

CONTRACT DOCUMENTS

FOR

PROJECT W24-0749:

RILEY PARK BRIDGE REPLACEMENT PROJECT

**Department of Engineering
City of Greenfield**

Guy Titus.....Mayor
Glen E. Morrow, PE.....City Engineer
V. 2024

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NOTICE TO BIDDERS
City of Greenfield

Department: **Department of Engineering**
10 S. State Street
Greenfield, Indiana 46140

Project/Work: **W24-0749: RILEY PARK BRIDGE REPLACEMENT PROJECT**

Notice is hereby given that the City of Greenfield will receive sealed bids for the above described "Project/Work" at Clerk-Treasurer's Office, 10 S. State Street, Greenfield, Indiana, until 9:30 a.m. prevailing local time, 10 S. State Street, on **April 14, 2026** and commencing as soon as practicable thereafter on the same date such bids will be publicly opened. No late Bids will be accepted.

A Bid Bond or certified check in an amount not less than five percent (5%) of the amount bid must be submitted with each Bid. A one hundred percent (100%) Performance and Payment Bond will also be required of the successful Bidder.

The Work consists of, but is not necessarily limited to the following:

Removal of two pedestrian bridges and abutments, and construction of two new pre-fabricated bridges, abutments, and related work.

Contract Documents for the Project/Work have been assembled into one or more bound Project Manuals which, together with Drawings, may be examined the Clerk-Treasurer's Office or the Department of Engineering at 10 S. State Street, Greenfield, Indiana 46140.

Electronic copies of the Drawings and Project Manuals will be available on the City of Greenfield website at <https://www.greenfieldin.org/government/engineering>. Bidders will be responsible to contact the Clerk-Treasurers office to be added to the plan-holders list if downloading electronic contract documents.

Bidders shall assure that they have obtained complete sets of drawings and Contract Documents and shall assume the risk of any errors or omissions in Bids prepared in reliance on incomplete sets of drawings and Contract Documents.

A pre-bid conference for discussion of the Work will be held on **March 24, 2026 at 2:00 pm** in the Riley Park Shelter House, 210 Apple Street, Greenfield, IN 46140. All prospective Bidders are strongly urged to attend the pre-bid conference to learn about the project.

For accommodations needed by persons with disabilities to attend the public bid opening meeting, please call (317) 477-4320.

The City of Greenfield reserves the right to reject any or all bids or to waive any informalities and to accept the bid which it deems most favorable to the interests of the City after all bids have been examined and canvassed. The City of Greenfield also reserves the right to evaluate bids with approved bridge substitutions, and may favor a shorter schedule over lowest bid price.

INSTRUCTIONS TO BIDDERS

City of Greenfield

Department (“Owner”): **Department of Engineering
10 S. State Street
Greenfield, Indiana 46140**

Project/Work: **W24-0749: RILEY PARK BRIDGE REPLACEMENT**

Owner’s Representative: **Ellen Kuker, Park Director**

Engineer: **Glen E. Morrow, PE**

1. GENERAL

- 1.1 Submission of a Bid shall constitute an unconditional agreement and acknowledgment by the Bidder to be bound by all terms and conditions set forth herein and in any of the documents assembled or referred to in the bound Project Manual of which these Instructions to Bidders are a part.
- 1.2 Sample forms are included in the Project Manual to acquaint Bidders with the form and provisions of various Bid Documents and other documentation required by the Contract Documents to be executed, completed and submitted by some or all Bidders, either as part of a Bid Submission or after the Bid Date. Such sample forms are not to be detached from the Project Manual, or filled out or executed. Separate copies of such forms and any other required documentation prescribed by the Contract Documents have been or will be furnished separately by the Owner and must be obtained directly from the City.
- 1.3 Instructions and requirements printed on any sample form included in the Project Manual or any form not so included but required to be completed, signed or furnished by a Bidder as part of a Bid Submission or after receipt and opening of Bids shall be deemed requirements established by these Instructions to Bidders to the same extent as if fully restated herein.
- 1.4 By submitting bid the Bidder agrees the bid proposal and price(s) contained herein shall be valid for ninety (90) days from bid opening.

2. DEFINITIONS

The following definitions shall apply to these Instructions to Bidders (ITB):

- 2.1 Bidder - Any person or entity who submits a Bid.
- 2.2 Bid - A written proposal submitted by a Bidder as part of the form prescribed herein offering to perform and complete the Work and to fulfill all other requirements of the Contract Documents for one or more specified prices.
- 2.3 Bid Documents - All documents and completed forms required to be submitted by a Bidder with and as integral parts of a Bid Submission, whether or not included as sample forms assembled in the Project Manual of which these Instructions to Bidders are a part. Such Bid Documents are listed and more fully described in ITB Section 5.3 hereof.

- 2.4 Bid Date - The date when Bids are to be received, opened and publicly read aloud as established by the Notice to Bidders as may be modified by Addenda.
- 2.5 Bid Submission - All documents presented by a Bidder for receipt and opening on the Bid Date.
- 2.6 Contract Documents - The Agreement and any exhibits thereto, Addenda (which pertain to the Contract Documents), Instructions to Bidders, Advertisement, Notice to Bidders, Bidder's Bid (including documentation accompanying the Bid and any post-Bid documentation submitted prior to the Notice of Award), Notice to Proceed, the Bonds, the General Conditions, the Additional Requirements Section, any supplemental or special conditions, the Specifications and the Drawings, as the same are more specifically identified in the Agreement.
- 2.7 E-Verify Program - An electronic verification of work authorization program of the Illegal Immigration Reform and Immigration Responsibility Act of 1996 (P.L. 104-208), Division C, Title IV, s.403(a), as amended, operated by the United States Department of Homeland Security or successor work authorization program designated by the United States Department of Homeland Security or other federal agency authorized to verify the work authorization status of newly hired employees under the Immigration Reform and control Act of 1986 (P.L. 99-603).
- 2.8 Owner - The City of Greenfield acting by and through the Department or other agency designated above.
- 2.9 Project Manual - The bound set of documents, sample forms, and Contract Documents (excluding plans and Addenda) approved by the Owner for the Work and/or Project described in the Notice to Bidders and of which these Instructions to Bidders are a part.

In all other respects, terms used herein shall have the meanings as stated in the General Conditions or other Contract Documents.

3. EXAMINATION OF SITE AND DOCUMENTS

- 3.1 Before the Bid Date, all Bidders shall carefully and thoroughly examine and inspect the entire site of the proposed Work and adjacent premises and the various means of approach and access thereto by means of a site inspection visit, and make all necessary investigations to inform themselves thoroughly as to the facilities necessary for delivering, placing and operating the necessary construction equipment, and for delivering and handling materials at the site, and shall inform themselves thoroughly as to any and all actual or potential difficulties, hindrances, delays and constraints involved in the commencement, prosecution and completion of the proposed Work in accordance with the requirements of the Contract Documents.
- 3.2 It shall be the sole responsibility of Bidders to make borings, test pits and to conduct such other investigations at or near the site of the proposed Work as they deem necessary to determine the character, location, and amount of materials to be encountered or other subsurface conditions which could affect the manner, cost or time required to perform the Work.
- 3.3 Bidders shall carefully and thoroughly examine the plans, specifications and other Contract and/or Project Manual Documents and shall assume the full risk of their own judgments as to the nature, quality and amount of the whole of the Work to be done, and for the price bid must assume all risk of any and all variances or errors in any computation or statement of amounts or quantities necessary to complete the Work in strict compliance with the Contract Documents.

