Specifications Section 8.06 and 8.18.

1.04 Project/Site Conditions

- A. Environmental Requirements: Do not apply asphalt materials if subgrade is wet or excessively damp or if the following conditions are not met:
1. Tack Coat: Minimum surface temperature of 60 degrees F.
 2. Asphalt Base Course: Minimum surface temperature of 40 degrees F and rising at time of placement.
 3. Asphalt Surface Course: Minimum surface temperature of 60 degrees F at time of placement.

PART 2 - PRODUCTS

2.01 Materials

A. Asphaltic Concrete Paving

1. Tack Coat – Asphalt Emulsion, SS-1h, AE-NT in accordance with INDOT Standard Specification Section 902.01.
2. Performance Grade Asphalt Binder – PG 64-22, in accordance with INDOT Standard Specification Section 902.01
3. Aggregate Base – Compacted aggregate No. 53, in accordance with INDOT Standard Specification Section 904.
4. Hot Mix Asphalt (HMA) mixture – As shown on the Drawings

B. Asphalt Paving Mix

1. Provide dry materials to eliminate foaming. Thoroughly mix the materials.
2. Binder content and aggregate mix shall meet the requirements of INDOT Standard Specification Section 402.04.

C. Temporary Pavement Repair

1. Cold Mixed Asphalt (CMA) Intermediate, No. 8 or 9 in accordance with INDOT Standard Specification Section 403.

D. Portland Cement Concrete

1. In general, use ready-mixed concrete meeting the requirements of ASTM C94. Provide concrete that contains the following:
 - a. Cement – 6 bag minimum per cubic yard
 - b. Air Content – 5% to 7%
 - c. Coarse Aggregate Size – 1 1/2" maximum
 - d. Slump – 3" to 5"
 - e. Compressive Strength – 4,000 psi

PART 3 - EXECUTION

3.01 Asphalt Pavement General

- A. Clean areas to be paved or surfaced. Remove temporary pavement materials such as cold mix which are not part of the permanent pavement, and all deleterious and unsuitable materials.
- B. Replace in kind all pavement encountered with respect to base courses, surface courses and thicknesses or as shown on the Drawings, using whichever pavement section is greater.
- C. Match the finish elevations, lines and grades of replacement pavement to the original elevations, lines and grades.
- D. Perform cutting of existing material in a manner that results in neat parallel lines with no uneven or jagged edges. Repair roadway surface damaged by construction equipment outside of the cutting limit for no additional payment.
- E. When removing pavement, do not exceed the width of the excavated trench by more than 12 inches on each side.
- F. Remove materials from the job site as materials are excavated.

3.02 Asphalt Pavement Replacement

A. Preparation

- 1. Ensure the subgrade or aggregate base is dry and proof-roll in accordance with INDOT Standard Specification Section 203.
- 2. Compact Aggregate Base, No. 53 to 100 percent maximum dry density in accordance with INDOT Standard Specification Section 301.
- 3. Verify the gradients and elevations of subgrade or aggregate base are accurate prior to placing asphalt.
- 4. Prepare the aggregate base for the application of asphalt pavement in accordance with INDOT Standard Specification Section 207.
- 5. Install geogrid on aggregate base prior to the application of asphalt pavement in accordance with Porter County Supplemental Design & Construction Standards & Specifications Sections 8.06 and 8.19.
- 6. Place Tack Coat on existing paved surfaces and between lifts in accordance with INDOT Standard Specification Section 406 with a minimum application rate of 0.06 gallons per square yard.

B. Placement

- 1. Place HMA course on previous placed course after pavement has cooled sufficiently to prevent distortions and withstand compaction.
- 2. Spread pavement and compact in accordance with INDOT Standard Specification Sections 402 and 409.03.

3. Place each course to compacted thickness shown on the Drawings. The application rate of 110 pounds per square yard is equivalent to 1 inch of asphalt pavement, in place.
4. Restore pavement markings to emulate existing pavement markings, as specified in Section 02583.

3.03 Installation Tolerances

- A. Thickness: Compact each course to produce the thickness indicated within the following tolerances:
 1. Base Course: +/- 1/2 inch
 2. Surface Course: + 1/4 inch, no minus
- B. Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:
 1. Base Course: 1/4 inch
 2. Surface Course: 1/8 inch
 3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.

3.04 Protection

- A. Protect asphalt mixtures and courses in accordance with INDOT Standard Specification Section 402.13.
- B. Do not allow traffic on asphalt pavement until the mixture has cooled and hardened sufficiently to prevent distortion.

3.05 Concrete Sidewalk, Curb and Gutter, and Driveways

- A. General
 1. Use concrete forms that are straight and free from warp. Extend forms the full depth of concrete.
 2. Clean the forms of foreign matter and oil the forms before placing concrete.
 3. Cut existing concrete in neat parallel lines with no uneven or jagged edges.
 4. Spade concrete to avoid a honeycomb appearance and float the surface with a wood float to prevent surface irregularities.
 5. Match the finish elevations, lines, and grades of concrete Work to the original elevations, lines, and grades unless otherwise noted on Drawings.
- B. Perpendicular Crossings
 1. Remove existing sidewalks and curbs and gutters to a minimum of 2 feet beyond the sides of the trench and to the nearest construction or expansion joint (whichever is greater) where excavation crosses sidewalks and curbs and gutters.