- 3.4 Elevations of the existing ground surface or structures at the site of the Work as shown on the plans are believed to be reasonably correct, but are not guaranteed to be absolutely so and are presented only as an approximation. Bidders shall satisfy themselves as to the correctness of all elevations.
- 3.5 Information stated or depicted on plans concerning the location, dimensions, depth and other characteristics of underground structures and utilities is given only as general information and shall not be construed or relied upon by Bidders as a representation or assurance that such structures or utilities will be found or encountered as plotted, or that such information is complete or accurate. Bidders, therefore, shall satisfy themselves by such means as they may deem proper as to the location of all structures and utilities that may be encountered in construction of the Work and shall bear the risk of the number, type, location, dimensions and depth of all structures and utilities thus encountered.
- 3.6 The City of Greenfield Standard General Conditions for Construction Contracts, August 2018, is incorporated by reference as part of this bid. Copy of General Conditions are available at <https://www.greenfieldin.org/government/engineering>.

4. CLARIFICATIONS AND ADDENDA

- 4.1 If a Bidder finds conflicts, errors, discrepancies or ambiguities in the Contract Documents or any sample form, or if the Bidder is in doubt as to the intended meaning of any portion or provision therein, the Bidder shall at once give written notice thereof to the Owner's Representative, at least seven (7) consecutive calendar days prior to the Bid Date. No Bidder shall be allowed any extra compensation or time extension by reason of any conflict, error, discrepancy or ambiguity of which the Bidder had actual knowledge or reasonably should have known and which he/she failed to report within the period and in the manner required by these Instructions to Bidders.
- 4.2 No material changes, clarifications or interpretations of the Contract Documents will be issued except by written or graphic Addenda mailed or delivered to record holders of Contract Documents not less than three (3) days prior to the Bid Date. All such Addenda must be acknowledged by the Bidder and will become a part of the Contract Documents. The Owner will not be responsible for or bound by any oral or written interpretations or clarifications of the Contract Documents which anyone presumes to make on its behalf, except by an Addendum issued in accordance with this Section.

5. BID SUBMISSION

- 5.1 All Bid Documents shall be placed within a sealed envelope which shall be plainly labeled on the outside with the name and address of the Bidder, Project name and number (if applicable) and Due Date. If forwarded by mail, the sealed envelope must be enclosed in another envelope addressed to: City of Greenfield, Clerk-Treasurer, 10 S. State Street, Greenfield, Indiana 46140.
- 5.2 All Bid Documents as herein prescribed must be submitted with and as integral parts of each Bid Submission and shall be subject to all requirements of the Contract Documents, including drawings and these Instructions to Bidders. Bid Documents must be properly filled in and completed in every material respect and without interlineations, excisions, special conditions, qualifications or exceptions. Each Bid Document requiring a signature shall be signed by an individual duly authorized to execute such document on Bidder's behalf. A bid executed by a corporation, joint venture, or other entity with an assumed name shall have the legal and correct

name thereof followed by the word “by” and the signature and title of the officer or other person authorized to sign for it.

5.3 The Bid Documents to be thus submitted by each Bidder shall consist of all of the following (5.3.1, 5.3.2, 5.3.3):

.1 Bidder’s Itemized Proposal and Declarations. A sample of this form is included in the Project Manual and must be utilized by all Bidders. Such document includes and consists of the following constituent “Parts”:

“Part 1 - Bidder Information”

“Part 2 - Proposal (Bid)”

“Part 3 - Contract Items and Unit Prices”

“Part 4 - Contract Documents and Addenda”

“Part 5 - Exceptions”

“Part 6 - Nepotism Disclosure Form”

“Part 7 - Additional Declarations, including certification required by IC 5-22-16.5”

“Part 8 - Drug Testing”

“Part 9 - Non-Collusion Affidavit”

“Part 10 - E-Verify Affidavit”

“Part 11 – “Certification Regarding Debarment, Suspension, Ineligibility And Voluntary Exclusion Contracts/Subcontracts”

“Part 12 - Signatures”

.2 Bid Security in the form of a Bid Bond or Certified Check in an amount not less than five percent (5%) of the bid price. Such Bid Security shall serve as security to insure the execution of the Agreement and the furnishing of other required documents by the successful Bidder, including Performance and Payment Bonds. A sample Bid Bond form is included in the Project Manual and such form, or such other form as may be approved in advance by Owner, shall be utilized if such a bond is furnished as Bid Security. A Bid Bond shall be executed by a surety company licensed to transact such business in the State of Indiana and qualified as a surety under the underwriting limitations on the current list of “Surety Companies Acceptable on Federal Bonds” as published in the U.S. Treasury Department Circular No. 570; the Bidder shall also furnish as part of the Bid Submission a signed power of attorney establishing the authority of the person executing such Bid Bond on behalf of the surety. Bid Security shall be held until the Contract is executed with the successful Bidder. In the event that all bids are rejected, the Bid Security of all Bidders will be returned upon request. No “Annual” bid bonds, cash deposits or cashiers’ checks will be accepted.

.3 Contractor’s Bid for Public Work (State Form 96). Such form is included in this Project Manual on pages BID-10 to BID-15 and shall be used in consideration of a Bidder’s ability to perform its obligations under the terms of the contract Documents and in determining other material factors bearing upon a Bidder’s responsibility. If Bid is under \$150,000 either of these forms may be submitted as a Post-Bid submittal under Section 6, Post Bid Requirements.

5.4 Bids may be withdrawn in person by a Bidder during normal hours of business prior to the time fixed for opening of Bids. In the event of a valid withdrawal of a Bid, the Bid Security of the withdrawing Bidder will be returned promptly. No Bid may be withdrawn after opening of Bids has commenced except after expiration of such period following the Bid Date as specifically

provided by law, plus any extension thereof as provided elsewhere in these Instructions to Bidders. Bidder's failure to provide all completed documentation as required in ITB Section 5.3 may result in Bid being deemed non-responsive.

6. POST-BID REQUIREMENTS

Within five (5) business days of notification by Owner, the apparent lowest responsive Bidder will be required to submit additional documents and satisfy additional requirements as conditions to such Bidder being found by the Owner to be a responsible Bidder, as follows:

- 6.1 Proof of Insurability. The Bidder shall furnish: (1) proof of insurance showing existing coverage in accordance with the terms and amounts stated in the General Conditions, or (2) a letter or statement certifying that, in the event that the bid is awarded by the Owner, an insurance company will provide the required coverage to the Bidder submitting the bid. Such proof of insurance or the letter/statement shall be issued by a financially responsible insurance company authorized to do business in the State of Indiana.
- 6.2 Surety Letter of Intent. The Bidder shall furnish a written statement or letter from a Surety company licensed to transact such business in the State of Indiana and qualified as a surety under the underwriting limitations on the current list of "Surety Companies Acceptable on Federal Bonds" as published in U.S. Treasury Department Circular No. 570, which assures the Owner that, in the event the Bid is accepted and a contract is awarded by Owner, said Surety will execute and deliver both a Performance Bond and Payment Bond as required by the Contract Documents.
- 6.3 Joint Venture Agreement. If the Bidder is a joint venture, partnership or other combination of two or more persons or entities, the Bidder shall submit a copy of the joint venture or other agreement by which such joint venture, partnership or other association has been formed, executed by all such participating persons or entities. If the Bid is signed by less than all parties that comprise the Bidder, suitable written evidence of the authority of such signing party to bind all such parties must also be furnished.
- 6.4 Subcontractor/Supplier List. The Bidder shall submit all subcontractors and suppliers that will be used on the project, as required (POST-BID-1).
- 6.5 Manufacturers List. The Bidder shall submit a complete list of all equipment and supplies that are listed in the Manufacturer's List (POST-BID-2).
- 6.6 E-Verify Documentation. - The Bidder shall submit verification that it is enrolled in and participating in the E-Verify program (POST-BID-3).

7. BID EVALUATION AND AWARD

- 7.1 **Award of the Contract will be made to the lowest, responsive and responsible Bidder, where the Bid is reasonable and does not exceed the funds available for the project.** The Owner reserves the right to reject all Bids and may waive or allow a Bidder to correct errors, omissions or other irregularities in Bid Documents that are found not to have afforded the Bidder a substantial competitive advantage over other Bidders.

- 7.2 The Owner shall have the right to reject any Bid if investigation of the Bidder fails to satisfy the Owner that such Bidder is properly qualified to carry out the obligations and complete the Work. Any or all Bids will be rejected if there is reason to believe that collusion exists among Bidders.
- 7.3 For unit price Contract Items, estimated quantities and unit prices will serve as the basis for determining the proposed price of each Bid. Patent math errors in statements of Bid prices or totals may be corrected by the Owner or Engineer, in which case the corrected amounts will be used for the purpose of Bid evaluation, comparison and other award considerations. However, neither the Owner nor the Engineer shall be required to discover or correct any error or omission in a Bid and the Bidder shall assume the risk of and be bound to the consequences of any such error or omission.
- 7.4 The Owner may, at its sole option, award the Contract to a Bidder on a conditional basis to afford the Bidder additional time and opportunity to submit required documents or to fulfill other requirements. In such case, the Owner will furnish to the Bidder a notice of conditional award which will establish (i) the additional conditions to be fulfilled for the award to become effective, and (ii) the time limit within which such conditions shall be satisfied. If the Bidder fails to satisfy the conditions in the manner and within the time specified in such notice, the Owner may declare such Bidder to be non-responsible and award the Contract, conditionally or unconditionally, to another Bidder. Time limitations governing the Owner's award of the Contract shall be extended for such additional period as may be required to effectuate the conditional award procedure set forth in this sub-section, and no Bid may be withdrawn during such period of extension.

8. CONTRACT EXECUTION; SUBMITTALS

- 8.1 Within five (5) business days after the award notice, the successful Bidder shall sign and deliver at least three (3) counterparts of the Agreement, utilizing the form thereof included in the Project Manual and make delivery thereof to the Owner, along with other documents as prescribed by the Contract Documents. After execution and delivery of the Agreement and other required documents, and acceptance thereof by the Owner, the Bid Security furnished by each Bidder will be returned to the respective Bidders upon request.
- 8.2 If the Bidder fails or neglects to execute and deliver the Agreement and other required documents as prescribed by the preceding sub-section, the Bidder shall be deemed to have repudiated the Contract and thereupon the award shall be null and void; and the Bid Security provided by the Bidder shall be forfeited to and retained by the Owner as liquidated damages for such failure of the Bidder to execute the Contract, it being understood and agreed that the character and amount of actual damages sustained by the Owner cannot reliably be ascertained and measured and that the amount of the Bid Security is intended as a reasonable prospective estimate of such actual damages.
- 8.3 Concurrently with the execution and delivery of the Agreement to the Owner, or within such other period as the Owner may prescribe, the successful Bidder (Contractor) shall submit the following as conditions to the Bidder's right to proceed with and receive payment for any Work:
- .1 Proof of all required insurance coverage, a one hundred percent (100%) Performance Bond and a one hundred percent (100%) Payment Bond as prescribed by the General Conditions or other Contract Documents. Such bonds shall be executed utilizing the sample forms included in the Project Manual or alternative forms approved in advance by the Owner. Indemnification clauses between successful Bidder and the Surety shall not be binding upon the Owner;

- .2 The preliminary schedules required by Paragraph 2.7 of the General Conditions;
- .3 Other Post-Bid submittals required by the Contract Documents.

9. LIQUIDATED DAMAGES

- 9.1 The Contract Documents provide for the payment of liquidated damages in the event of unexcused failure by the Contractor to complete the Work within the time required by the Contract Documents. **Such liquidated damages are to be assessed and recovered at the rate of \$500.00 per day for delay in achieving the Substantial Completion date no later than May 1, 2027 and at the rate of \$100.00 per day for delay in achieving the Final Completion date no later than June 1, 2027.**
- 9.2 The per diem rate(s) of liquidated damages established by the preceding sub-section have been determined and are intended as reasonable prospective estimate(s) of the type and amount of actual damages which the Owner may sustain in the event of such delay(s). Submission of a Bid shall constitute an unconditional acknowledgment and agreement by the Bidder that such liquidated damages are fair and reasonable and do not and will not constitute a penalty, and that such liquidated damages may be assessed and recovered by the Owner as against the successful Bidder/Contractor and its Surety in lieu of actual damages for delayed completion.

10. CHANGE ORDERS

- 10.1 During the course of the Work, should the Owner or Bidder determine that additional work which was foreseeable is required, such work shall not be automatically awarded through change orders. However, the Owner reserves the right to award additional work which was foreseeable to the original Bidder where doing so is in the best interest of the Owner. All such awards are and will remain subject to necessary approvals.

11. ANTICIPATED PROJECT SCHEDULE MILESTONES (subject to change)

Legal Ad #1	March 14, 2026
Legal Ad #2	March 21, 2026
Pre-Bid Meeting	March 24, 2026
Deadline for Questions	March 31, 2026
Final Addenda Released	April 3, 2026
Bid Opening	April 14, 2026
Bid Award	April 28, 2026
NTP Issued	May 1, 2026
Substantial Completion	May 1, 2027 *
Final Completion	June 1, 2027 *

*** Final Completion must be achieved within 30-calendar days after substantial completion, but no later than the date listed.**

END OF INSTRUCTIONS TO BIDDERS

PART 1
BIDDER'S ITEMIZED PROPOSAL
AND DECLARATIONS
City of Greenfield

Instructions to Bidders:

This form shall be utilized by all Bidders. Except as otherwise specifically provided, all Parts shall be fully and accurately filled in and completed and notarized.

Project: **W24-0749: RILEY PARK BRIDGE REPLACEMENT PROJECT**

Proposal For Construction of: **Removal of two pedestrian bridges and abutments, and construction of two new pre-fabricated bridges, abutments, and related work.**

Date: _____

To: **City of Greenfield, Department of Engineering**
10 S. State Street, Greenfield, Indiana 46140

PART 1
BIDDER INFORMATION
(Print)

1.1 Bidder Name: _____

1.2 Bidder Address: Street Address: _____
City: _____ State: _____ Zip: _____
Phone #: () _____ Fax #: () _____

1.3 Former Business names of Bidder: _____

1.4 Bidder is a/an *[mark one]*:
 Individual Partnership Indiana Corporation
 Foreign (Out of State) Corporation
 Joint Venture
Other: _____

PART 2
PROPOSAL (BID)

- 2.1 The undersigned Bidder proposes to furnish all necessary labor, machinery, tools, apparatus, materials, equipment, service and other necessary supplies, and to perform and fulfill all obligations incident thereto in strict accordance with and within the time(s) provided by the terms and conditions of the Contract Documents for the above described Work and Project, including any and all addenda thereto, for the Unit Prices applicable to the Contract Items as stated in Part 3 hereof, which Unit Prices, when multiplied by estimated unit quantities for such Contract Items per Segment, for a sum total of _____ Dollars (\$_____). The Bidder acknowledges that evaluation of the lowest Bid shall be based on such sum and further acknowledges that the unit quantities listed in Part 3 of this Proposal are estimates solely for the purpose of bid evaluation and contract award and are not to be construed as exact or binding. The Bidder further understands that all Work which may result on the Contract shall be compensated for on a Unit Price basis and that the Owner and Engineer cannot and do not guarantee the amount or quantity of any item of Work to be performed or furnished under the Contract.
- 2.2 By submitting bid the Bidder agrees the bid proposal and price(s) contained herein shall be valid for ninety (90) days from bid opening.