2. Replace in kind all removed sidewalks, curbs and gutters and concrete driveways with respect to thickness and area dimensions.

C. Replacement Concrete

1. Remove existing concrete completely.
2. Shape and compact the subgrade to a firm, even surface.
3. Remove unsuitable materials and replace with suitable materials.
 - a. Remove all soft, yielding, or other unsuitable material which cannot be compacted satisfactorily.
 - b. Remove or break off all rock encountered to at least 6 inches below the subgrade surface.
 - c. Fill any holes or depressions resulting from the removal of unsuitable material with satisfactory material and compact to conform with the surrounding subgrade surface.
4. Construct concrete sidewalks, curbs and gutters and driveways to the sections shown on the Drawings.
5. Where shown, construct concrete ramps including detectable warning elements.

3.06 Construction Joints

1. In general, install joints to match the existing joints in regard to type and spacing.
2. Where concrete sidewalk or pavement is constructed adjacent to the curb, place expansion and contraction joints at the same locations in the curb as the pavement slab.
3. Expansion Joints: Place preformed 1/2-inch joint filler around all appurtenances, such as manholes and utility poles which extend into and through sidewalks, between the sidewalk and any fixed structure such as a building, and castings which extend into and through curbs and gutters.
 - a. Extend the joint filler the full depth of the concrete and make flush with the surface of the adjacent concrete.
 - b. Form expansion joints transverse across sidewalks at a maximum spacing of 48 feet for tangent sections and 20 feet for radial sections.
 - c. At the time of curb and gutter construction, place transverse expansion joints at the ends of all returns, at and around all castings, and at intervals not to exceed 100 feet. Install contraction joints at maximum 10-foot spacing. Contraction joints in curbs and gutters may be saw cut or formed, as described further below.
 - d. Expansion joints between the curb and new or existing drives or existing curbs shall be doweled by 1/2-inch (#4) bars at 3 feet on center.
 - e. Seal expansion joints in the sidewalks, driveways, ramps, and curbs.
4. Contraction Joints: Provide transverse contraction joints at a maximum spacing of 5 feet, formed by a jointing tool, trowel, or similar means. Extend the joint approximately 1/4 of the concrete depth and make approximately 1/8-inch wide.

3.07 Finishing

- A. Provide a light broom finish on sidewalks.
- B. Tool edges and joints with 1/4-inch radius.

3.08 Protection

- A. Protect new concrete from traffic.
 - 1. Cure concrete a minimum of 5 days for sidewalks and 14 days for curbs and gutters or until the minimum design compressive strength is attained, whichever is less.
 - 2. Do not allow traffic on concrete pavement for a minimum of 7 days.
- B. Replace all sidewalks, curbs and gutters and drives damaged by Contractor's operations for no additional payment.
- C. The Contractor is responsible for pavement and sidewalk placed during rain or cold weather. Remove and replace any and all pavement and sidewalk damaged by rain or low temperatures for no additional payment.

-END-

SECTION 02583 - PAVEMENT MARKING

PART 1 - GENERAL

1.01 Summary

- A. Section Includes: Forming and installing or removing pavement traffic markings.
- B. Related Sections
 - 1. Section 02535 – Pavement and Sidewalk Repair, Pavement Resurfacing

1.02 References

- A. Indiana Department of Transportation (INDOT) Standard Specifications, latest edition
 - 1. Section 909 – Paint and Liquid Epoxy
 - 2. Section 921 – Pavement Marking Materials

1.03 Warranty

- A. Guarantee all pavement markings against failure resulting from material defects, method of application, or the result of snowplowing and deicing activities. The material shall be warranted to retain its color, retro-reflectivity, and durability. The material shall be free of other obvious defects or failures. Replace all pavement markings which fail to meet warranted conditions for no additional payment.

PART 2 - PRODUCTS

2.01 Pavement Markings

- A. Traffic Paint – traffic paint shall be in accordance with INDOT Standard Specification Section 909.05.
- B. Glass Beads – glass beads shall be in accordance with INDOT Standard Specification Section 921.02.
- C. Thermoplastic – thermoplastic material shall be in accordance with INDOT Standard Specifications Section 921.02.