PART 3
CONTRACT ITEMS AND UNIT PRICES

Section not Used

PART 4

CONTRACT DOCUMENTS AND ADDENDA

4.1 The Bidder agrees to be bound by the terms and provisions of all Contract Documents as defined in the General Conditions and incorporates such Contract Documents herein by reference

4.2 The Bidder acknowledges receipt of the following addenda:

<u>Addendum Number</u>	<u>Date</u>
_____	_____
_____	_____
_____	_____
_____	_____

PART 5
EXCEPTIONS

Instructions to Bidders:

- 5.1 *The Bidder shall fully state each exception taken to the Specifications or other Contract Documents in Section 5.3 of this Part.*

- 5.2 *Bidder is cautioned that any exception taken by Bidder and deemed by Owner to be a material qualification or variance from the terms of the Contract Documents may result in this Bid being rejected as non-responsive.*

- 5.3 *Exceptions:*

PART 6
NEPOTISM DISCLOSURE

Contractor: _____

Project: _____

For purposes of compliance with Indiana Code Chap. 36-1-21, please specify below whether Contractor (individual), or a person who wholly or partially owns Contractor (business), is a relative, as that term is defined by Indiana Code § 36-1-21-3, of either the Mayor of Greenfield, Indiana, or a member of the City Council of Greenfield, Indiana.

- Contractor (individual) or Contractor (business) does NOT have a relative who is either the Mayor of Greenfield, Indiana or a member of the City of Greenfield, Indiana.
- Contractor (individual) or Contractor (business) DOES have a relative who is either the Mayor of Greenfield, Indiana or member of the City Council of Greenfield, Indiana (must specify all relatives below):

- Mayor Guy Titus
- City Councilor [please specify name of Councilor(s)]

Name of Authorized Representative (Printed)

Signature of Authorized Representative:

Date: _____

PART 7
ADDITIONAL DECLARATIONS

- 7.1 Bidder certifies for itself and all its subcontractors compliance with existing laws of the City of Greenfield, the State of Indiana and the United States regarding (a) prohibition of discrimination in employment practices on the basis of race, sex, disability, religion, national origin, disabled veteran status and Vietnam-era veteran status.
- 7.2 Bidder certifies that it has thoroughly examined the site of the Work and informed itself fully regarding all conditions under which it will be obligated to operate and that in any way affect the Work, and knows, understands and accepts the existing conditions. Bidder further certifies that it has thoroughly reviewed the Contract Documents, including all Addenda, and has had the opportunity to ask questions and obtain interpretations or clarifications concerning Contract Documents.
- 7.3 Hiring Practices. The Bidder shall, upon request of the Owner, make available its policies, practices and standards for the hiring of applicants, except as prohibited under Indiana Code section 22-2-17-3, to the extent such information is related to the provision of services under this Bid.
- 7.4 Bidder Qualifications. Bidder certifies to Owner the following:
- .1 That Bidder is eligible to work in the State of Indiana;
 - .2 That Bidder's labor force participates in apprenticeship or training programs approved by and registered with the United States Department of Labor's Office of Apprenticeship, or its successor organization;
 3. That Bidder has implemented an employee drug testing plan that meets, or exceeds, the requirements set forth in IC 36-1-12-24;
 - .4 That Bidder will utilize project managers and superintendents with sufficient relevant management experience to complete bidder's scope of work;
 - .5 That Bidder and its management personnel possess any and all professional trade licenses required by law for any trade or specialty area in which Bidder is seeking a contract award, and said licensures have not been suspended or revoked within the previous five (5) years;
 - .6 That Bidder is utilizing a surety company which is on the United States Department of Treasury's listing of approved sureties; and
 - .7 For contracts estimated to be over \$300,000.00, that Bidder and sub-contractors expected to be awarded at least \$300,000 for the project are qualified under IC 4-13.6-4 or IC 8-23-10.

Violation of this certification shall constitute a material breach of the contract to result from this Bid, and upon such a violation Owner may terminate the contract. In addition, upon a violation of this certification, Owner shall report such violation to the City Legal Department who may, at its discretion, debar the Bidder from eligibility for future city purchasing, bids, contracts, quotes and/or projects.

PART 8
DRUG PROGRAM

- 8.1 Pursuant to IC 4-13-18-5, the Bidder must submit with the Bid a written plan for a program to test the Bidder's employees for drugs. A contractor that is subject to a collective bargaining agreement that establishes an employee drug testing program shall only submit a copy of the relevant part of the collective bargaining agreement establishing the program. Failure to submit a written plan for an employee drug testing program, or relevant parts of a collective bargaining agreement establishing an employee drug testing program shall result in the Bid being rejected as non-responsive.

- 8.2 Attach a copy of your drug testing program or the relevant parts of your collective bargaining agreement establishing a drug testing program to this page.

PART 9
NON-COLLUSION AFFIDAVIT

The individual person(s) executing this Proposal, being first duly sworn, depose(s) and state(s) that the Bidder has not directly or indirectly entered into a combination, collusion, undertaking or agreement with any other bidder or person (i) relative to the price(s) proposed herein or to be bid by another person, or (ii) to prevent any person from bidding, or (iii) to induce a person to refrain from bidding; and furthermore, this Bid Proposal is made and submitted without reference to any other bids and without agreement, understanding or combination, either directly or indirectly, with any persons with reference to such bidding in any way or manner whatsoever.

PART 10
E-VERIFY PROGRAM

Pursuant to Indiana Code 22-5-1.7-11.1, the contractor awarded the Bid is required to enroll in and verify the work eligibility status of all its newly hired employees through the E-Verify program. The contractor who is awarded the Bid is not required to verify the work eligibility status of all its newly hired employees through the E-Verify program if the E-Verify program no longer exists.

The individual person(s) executing this Proposal, being first duly sworn, depose(s) and state(s) that the Bidder does not knowingly employ an unauthorized alien. The undersigned further affirms that, prior to entering into an agreement for this Bid, the undersigned business entity will enroll in and agrees to verify the work eligibility status of all its newly hired employees through the E-Verify program.

PART 11
SIGNATURES

[Signature by or on behalf of the Bidder in the spaces provided below shall constitute execution of each and every Part of this Itemized Proposal and Declarations document. SIGNATURE MUST BE PROPERLY NOTARIZED.]

Written Signature: _____

Printed Name: _____

Title: _____

Important - Notary Signature and Seal Required in the Space Below

STATE OF _____

SS:

COUNTY OF _____

Subscribed and sworn to before me this _____ day of _____, 20_____.

My commission expires: _____ (Signed) _____

Residing in _____ County, State of _____



CONTRACTOR'S BID FOR PUBLIC WORK – FORM 96

State Form 52414 (R2 / 2-13) / Form 96 (Revised 2013)
Prescribed by State Board of Accounts

PART I

(To be completed for all bids. Please type or print)

Date (month, day, year): _____

1. Governmental Unit (Owner): City of Greenfield, Indiana
2. County: Hancock
3. Bidder (Firm): _____
Address: _____
City/State/ZIPcode: _____
4. Telephone Number: _____
5. Agent of Bidder (if applicable): _____

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

The undersigned further agrees to furnish a bond or certified check with this bid for an amount specified in the notice of the letting. If alternative bids apply, the undersigned submits a proposal for each in accordance with the notice. Any addendums attached will be specifically referenced at the applicable page.

If additional units of material included in the contract are needed, the cost of units must be the same as that shown in the original contract if accepted by the governmental unit. If the bid is to be awarded on a unit basis, the itemization of the units shall be shown on a separate attachment.

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.

CERTIFICATION OF USE OF UNITED STATES STEEL PRODUCTS (If applicable)

I, the undersigned bidder or agent as a contractor on a public works project, understand my statutory obligation to use steel products made in the United States (I.C. 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. I understand that violations hereunder may result in forfeiture of contractual payments.

ACCEPTANCE

The above bid is accepted this _____ day of _____, 20____, subject to the following conditions: _____

Contracting Authority Members:

PART II
(For projects of \$150,000 or more - IC 36-1-12-4)

Governmental Unit: **City of Greenfield, Indiana**

Bidder (Firm): _____

Date (month, day, year): _____

These statements to be submitted under oath by each bidder with and as a part of his bid. Attach additional pages for each section as needed.

SECTION I EXPERIENCE QUESTIONNAIRE

1. What public works projects has your organization completed for the period of one (1) year prior to the date of the current bid?

Contract Amount	Class of Work	Completion Date	Name and Address of Owner

2. What public works projects are now in process of construction by your organization?

Contract Amount	Class of Work	Expected Completion Date	Name and Address of Owner

3. Have you ever failed to complete any work awarded to you? _____ If so, where and why?

4. List references from private firms for which you have performed work.

SECTION II PLAN AND EQUIPMENT QUESTIONNAIRE

1. Explain your plan or layout for performing proposed work. *(Examples could include a narrative of when you could begin work, complete the project, number of workers, etc. and any other information which you believe would enable the governmental unit to consider your bid.)*

2. Please list the names and addresses of all subcontractors *(i.e. persons or firms outside your own firm who have performed part of the work)* that you have used on public works projects during the past five (5) years along with a brief description of the work done by each subcontractor.

3. If you intend to sublet any portion of the work, state the name and address of each subcontractor, equipment to be used by the subcontractor, and whether you will require a bond. However, if you are unable to currently provide a listing, please understand a listing must be provided prior to contract approval. Until the completion of the proposed project, you are under a continuing obligation to immediately notify the governmental unit in the event that you subsequently determine that you will use a subcontractor on the proposed project.

4. What equipment do you have available to use for the proposed project? Any equipment to be used by subcontractors may also be required to be listed by the governmental unit.

5. Have you entered into contracts or received offers for all materials which substantiate the prices used in preparing your proposal? If not, please explain the rationale used which would corroborate the prices listed.

SECTION III CONTRACTOR'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 governing body awarding the contract must be specific enough in detail so that said governing body can make a proper determination of the bidder's capability for completing the project if awarded.

BID OF

(Contractor)

(Address)

**FOR
PUBLIC WORKS PROJECTS
OF**

Filed _____, _____

Action taken _____

POST-BID SUBMITTAL
SUBCONTRACTOR/SUPPLIER PARTICIPATION

A. SUBCONTRACTORS AND SUPPLIERS LIST

Instructions to Bidders: The Bidder shall submit a completed Subcontractor/Supplier list (see below) as required in ITB 6.4.

The Bidder shall enter the names, the type of work to be done, and the price, in the Subcontractors/Suppliers List for each subcontractor/supplier that the Bidder proposes to use for any part of the Work for the Project at an agreed price of \$10,000 or greater, as part of the total amount bid as stated above in Part 2.

Only one subcontractor/supplier shall be listed for each line. Upon award of a contract, the named subcontractors/suppliers shall be employed to perform the work, unless changes are specifically authorized by the Owner. Failure to furnish all information requested may render the bid non-responsive if it is determined that such omission materially affords the Bidder a substantial advantage over other Bidders.

Except as otherwise specifically stated by the Bidder in this Part, omission of any names of subcontractors/suppliers herein shall constitute an affirmative representation and statement that the Bidder proposes to use its own work force for that portion of the Work

Bidder's attention is directed to paragraphs 6.8, 6.9, and 6.11 of the City of Greenfield Standard General Conditions for Construction Contracts as they relate to use of subcontractors/suppliers.

Subcontractor Name	Work	Price
		\$
		\$
		\$
		\$
		\$
		\$
Supplier Name	Work	Price
		\$
		\$
		\$
		\$
		\$
		\$

(please duplicate and use this form, if additional sheets are necessary)

POST-BID SUBMITTAL
MANUFACTURERS LIST

Instructions to Bidders:

The Bidder shall enter, in the spaces provided below, the name of the manufacturer for ALL material and equipment listed below, to be incorporated into the Work.

Failure to furnish all information for each listed material or equipment item(s) may render the bid non-responsive.

Preliminary acceptance of equipment listed by the manufacturer's name shall not in any way constitute a waiver of the Drawing and Specification requirements covering such equipment. Acceptance will be based on full conformity with the Drawings and Specifications covering the equipment.

The information submitted on this Post-Bid-2 page does not alleviate the Bidder from submitting the required Subcontractor/Supplier Information on the Post-Bid-1 page.

<u>Material/Equipment Item</u>	<u>Manufacturer</u>
Pre-Fabricated Bridges	_____
Native Seed Mix	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

POST BID SUBMITTAL
E-VERIFY DOCUMENTATION
SEE ITB SECTION 6.6

Pursuant to Indiana Code 22-5-1.7-11.1 the Contractor shall provide documentation that it has enrolled and is participating in the E-Verify program. Contractor is required to submit proof from the E-Verify Program that it is currently enrolled in the Program. An example of confirmation is the confirmation e-mail received from E-Verify that the Contractor has successfully enrolled in E-Verify.

BID BOND
City of Greenfield

Instructions to Bidders

Bidders may use this form or other form containing the same material conditions and provisions as approved in advance by Owner/Obligee.

Bidder/Surety must attach a signed, certified and effective dated copy of the Power of Attorney or Attorney-In-Fact establishing the authority of the person(s) signing this Bid Bond on behalf of the Surety.

Surety company executing this bond shall appear on the most current list of "Surety Companies Acceptable on Federal Bonds" as specified in the U.S. Treasury Department Circular 570, as amended, and be authorized to transact business in the State of Indiana.

KNOW ALL MEN BY THESE PRESENTS, that the undersigned

"Bidder": _____
and

"Surety": [Name] _____
[Address] _____

a corporation chartered and existing under the laws of the State of _____, and authorized to do business in the State of Indiana,

are held and firmly bound unto the City of Greenfield, Indiana ("Owner/Obligee") in the full and just sum equal to five percent (5%) of the price stated in the Bid Proposal described below, including accepted alternates, if any, to be paid upon demand of the Owner/Obligee, together with interest at the maximum legal rate from date of demand and any attorney fees and court costs incurred by Owner/Obligee to enforce this instrument, to which payment well and truly to be made we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally and firmly by these presents.

WHEREAS, the Owner/Obligee has solicited bids for certain Work for or in furtherance of construction of public improvements described generally as

W24-0749: RILEY PARK BRIDGE REPLACEMENT PROJECT

pursuant to plans, specifications and other "Contract Documents" included as parts of and designated by such solicitation; and

WHEREAS, the Bidder has submitted to the Owner/Obligee a Bid Proposal to perform such Work.