PART 3 - EXECUTION

3.01 Preparation

- A. Clean the pavement of all dirt, oil, grease, excess sealing material, excess pavement marking material and all other foreign material prior to applying new pavement traffic markings.
 - 1. New paint pavement markings may be placed over sound existing markings of the same color.
 - 2. The pavement surface shall be dry prior to applying pavement traffic markings.
- B. Apply traffic paint only when the pavement temperature is 40 degrees Fahrenheit or above. The wet film thickness of the traffic paint shall be a minimum of 15 mils. Painted lines and markings shall be immediately reflectorized by applying glass beads at a uniform minimum rate of 6 pounds per gallon of traffic paint.
- C. Control points required as a guide for pavement traffic markings shall be spotted with paint for the full length of the road to be marked.
 - 1. Space control points along tangent sections at a maximum interval of 100 ft. pace control points along curve sections so as to ensure the accurate location of the pavement traffic markings.
 - 2. The location of control points shall be approved by the Engineer prior to the pavement marking application.
- D. Place pavement markings at the locations shown on the Drawings. Unless otherwise specified, pavement marking lines shall be 4" wide, pavement stop bars 24" wide.
- E. Apply all double line markings, such as a no-passing zone or the center line of an undivided multi-lane roadway, in one pass.
- F. Apply traffic paint with a spray type machine capable of applying the traffic paint under pressure through a nozzle directly onto the pavement. The machine shall be equipped with the following:
 - 1. an air blast device for cleaning the pavement ahead of the painting operation,
 - 2. a guide pointer to keep the machine on an accurate line,
 - 3. at least two spray guns which can be operated individually or simultaneously,
 - 4. paint agitator(s),
 - 5. a control device to maintain uniform flow and application,
 - 6. an automatic device that will provide a broken line of the required length, and
 - 7. an automatic glass bead dispenser which is synchronized with the marking application.
 - 8. When fast-drying traffic paint is used, the machine shall also be capable of heating the paint to a maximum of 160 degrees Fahrenheit.

3.02 Protection

- A. Protect pavement markings from traffic until dry to eliminate tracking.

-END-

[THIS PAGE INTENTIONALLY LEFT BLANK]

SECTION 02720 - STORM SEWER SYSTEMS

PART 1 - GENERAL

1.01 Summary

- A. Section Includes: Furnishing and installing storm sewers, inlets, catch basins, manholes, other drainage structures, and appurtenances.
- B. Related Sections
 - 1. Section 02220 – Trenching, Backfilling and Compaction for Utilities

1.02 References

- A. American Association of State Highway and Transportation Officials (AASHTO), latest editions
 - 1. CONCRETE
 - a. AASHTO M86 – Standard Specification for Nonreinforced Concrete Sewer, Storm Drain, and Culvert Pipe (ASTM C14)
 - b. AASHTO M170 – Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe (ASTM C76)
 - c. AASHTO M199 – Standard Specification for Precast Reinforced Concrete Manhole Sections (ASTM C478)
 - d. AASHTO M207 – Standard Specification for Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe (ASTM C507)
 - 2. CORRUGATED METAL
 - a. AASHTO M36 – Standard Specification for Corrugated Steel Pipe, Metallic-Coated for Sewers and Drains (ASTM A760)
 - 3. PLASTIC
 - a. AASHTO M330 – Standard Specification for Polypropylene Pipe, 12 to 60 in. Diameter (ASTM F2881)
- B. American Society for Testing and Materials (ASTM), latest editions
 - 1. CONCRETE
 - a. ASTM A615 – Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
 - b. ASTM C14 – Standard Specification for Nonreinforced Concrete Sewer, Storm Drain, and Culvert Pipe
 - c. ASTM C76 – Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
 - d. ASTM C443 – Standard Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets
 - e. ASTM C478 – Standard Specification for Precast Reinforced Concrete Manhole Sections

- f. ASTM C507 – Standard Specification for Reinforced Concrete Elliptical Culvert, Storm Drain, and Sewer Pipe
 - g. ASTM C928 – Standard Specification for Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete Repairs
 - h. ASTM C990 – Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants
 - i. ASTM C1433 –Standard Specification for Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers
 - j. ASTM C1577–Standard Specification for Precast Reinforced Concrete Monolithic Box Sections for Culverts, Storm Drains, and Sewers Design According to AASHTO LRFD
2. CASTINGS
- a. ASTM A48 – Standard Specification for Gray Iron Castings
3. CORRUGATED METAL
- a. ASTM A760 – Standard Specification for Corrugated Steel Pipe, Metallic-Coated for Sewers and Drains
 - b. ASTM A929 – Standard Specification for Steel Sheet, Metallic-Coated by the Hot-Dip Process for Corrugated Steel Pipe
4. PLASTIC
- a. ASTM C923 – Standard Specification for Resilient Connectors Between Reinforced Concrete Manhole Structures, Pipes, and Laterals
 - b. ASTM D1784 –Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds
 - c. ASTM D2412 –Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading
 - d. ASTM D3034 –Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings
 - e. ASTM D3212 –Standard Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
 - f. ASTM D3350 –Standard Specification for Polyethylene Plastics Pipe and Fittings Materials
 - g. ASTM D4101–Standard Classification System and Basis for Specification for Polypropylene Injection and Extrusion Materials
 - h. ASTM F477 – Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
 - i. ASTM F679 – Standard Specification for Poly(Vinyl Chloride) (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings
 - j. ASTM F2306 –Standard Specification for 12 to 60-inch Annular Corrugated Profile Wall Polyethylene (PE) Pipe and Fittings for Gravity-Flow Storm Sewer and Subsurface Drainage Application
 - k. ASTM F2764 –Standard Specification for 6 to 60 in. Polypropylene (PP) Double and Triple Wall Pipe and Fittings for Non-Pressure Sanitary Sewer Applications