NOW THEREFORE: The conditions of this obligation are such that if the Bid Proposal be accepted, with or without conditions, the Bidder shall within such time thereafter as prescribed by the Contract Documents (i) fulfill all conditions of such award that remain to be fulfilled, (ii) execute a Contract in accordance with the Bid Proposal and in the form and manner required by the Contract Documents, and (iii) thereafter provide all bonds, and other documentation required by the Contract Documents to be delivered to Owner/Obligee prior to commencing Work, including without limitation a sufficient and satisfactory Performance Bond and Payment Bond payable to Owner/Obligee, each in an amount of one hundred percent (100%) of the total Contract price as awarded and in form and with surety satisfactory to said Owner/Obligee, then this obligation to be void; otherwise to be and remain in full force and virtue in law, and the Surety shall, upon failure of the Bidder to comply with any or all of the foregoing requirements within the time specified above and as prescribed by the Contract Documents, immediate pay to the Owner/Obligee, upon demand, the amount hereof, in good and lawful money of the United States of America, not as a penalty, but as liquidated damages.

IN TESTIMONY THEREOF, the Bidder and Surety have caused this instrument to be duly signed and sealed this ____ day of _____, 20____.

This Bid Bond shall bind the undersigned Surety whether or not also signed by the Bidder.

“Bidder”

“Surety”

By: _____

By: _____

Printed: _____

Printed: _____

WARRANTY BOND
City of Greenfield

Instructions:

Successful Bidder must use this form or other form containing the same material conditions and provisions as approved in advance by Owner.

Date of Bond must not be prior to date of Contract. If Contractor is a Partnership, all partners should execute bond.

Surety company executing this bond shall appear on the most current list of "Surety Companies Acceptable on Federal Bonds" as specified in the U.S. Treasury Department Circular 570, as amended, and be authorized to transact business in the State of Indiana.

KNOW ALL MEN BY THESE PRESENTS: that

"Contractor": _____

and

"Surety": [name] _____
[Address] _____

a corporation chartered and existing under the laws of the State of _____, and authorized to do business in the State of Indiana,

are held and firmly bound unto the City of Greenfield, Indiana hereinafter called Owner/Obligee, in the penal sum of _____ Dollars, (\$_____) in lawful money of the United States, for the payment of which sum well and truly to be made, together with interest at the maximum legal rate from date of demand and any attorney fees and court costs incurred by Owner/Obligee to enforce this instrument, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Contractor has entered into a certain Agreement with the Owner/Obligee, dated as of the _____ day of _____, 20____, by which Contractor has agreed to perform and furnish certain Work for or in furtherance of construction of public improvements described generally as

W24-0749: RILEY PARK BRIDGE REPLACEMENT PROJECT

which Agreement, and the "Contract Documents" as referred to therein, are hereby incorporated herein by reference;

WHEREAS, Contractor has installed and completed and met all improvements, installations and requirements applicable to the above described Work, but said improvements and installations have not yet been accepted for public maintenance; and

WHEREAS, the Owner/Obligee requires a guarantee from the Contractor against defective materials and workmanship in connection with such maintenance.

NOW, THEREFORE, Contractor warrants the workmanship and all materials used in the construction, installation and completion of said Work, including all improvements and installations thereof, to be of good quality and constructed and completed in a workmanlike manner in accordance with the Agreement and Contract Documents and all local, state and federal laws, ordinances, rules, standards and regulations applicable to said Work;

FURTHERMORE, the conditions of the Surety's obligation hereunder are such that if Contractor at his own expense, for a period of 3 years, commencing on the date of Substantial Completion, shall make all repairs or replacements thereto which may become necessary by reason of improper or defective workmanship or materials, or any failure thereof to conform to the provisions of the Agreement or Contract Documents, then Surety's obligation is to be null and void; otherwise such obligation shall remain in full force and effect. Any repairs or replacements made under this Bond shall in like manner be subject to the terms and conditions hereof.

Contractor and Surety covenant that all action required by law to be taken by them to authorize the execution and delivery of this bond have been previously been taken, that the officers whose signatures appear below have been fully empowered to execute and deliver this instrument and that once executed and delivered, it shall represent the lawful and binding obligation of the parties.

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

CONTRACTOR: _____
[name]

By: _____
[signature] [printed name]

ATTEST: _____, Secretary
[signature]

SURETY: _____
[name]

By: _____, Attorney-in-Fact
[signature]

[printed name] [address]

PERFORMANCE BOND
City of Greenfield

Instructions:

Successful Bidder must use this form or other form containing the same material conditions and provisions as approved in advance by Owner.

Date of Bond must not be prior to date of Contract. If Contractor is a Partnership, all partners should execute bond.

Surety company executing this bond shall appear on the most current list of "Surety Companies Acceptable on Federal Bonds" as specified in the U.S. Treasury Department Circular 570, as amended, and be authorized to transact business in the State of Indiana.

KNOW ALL MEN BY THESE PRESENTS: that

"Contractor": _____

and

"Surety": [name] _____
[Address] _____

a corporation chartered and existing under the laws of the State of _____, and authorized to do business in the State of Indiana,

are held and firmly bound unto the City of Greenfield, Indiana hereinafter called Owner/Obligee, in the penal sum of _____ Dollars, (\$ _____) in lawful money of the United States, for the payment of which sum well and truly to be made, together with interest at the maximum legal rate from date of demand and any attorney fees and court costs incurred by Owner/Obligee to enforce this instrument, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Contractor has entered into a certain Agreement with the Owner/Obligee, dated as of the _____ day of _____, 20 ____, by which Contractor has agreed to perform and furnish certain Work for or in furtherance of construction of public improvements described generally as

W24-0749: RILEY PARK BRIDGE REPLACEMENT PROJECT

which Agreement, and the "Contract Documents" as referred to therein, are hereby incorporated herein by reference;

NOW, THEREFORE, the conditions of this obligation are such that if the Contractor shall well, truly and faithfully perform his duties, all the undertakings, covenants, terms and conditions of said Agreement whether during the original term thereof, and any extensions thereof which may be granted by the Owner/Obligee, with or without notice to the Surety and during any period of guaranty or warranty provided therein or arising thereunder, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the Owner/Obligee from all costs and damages which he may suffer by reason of failure to do so, and shall reimburse and repay the

AGREEMENT
City of Greenfield

THIS AGREEMENT is made and entered into as of the _____ day of _____, 20_____.

by and between

“OWNER”: City of Greenfield, Indiana, by and through its Board of Public Works
10 S. State Street, Greenfield, Indiana 46140

and

“CONTRACTOR”:

concerning the following:

“PROJECT”: **W24-0749: RILEY PARK BRIDGE REPLACEMENT PROJECT**

“WORK”: **Removal of two pedestrian bridges and abutments, and construction of two new pre-fabricated bridges, abutments, and related work.**

“ENGINEER”: **Glen E. Morrow**

RECITALS:

- A. The OWNER has heretofore caused to be prepared certain plans, specifications and other “Contract Documents” as hereinafter listed pertaining to the above described Project and Work, and the CONTRACTOR has filed Proposal to furnish said labor, tools, material, equipment, services, and perform said Work upon the terms and for the price(s) therein fully stated and set forth;
- B. The said Contract Documents accurately and fully describe the terms and conditions upon which the CONTRACTOR is willing to furnish the labor, tools, material, equipment, services, and perform the Work called for by the Contract Documents and in the manner and time and for the price(s) set forth herein.