- I. ASTM F2881 –Standard Specification for 12 to 60 in. Polypropylene (PP) Dual Wall Pipe and Fittings for Non-Pressure Storm Sewer Applications

C. Indiana Department of Transportation (INDOT) Standard Specifications, latest edition

1. Section 901 – PCC Materials
2. Section 904 – Aggregates
3. Section 907 – Concrete, Clay, and Plastic Drainage Components
4. Section 908 – Metal Pipe
5. Section 910 – Metal Materials

D. Porter County Supplemental Design & Construction Standards & Specifications

1. Section 8.09 – Utilities
2. Section 8.18 – Standard Drawings

1.03 Submittals

A. Product Data

1. Pipe
2. End Sections
3. Structures
4. Castings
5. Manhole Steps

1.04 Delivery, Storage, and Handling

A. Pipe possessing defects including, but not limited to the following, will be rejected for installation:

1. Variations from straight centerline
2. Elliptical shape in round pipe
3. Lack of rigidity
4. Illegible markings as required herein
5. Bruised, broken, or otherwise damaged metallic or bituminous coating or liner, as applicable
6. Deep or excessive gouges, dents, bends, or scratches on the pipe wall
7. Fractures, punctures, or cracks passing through the pipe wall
8. Damaged or cracked ends where such damage would prevent making a satisfactory joint

B. Concrete pipe and structures possessing defects including, but not limited to the following, will be rejected for installation:

1. Fractures or cracks passing through the wall
2. Honeycombed or open texture which would adversely affect the function of the sections

3. Ends of sections are not normal to the walls and centerline of the section

PART 2 - PRODUCTS

2.01 Lift Holes in Concrete Structures and Pipe

- A. Lift holes shall only be allowed in precast concrete structures, sections, and pipe as specified below. All permissible lift holes shall be machine cast or drilled.
- B. Lift Hole Repairs
 1. Use stiff, non-shrink, rapid setting, rapid hardening, concrete patching material meeting the requirements of ASTM C928 R-2 or R-3 and mixed in accordance with manufacturer's installation instructions.
 2. Hand-place the material after first washing out the hole with water. Completely fill the void created by the lift hole with the material.
 3. Cover the repaired area with a minimum 12 x 12-inch piece of joint wrap material secured to the pipe.
 4. Secure the joint wrap material to the pipe using a method that holds the fabric in place during the placement and compaction of backfill. Use grout mixtures, mastics, or strapping devices to secure the fabric to the pipe.
 5. Lift hole repairs shall be properly finished, cured, and sound.
- C. Lift hole plugs are not acceptable.
- D. Any alternate methods shall be submitted to Engineer for review.

2.02 Reinforced Concrete Pipe (RCP)

- A. Pipe Material
 1. Class III or greater, Wall B type RCP conforming to ASTM C76, AASHTO M170, and INDOT Standard Specification Section 907.
 2. Precast concrete pipe and structures shall be from a source listed in the INDOT list of certified precast concrete producers
- B. Joints
 1. Tongue and groove joints with compression type rubber gasket conforming to ASTM C443.
- C. Fittings: Provide fabricated wye and tee branches.
- D. Lift holes are only allowed in concrete pipe with an inside diameter of 30 inches or more.

2.03 Pipe Accessories

A. Concrete End Sections

1. Provide concrete end sections in accordance with INDOT Standard Specification Section 907, and AASHTO M170.

2.04 Precast Concrete Manholes, Inlets, Catch Basins and Accessories

- A. Lift holes: Provide precast concrete sections with no more than 3 holes cast or drilled in the section for handling.

B. Precast Concrete Manholes

1. Provide precast concrete manholes
 - a. Cone section: eccentric cone section conforming to ASTM C478
 - b. Flat top: where necessary, provide flat top section conforming to ASTM C478
2. Bases and Risers/Barrels conforming to ASTM C478, AASHTO M199, and INDOT Standard Specification Section 907.
3. Precast concrete floor or form with Class A concrete. Floor shall be sloped to the sewer invert.
4. Gaskets shall be 1/2-inch diameter flexible butyl rubber conforming to ASTM C990 for all manhole section joints, including the chimney section(s) and frame/casting. Provide Kent seal or approved equal.

C. Precast Concrete Inlets and Catch Basins

1. Provide precast concrete catch basins and inlets to the dimensions as shown on the Drawings.

D. Castings

1. Cast iron frames and covers in accordance with ASTM A48 Class 35B and INDOT Standard Specification Section 910, unless otherwise shown on the Drawings.
2. Supply all frames and covers from one manufacturer.
3. Provide frames and covers rated for traffic, of non-rocking design, with machined horizontal and vertical bearing surfaces.
4. Provide manhole frame and cover as shown in structure data table on Drawings or approved equal. Storm manhole covers shall have the words "STORM SEWER" cast in recessed letters 2 inches in height.
5. Provide inlet and catch basin frames and covers as shown in structure data table on Drawings or approved equal. Casting shall have the words "DUMP NO WASTE! DRAINS TO WATERWAYS!" cast in raised or recessed letters 1 inch in height and shall have a symbol of a fish cast with the message.

E. Steps

1. Provide steps in all structures 4 feet deep or greater in accordance with AASHTO M199 and INDOT Standard Specification Section 907 with:
 - a. Minimum 10 inches of clear step width
 - b. Copolymer polypropylene coated steel steps meeting the requirements of ASTM D4101 and composed of deformed 1/2-inch minimum diameter reinforcing steel in accordance with ASTM A615, Grade 60.
 - c. Non-coated cast iron steps will not be accepted.
2. Manufacturers
 - a. M.A. Industries, Inc.
 - b. American Step Company, Inc.
 - c. Or approved equal

F. Pipe to Structure Connections

1. Pipe penetration holes shall be either pre-formed by manufacturer or core drilled in the field.
2. For concrete pipe and RCP, provide non-shrink grout mixture of 1 part Portland cement to 2 parts No. 23 fine aggregate in accordance with INDOT Standard Specification Section 904.
3. For HDPE, Polypropylene, and PVC pipe, provide flexible neoprene molded boot or resilient seal which conforms to ASTM C923.
 - a. Provide Kor-N-Seal boot as manufactured by National Pollution Control Systems, Inc. or approved equal.
 - b. Provide resilient seal as manufactured by A-Lok or approved equal.

G. Pipe to Lateral Connections

1. Pipe penetration holes shall be either pre-formed by manufacturer or core drilled in the field.
2. For lateral connection, provide an Inserta Tee traditional lateral connection, consisting of a PVC hub, rubber sleeve, and stainless steel band, as manufactured by ADS or approved equal.
3. Provide pipe, fittings, adaptors, couplings, and other appurtenances necessary to connect lateral to pipe.

PART 3 - EXECUTION

3.01 Examination

A. Verification of Conditions

1. Before installing piping, verify location, depth, type of joint needed, and size of pipe to which connection is proposed.
2. Assure that lines can be run as proposed. Notify Engineer immediately for approval of any necessary deviation before lines are run.
3. Work all lengths of pipe into place without forcing.

3.02 Installation

A. Storm Sewer Pipe and Accessories

1. Lay storm sewer pipe uniformly to line and grade so that finished storm sewer will present a uniform conduit.
2. Set line and grade by means of laser beam and target for alignment and grade.
3. Lay storm sewer pipe progressively upgrade in a manner to form close, concentric joints with smooth bottom inverts.
4. Maintain 18 inches of vertical separation and 10 feet of horizontal separation between new storm sewer and new or existing water mains unless otherwise directed. Notify Engineer immediately of all instances where separation cannot be maintained.
5. After joint is made, place sufficient bedding material along each side of the pipe to prevent conditions that might tend to move the pipe off line or grade.
6. Temporarily plug installed piping systems at end of each day's Work or other interruption of progress on a given line. Plug shall be adequate to prevent entry of animals and entrance or insertion of deleterious materials and shall be installed in a manner satisfactory to the Engineer.
7. Securely attach fabricated branches for wyes and tees to wall of pipe in such a manner as to not restrict or otherwise interfere with flow characteristics of the pipe.
8. Complete all field-cutting of pipe in a neat, trim manner using a hand or power saw. Field cutting of closed profile pipe requires any exposed channels be sealed in accordance with the manufacturer's instruction.
9. Install trash guards on all pipe end sections 18 inches and larger in diameter.
10. If any existing drainage tile systems are encountered during construction, reconstruct the tile to its original conditions or connect tile to the new storm drainage system as approved by the Engineer.

B. Precast Concrete Manholes, Inlets, Catch Basins, and Accessories

1. Unless otherwise indicated, provide 0.1 foot sewer invert drop through manholes.
2. Keep structure excavations free from water during construction.
3. Fill all areas excavated below the depth required for the manhole base with compacted granular backfill or No. 8 crushed stone at Contractor's expense.
4. Install precast concrete risers and adjusting rings in such combination that the manhole frame will be at the proper elevation. Supply a minimum of 1 adjusting ring for each manhole. Adjusting rings shall be a minimum of 2 inches and maximum of 6 inches in height. Supply precast concrete riser sections for adjustment greater than 6 inches in height.
5. Casting frames and adjusting rings should be set in a full mortar bed or as otherwise approved.
 - a. Provide non-shrink grout mixture of 1 part Portland cement and 2 parts No. 23 fine aggregate in accordance with INDOT Standard Specification Section 904.
6. Install manhole frame to grade and centered.