THE OWNER AND CONTRACTOR AGREE AS FOLLOWS:

1. Contract Documents

1.1 This Agreement consists of the following Contract Documents all of which are as fully a part of this Agreement as if set out verbatim herein or attached hereto and the same do in all particulars become the Agreement between the parties hereto in all matters and things set forth herein and described:

- .1 This Agreement;
- .2 All Addenda issued prior to receipt of Bids, whether or not receipt thereof has been acknowledged by CONTRACTOR in its Bid;
- .3 Special Conditions;
- .4 General Conditions;
- .5 CONTRACTOR's Itemized Proposal and Declarations;
- .6 Technical Specifications;
- .7 Plans;
- .8 City Standards and Specifications;
- .9 INDOT Standard Drawings;
- .10 INDOT Supplemental Specifications Section 200 Series through Section 900 Series;
- .11 INDOT Standard Specifications Sections 200 Series through Sections 900 Series;
- .12 Additional Requirements Section of the Bid Documents (change order forms, Indiana Code 5-16-13, etc.);
- .13 Instructions to Bidders;
- .14 Advertisement or Notice to Bidders; and
- .15 Performance, Payment and Warranty Bonds.

1.2 In resolving conflicts, errors, discrepancies and disputes concerning the nature, character, scope or extent of Work to be performed or furnished by the CONTRACTOR, or other rights and obligations of the OWNER and CONTRACTOR, arising from or prescribed by one or more of the Contract Documents, the following rules shall govern:

- .1 A requirement occurring in one Contract Document is as binding as though occurring in all Contract Documents;
- .2 Calculated dimensions shall govern over scaled dimensions;

- .3. The Contract Documents shall be given precedence in the order listed in Paragraph 1.1 above; and
- .4. In documents of equal priority, if any such conflict, error, discrepancy or dispute cannot be resolved or reconciled by application of the rules stated in Subparagraphs 1.2.1 through 1.2.3, then the provision expressing the greater quantity, quality, or scope of work, or imposing the greater obligation upon the CONTRACTOR or affording the greater right or remedy to the OWNER shall govern, without regard to the party who drafted such provision.

2. Contract Price

- 2.1 The CONTRACTOR shall, in strict conformity with the Contract Documents, furnish all labor, tools, materials, equipment, services, assume and fulfill all obligations and perform all Work required to construct, complete, and make ready for use by the OWNER for the lump sum of _____ Dollars (\$ _____).
- 2.2 The above stated Contract Sum will be paid to the CONTRACTOR in the manner and at such times as set forth in the Contract Documents.

3. Contract Time

- 3.1 It is hereby understood and mutually agreed, by and between the CONTRACTOR and OWNER, that the date of commencement and the time for completion of the Work as specified in the Contract Documents are ESSENTIAL CONDITIONS of this Agreement.
- 3.2 The CONTRACTOR agrees that the Work shall be commenced no later than the date indicated in the Notice to Proceed and that the Work shall be prosecuted regularly, diligently and uninterruptedly at such a rate of progress as will insure **Substantial Completion on or before May 1, 2027, and Final Completion on or before June 1, 2027.**
- 3.3 The CONTRACTOR and OWNER acknowledge and agree that the time allotted by this Agreement for the performance and completion of the Work is reasonable and takes into account any and all risks and adverse conditions assumed by CONTRACTOR hereunder.

[REST OF PAGE INTENTIONALLY LEFT BLANK]

4. Liquidated Damages

The CONTRACTOR and OWNER recognize and contemplate that unexcused failure by the CONTRACTOR to complete the Work within the Contract Time will cause the OWNER and the Public to suffer financial losses or inconvenience the full and exact extent and character of which cannot be measured as a basis for recovery by the OWNER of actual damages, and that liquidated damages as prescribed in the Contract Documents represent a fair, reasonable and appropriate estimate thereof. Accordingly, the CONTRACTOR agrees that such liquidated damages may be assessed and recovered by the OWNER, as against CONTRACTOR and its Surety, in the event of delayed completion and without the OWNER being required to present any evidence of the amount or character of actual damages sustained by reason thereof. **Such liquidated damages shall be assessed and recovered at the rate of \$500.00 per day for delay in achieving Substantial Completion and at the rate of \$100.00 per day in achieving Final Completion of the Work.**

5. Effective Date

This Agreement shall be deemed effective as of the date and year first above written notwithstanding the date on which this Agreement has been executed by the respective parties or their representatives as stated below.

[REST OF PAGE INTENTIONALLY LEFT BLANK]

“CONTRACTOR” SIGNATURE:

IN TESTIMONY THEREOF, the CONTRACTOR has hereunder set his hand this _____ day of _____, 20____.

Firm Name _____

Address _____

Telephone No. _____ Fax No. _____

By: _____
Signature

Printed: _____

Title: _____

“OWNER” SIGNATURES:

IN WITNESS WHEREOF, the OWNER does hereby accept the foregoing Agreement, and has herewith set his/her hand this _____ day of _____, 20____.

For and on behalf of the City of Greenfield by its Board of Public Works.

Guy Titus, Mayor

Brent Robertson, Member

Larry J. Breese, Member

Katherine N. Locke, Member

Glenna Shelby, Member

ATTEST:

Lori Elmore, Clerk Treasurer

Date: _____

ADDITIONAL REQUIREMENTS

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City of Greenfield Sample Change Order Forms	AR-2
Additional Indiana Code (IC) Requirements	AR-7
IC 5-16-13	AR-7
IC 4-13-18	AR-9

Following are specimen forms proposed to be used for the issuance of change orders, field orders, and work directive changes. Procedure for the development, submittal and processing of these forms will be discussed during the preconstruction conference.

CITY OF GREENFIELD

OWNER: CITY OF GREENFIELD

FIELD ORDER NUMBER: _____

DATE: _____

PROJECT NAME: _____

PROJECT NO: _____

You are hereby directed to execute promptly this Field Order which interprets the Contract Documents or orders minor changes in the Work without change in Contract Sum or Contract Time.

If you consider that a change in Contract Sum or Contract Time is required, please submit your itemized proposal to the Engineer immediately and before proceeding with this Work. If your proposal is found to be satisfactory and in proper order, this Field Order will in that event be superseded by a Change Order.

Description:

Attachments:

PROJECT MANAGER:

By: _____

Date: _____

CITY OF GREENFIELD

TO:

WORK DIRECTIVE CHANGE NO. _____

DATE: _____

PROJECT NAME: _____

PROJECT NO.: _____

Specification Reference: _____

Drawing Reference: _____

DESCRIPTION OF WORK COVERED BY THIS DIRECTIVE CHANGE:

REASON FOR THIS ORDER:

AUTHORIZATION:

THIS WORK DIRECTIVE CHANGE AUTHORIZES THE WORK TO BE COMPLETED AS OUTLINED. A Contract Change Order in the amount of \$_____ will be issued to you in the near future to cover this Work Directive Change.

PROJECT COMPLETION DATE: ADD/DEDUCT/UNCHANGED _____ DAYS.

By: _____
Project Manager

By: _____
City Engineer

CITY OF GREENFIELD

TO: REQUEST FOR PROPOSAL NO.: _____
DATE: _____
PROJECT NAME: _____
PROJECT NO.: _____

Specification Reference: _____

Drawing Reference: _____ Drawing Date: _____

Identification of Attachments: _____

Please submit within fifteen calendar days of this request date a proposal showing increase, decrease or no change in contract price and/or contract time. Proposal shall be accompanied by four (4) copies of breakdown showing quantities, cost of material, equipment, labor, overhead, profit and basis for the additional time if any.