7. Install steps beginning at 8 inches below the top of the cone or flat top section. Install steps at 10 inches on center minimum to 16 inches on center maximum, continuous and spaced uniformly.
8. Install steps with minimum 3-inch wall embedment and minimum 4-inch clear distance projection from the wall as measured from the point of embedment.
9. Install precast concrete base, risers, cone, and flat top sections so that the axis of the manhole is vertical.
10. Install precast concrete inlets and catch basins so that the axis of the structure is vertical.
11. Install gaskets for joints in accordance with the manufacturer's instructions. Wrap riser joints with external joint seals in accordance with manufacturer's instructions.
12. Prior to backfilling, fill all holes used for handling with rapid setting patch material or with precast concrete plugs secured with Portland cement mortar.
13. Unless otherwise indicated, set castings for all structures at finish grade level. Adjust castings to the satisfaction of the Engineer, at Contractor's expense.
14. Remove all debris and excess soil from structures after installation and prior to flushing the storm sewer pipes, to the satisfaction of the Engineer.

C. Connection to Existing Structures

1. Core drill new pipe penetration at the proper location where the pipe enters the structure.
2. For concrete pipe and RCP, fill the annular space between the pipe and structure wall with non-shrink grout as specified in Article 2.04F.2 of this Section.
3. For HDPE and PVC pipe, install flexible neoprene molded boot or resilient seal to secure the pipe in the structure wall as noted in Article 2.04F.3 of this Section.

3.03 Field Quality Control

A. Tests

1. Deflection Test for Flexible Pipes
 - a. Pipe materials considered flexible include:
 - 1) HDPE
 - 2) Polypropylene
 - 3) PVC
 - b. Perform testing in presence of Engineer.
 - c. Perform deflection testing on all flexible pipes after the final backfill has been in place for at least 30 days.
 - d. Perform deflection test using a mandrel pulled by hand. The mandrel (go/no-go) device shall be cylindrical in shape and constructed with 9 or 10 evenly spaced arms or prongs.
 - e. No pipe shall exceed a vertical deflection of 5 percent. Uncover, replace, and retest any pipe not passing the deflection test until a satisfactory result is achieved.

B. Inspection

1. Closed-circuit Television Inspection (CCTV)
 - a. Televiser all mainline storm sewers (manhole to manhole).
 - b. Televiser all lateral storm sewers (manhole to inlet, inlet to inlet, etc.)..
 - c. Perform all CCTV inspection in presence of Engineer.
 - d. Perform all CCTV inspection on all storm sewers after the final backfill has been in place for at least 30 days.
 - e. Clean all new storm sewers prior to CCTV inspection. The image shall be clear, so the interior condition of the pipe is easily evaluated.
 - f. Correct all unacceptable conditions found during the CCTV inspection and re-televiser until no unacceptable conditions are found.
 - g. Unacceptable conditions are conditions that adversely affect the ability of the system to function as designed or to be properly maintained and may include, but are not limited to, the following:
 - 1) Protruding taps
 - 2) Cracked or faulty pipe
 - 3) Misaligned or deformed pipe
 - 4) Debris in line
 - 5) Infiltration/exfiltration
 - 6) Excessive gaps at joints
 - 7) Bellies or sags with a depth greater than or equal to 10 percent of the pipe diameter (maximum of 3 inches) or a length greater than 25 feet
 - h. Submit a copy of the CCTV recording within 14 calendar days of the inspection on a digital media storage device compatible for playback on a personal computer (USB flash drive acceptable).

3.04 Cleaning

- A. Clean all new storm sewers after installation and before testing to the satisfaction of the Engineer.

-END-

[THIS PAGE INTENTIONALLY LEFT BLANK]

SECTION 02902 - LANDSCAPING FOR UTILITIES

PART 1 - GENERAL

1.01 Summary

A. Section Includes

1. Providing topsoil, fertilizer, seed, mulch, sod, trees, bushes, ornamental plants, plant plugs, fencing and related items shown or specified.
2. Repairing or replacing mailboxes, fences, planters, lawn areas and other items and areas disturbed, damaged or destroyed during construction of the Work.

B. Related Sections

1. Section 02101 – Stormwater Pollution Prevention and Erosion Control

1.02 References

A. American Society for Testing and Materials (ASTM), latest editions

1. ASTM D997 – Standard Specification for Emulsified Asphalt

1.03 Definitions

- A. Lawn Areas: grassed areas which are cut and maintained on a routine basis, including lawns at homes and businesses and grass shoulders of streets, roads, and highways.
- B. Sustainable Plant Areas: areas, including yards at homes and businesses and shoulders of streets, roads, and highways, that are planted with native vegetation and maintained as gardens, prairies, savannas, forests, and other sustainable plant communities.

1.04 Submittals

- A. Seed source and quality
- B. Seed tags

1.05 Warranty

- A. Regrade, reseed, restraw and/or reapply erosion control blanket as necessary and when requested, to satisfaction of Engineer during the one-year warranty period.
- B. Guarantee all trees, shrubs, ornamental plants, and plant plugs during the one-year warranty period.

PART 2 - PRODUCTS

2.01 Lawn Area Products

- A. Lime: as specified in Section 02101
- B. Fertilizer: as specified in Section 02101
- C. Grass (seed or sod): as specified in Section 02101
- D. Mulch: as specified in Section 02101
- E. Topsoil: as specified in Section 02101, Section 02110, and Section 02200
- F. Erosion Control Blanket: as specified in Section 02101
- G. Flexible Growth Medium: as specified in Section 02101

2.02 Sustainable Plant Area Products

- A. Lime: as specified in Section 02101
- B. Fertilizer: as specified in Section 02101
- C. Bluff Plant Seed: as specified in Section 02101
- D. Streambank Plant Seed: as specified in Section 02101
- E. Mulch: as specified in Section 02101
- F. Topsoil: as specified in Section 02101, Section 02110, and Section 02200
- G. Compost: as specified in Section 02101
- H. Erosion Control Blanket: as specified in Section 02101
- I. Flexible Growth Medium: as specified in Section 02101

2.03 Items Damaged or Destroyed

- A. Replacement fences, mailboxes, planters, and other items shall be:
 - 1. new and unused,
 - 2. the same type as the items removed, and
 - 3. of equal or better quality as the items being replaced when the items were new.
- B. Remove and relocate undamaged fence, mailboxes, planters, and other items when possible. Coordinate locations with property owner.

PART 3 - EXECUTION

3.01 General

- A. Replacement of underbrush in fields and woods, along farm fences and roads, and in similar areas is not required, unless otherwise shown on the Drawings.

3.02 Grading

- A. Grade all lawn and sustainable plant areas (i.e., non-paved areas) disturbed during construction, in accordance with Section 02200. Following the completion of finish grading, areas shall be smooth and uniform. Finish elevations and grades shall be the same as elevations and grades prior to construction, unless otherwise shown on the Drawings.

3.03 Preparation

- A. To prepare the disturbed area for seeding, scarify the planting area to a minimum depth of 6 inches, in accordance with Section 02101. Mix soil amendments such as fertilizer and lime if required, in the top 2 to 4 inches of topsoil with a disk or rake operated across the slope.

3.04 Grass

- A. Apply grass seed or install sod where indicated on the Drawings or otherwise required in accordance with Section 02101.
- B. Seed between February 15 and June 1 and between August 15 and November 1. Do not sow seed during adverse weather conditions. Do not broadcast seed during high wind. Do not sow seed when the moisture content of the soil is too low or too high for seed germination.

3.05 Sustainable Plant Seed

- A. Apply sustainable plant seed where indicated on the Drawings in accordance with Section 02101.
- B. Seed between February 15 and June 1 and between August 15 and November 1. Do not sow seed during adverse weather conditions. Do not broadcast seed during high wind. Do not sow seed when the moisture content of the soil is too low or too high for seed germination.

3.06 Hydroseeding

- A. Hydroseeding may be incorporated to apply seed to areas with slopes equal to or steeper than 3 to 1 (H:V). Add seed and fertilizer to water and thoroughly mix at the rates specified by a professional landscape contractor. Flexible growth medium shall be added at the rates recommended by the manufacturer after the seed, fertilizer and water have been thoroughly mixed, to produce a homogeneous slurry. Apply slurry under pressure, uniformly over the entire area. The hydroseeded area shall not be rolled.

3.07 Erosion Control Blanket

- A. Where seed has been applied to areas with slopes equal to or steeper than 3 to 1 (H:V) or within drainage channels, protect the bare slope and plant seed with an erosion control blanket, as indicated on the Drawings. In accordance with Section 02101, place erosion control blanket over the seed and anchor according to manufacturer's instructions to prevent the seed from washing away.
- B. If hydroseeding has been incorporated to apply to areas with slopes equal to or steeper than 3 to 1 (H:V), erosion control blanket shall not be applied.

3.08 Planting Trees and Other Plants

- A. Plant trees, shrubs, ornamental plants, and plant plugs during the proper time and under the proper conditions for the particular tree or plant as determined by local practice.
- B. Plant trees and other plants in the proper manner for the particular tree or plant being planted.
- C. If trees and other plants are to be planted within areas with slopes equal to or steeper than 3 to 1 (H:V), within drainage channels, or other areas where erosion control blanket is to be installed, plant trees and other plants after the installation of the erosion control blanket.
- D. Keep trees and plants properly watered until growth is assured.

3.09 Fencing and Other Restoration

- A. Locate fences, mailboxes, planters, and other items in the same location that the item had been prior to construction, unless otherwise shown on the Drawings or directed in the field.
- B. Erect wire and board fences plumb and on straight lines. Wire fences shall have the proper tension for the type of wire fence restored. Other fences and items shall be properly erected or constructed.
- C. Set mailboxes, posts, poles, and similar items plumb.
- D. Restore planters and similar items to the same shape the items had been prior to construction.

3.10 Clean-Up

- A. Clean up the job site following landscaping. Remove rubbish, excess materials, temporary structures, and equipment. Leave the Work in a neat and presentable condition.

-END-

SPECIAL PROVISIONS
 FOR
SHOREWOOD FOREST SUBDIVISION
RAVINE RESTORATION & STORM SEWER IMPROVEMENTS

PORTER CO. DEPARTMENT OF DEVELOPMENT & STORM WATER MANAGEMENT
 NOVEMBER 5, 2024

The following Special Provisions shall apply to and govern the project designated as **Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements**. Such Special Provisions supplement the specifications contained in the documents listed in the table below and, in case of conflict with any part or parts of said specifications, the Engineer shall determine which specifications shall take precedence and govern. The following hierarchy will be applied by the Engineer in resolving any conflict, error, ambiguity, or discrepancy in or between said specifications.

Specification	Issuing Agency	Adopted/Dated
Special Provisions for Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements	Porter Co. Department of Development & Storm Water Management	November 5, 2024
Technical Specifications for Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements	Porter Co. Department of Development & Storm Water Management	November 5, 2024
Construction Plans for Shorewood Forest Subdivision – Ravine Restoration & Storm Sewer Improvements	Porter Co. Department of Development & Storm Water Management	November 5, 2024
General Specifications to the Construction & Maintenance Services Agreements	Porter Co. Department of Development & Storm Water Management	February 1, 2024

SECTION 105 CONTROL OF WORK

SP105.08 Tolerances for Accuracy of Lines, Grades, and Elevations

Each part or detail of the work shall be constructed according to the lines, grades, and elevations shown in the construction plans, provided the following tolerances for accuracy for particular parts or details of the work.

- (a) Proposed Grades and Elevations. Ground (i.e., spot) elevations shall be constructed to within +/- 0.2 feet of the ground (i.e., spot) elevations indicated on the construction plans, unless otherwise directed, in writing, by the Engineer.
- (b) Proposed Storm Sewer and Storm Sewer Structure Grades and Elevations. Storm sewer invert elevations shall be constructed to within +/- 0.1 feet of the invert elevations indicated on the construction plans or +/- 2% of the diameter of the storm sewer concerned, whichever is greater, unless otherwise directed by the Engineer. Storm sewer slopes shall be constructed to within +/- 0.005% of the storm sewer sloped indicated on the construction plans, unless otherwise directed by the Engineer.
- (c) Proposed Storm Sewer Structure Grades and Elevations. Storm sewer structure invert elevations shall be constructed to within +/- 0.1 feet of the invert elevations indicated on the construction plans or +/- 2% of the diameter of the storm sewer concerned, whichever is greater unless otherwise directed by the Engineer. Storm sewer structure rim elevations shall be constructed to within +/- 0.1 feet of the ground (i.e., spot) elevations indicated on the construction plans, unless otherwise directed by the Engineer.

SECTION 107 LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC

SP107.32 Road Closure Restrictions

Partial closure of Shorewood Drive, Kent Court, and/or Pickwick Place may be necessary in order to successfully complete portions of the work, including the removal and abandonment of existing storm sewers and the installation of new storm sewers, as well as associated pavement repair and replacement work. Such partial closure is subject to approval by the Department and shall be performed in accordance with the contract documents, including the maintenance of traffic requirements defined and described in Article 107.09 of the General Specifications. The Contractor shall limit the number of days that Shorewood Drive, Kent Court, and/or Pickwick Place remains partially closed to traffic to a maximum of 45 days, unless otherwise approved by the Department.

Full closure of Shorewood Drive, Kent Court, and/or Pickwick Place may be necessary in order to successfully complete portions of the work, including pavement replacement work. Such full closure is subject to approval by the Department and shall be performed in accordance with the contract documents, including the maintenance of traffic requirements defined and described in Article 107.09 of the General Specifications. The Contractor shall limit the number of days that Shorewood Drive, Kent Court, and/or Pickwick Place remains fully closed to traffic to a maximum of 5 days, unless otherwise approved by the Department.

SECTION 108 PROSECUTION AND PROGRESS

SP108.03 Preconstruction Conference

A preconstruction conference attended by the Department, Contractor, Engineer, and others, as appropriate will be held prior to the issuance of a notice to proceed and, in accordance with Article 108.03 of the General Specifications, at least one week prior to the start of work.

SP108.16 Earliest Date to Begin Work

In order to provide Owner with that time needed to acquire all easements and landowner agreements necessary for the performance of the work and/or to address encumbrances or restrictions specifically related to Contractor's use of the site, the Earliest Date to Begin Work is hereby established as July 1, 2025.

Once Owner has acquired all easements and landowner agreements necessary for the performance of the work and/or has addressed encumbrances or restrictions specifically related to Contractor's use of the site, Owner will determine the site to be ready for use, and shall furnish the site to Contractor via issuance of a notice to proceed. Such notice to proceed will identify the date on which the Contractor shall start to perform the work required under the contract documents. Such date shall not be earlier than the Earliest Date to Begin Work, unless otherwise agreed to by Contractor.

[THIS PAGE INTENTIONALLY LEFT BLANK]