DESCRIPTION OF PROPOSED CHANGE COVERED BY THIS REQUEST:

REASON FOR CHANGE:

SPECIAL INSTRUCTIONS:

THIS REQUEST DOES NOT AUTHORIZE YOU TO PROCEED WITH THE ABOVE WORK NOR STOP PREVIOUSLY SCHEDULED WORK. Upon approval a Contract Change Order and a Notice to Proceed will be issued.

Please state in your proposal the effect the acceptance of this REQUEST will have on the project completion, if accepted within ___ days of proposal due date.

YOUR PROPOSAL DUE DATE: _____

By: _____ Date _____
Project Manager

CITY OF GREENFIELD

TO: CONTRACT CHANGE REQUEST NO.: _____
DATE: _____
PROJECT NAME: _____

FROM: _____

IT IS REQUESTED THAT A CONTRACT CHANGE BE MADE TO THE ABOVE REFERENCED CONTRACT.

1. SCOPE OF WORK (USE ADDITIONAL PAGES IF REQUIRED. ALSO LIST OTHER CONTRACTS INVOLVED.)

2. REASON FOR CHANGE:

3. APPROXIMATE COST CHANGE TO CONTRACT PRICE: _____

4. WILL THE CONTRACT NEED ADDITIONAL CONTRACT TIME TO COMPLETE THE CHANGE IN WORK SCOPE? ____ -YES ____ -NO ____ -(CALENDAR DAYS)

5. WILL THE CONTRACTOR NEED ADDITIONAL PERSONNEL TO COMPLETE THE CHANGE IN WORK SCOPE? ____ -YES ____ -NO

IF NO, TRADE(S): _____

NO. OF PERSONNEL: _____

DURATION: _____

6. IDENTIFICATION OF ATTACHMENTS:

DATE: _____ DATE: _____

PREPARED BY: _____ REVIEWED BY: _____
Project Manager

Comments and Recommendation:

CITY OF GREENFIELD

TO: CONTRACT CHANGE ORDER NO.: _____
DATE: _____
PROJECT NAME: _____
ORIGINAL CITY P.O. NO.: _____

I. You are directed to make the following changes in this contract:

<u>ITEM</u>	<u>AMOUNT</u>	<u>SCHEDULED ADJUSTMENT</u> <u>(+) OR (-) DAYS</u>
-------------	---------------	---

II. The following referenced documents further describe the changes outlined in Paragraph I, and are to be considered a part of this Change Order:

R.F.P.: _____ W.D.C.: _____

The changes result in the following adjustment of Contract Price and Contract Time:

Contract Sum prior to this Change Order \$ _____

Contract Sum will be increased/decreased by this Change Order \$ _____

New Contract Sum including this Change Order \$ _____

Contract Time Prior to this Change Order _____ Substantial Completion Date

_____ Final Completion Date

Net increased/decreased resulting from this Change Order _____ Days

Current Contract Time including this Change Order _____ Substantial Completion Date

_____ Final Completion Date

This Change Order is for full and final settlement of all direct, indirect, impact costs and time extension incurred at any time resulting from the performance of the changed work.

The Above Changes Are Recommended:

The Above Changes Are Accepted:

Approved:

Engineer

Contractor

Owner

Address

Address

Address

City/State/Zip

City/State/Zip

City/State/Zip

By _____

By _____

By _____

Phone _____

Phone _____

Phone _____

Date _____

Date _____

Date _____

INDIANA CODE (IC) ADDITIONAL REQUIREMENTS

I. IC 5-16-13

1. The definitions in IC 5-16-3 are incorporated by reference into this Section.
2. In accordance with IC 5-16-13-9, the Bidder, as a “Tier 1 contractor” (as defined in IC 5-16-3-4), if awarded a contract for the Work contemplated by this Bid must contribute:
 - (a) Work performed by the tier 1 contractor’s employees;
 - (b) Materials supplied directly by the tier 1 contractor;
 - (c) Services supplied directly by the tier 1 contractor’s employees; or
 - (d) Any combination of subdivisions (a) through (d);at least fifteen percent (15%) of the tier 1 contractor’s total contract price as determined at the time the contract is awarded.

NOTE: In accordance with Subsection 6.8.1 of the City of Greenfield Standard General Conditions for Construction Contracts (August 2018), the successful Bidder is required to perform with its own organization Work amounting to **not less than thirty percent (30%)** of the original or revised contract amount, whichever is less.

3. In accordance with IC 5-16-13-10, if awarded a contract for the Work contemplated by this Bid, the Bidder, as a “Tier 1 contractor”, and each “Tier 2 contractor” and “Tier 3 contractor” (as defined in IC 5-16-3-4 (i.e., subcontractors and sub-subcontractors)) employed to perform Work on the Project must maintain general liability insurance in at least the following amounts:
 - (a) For the each occurrence limit, one million dollars (\$1,000,000).
 - (b) For the general aggregate limit, two million dollars (\$2,000,000).

NOTE: The successful Bidder, its subcontractors and sub-subcontractors, are required to maintain all insurance coverage as provided for in Article 5 of the City of Greenfield Standard General Conditions for Construction Contracts (August 2018).

4. In accordance with IC 5-16-13-11, if awarded a contract for the Work contemplated by this Bid, the Bidder as a “Tier 1 contractor” and each “Tier 2 contractor” and “Tier 3 contractor” employed to perform Work on the Project:
 - (a) Shall submit, before Work begins, the E-Verify case verification number for each individual who is required to be verified under IC 22-5-1.7. An individual who is required to be verified under IC 22-5-1.7 whose final case result is final non-confirmation may not be employed on the Project.
 - (b) May not pay cash to any individual employed by the contractor for Work done by the individual on the Project.
 - (c) Must be in compliance with the federal Fair Labor Standards Act of 1938, as amended (29 U.S.C. 201-209) and IC 22-2-2-1 through IC 22-2-2-8.
 - (d) Must be in compliance with IC 22-3-5-1 and IC 22-3-7-34.
 - (e) Must be in compliance with IC 22-4-1 through IC 22-4-39.5.
 - (f) Must be in compliance with IC 4-13-18-1 through IC 4-13-18-7.
 - (g) Must comply with IC 5-16-13-12, if applicable.

5. In accordance with IC 5-16-13-12, if awarded a contract for the Work contemplated by this Bid, the Bidder as a “Tier 1 contractor” and each “Tier 2 contractor” employed to perform Work on the Project, if they employ fifty (50) or more journeymen:

- (a) Must provide access to a training program applicable to the tasks to be performed in the normal course of the employee's employment with the contractor.
 - (b) Shall participate in an apprenticeship training program that meets the standards established by the United States Department of Labor, Bureau of Apprenticeship and Training.
 - (c) May comply with this section through any of the following:
 - (1) An apprenticeship program.
 - (2) A program offered by Ivy Tech Community College of Indiana.
 - (3) A program offered by Vincennes University.
 - (4) A program established by or for the contractor.
 - (5) A program offered by an entity sponsored by the United States Department of Labor, Bureau of Apprenticeship and Training.
 - (6) A program that results in the award of an industry recognized portable certification.
6. In accordance with IC 5-16-13-13, if awarded a contract for the Work contemplated by this Bid, the payroll and related records of the Bidder as a "Tier 1 contractor" and each "Tier 2 contractor" and "Tier 3 contractor" employed to perform Work on the Project, must be:
- (a) Preserved by the contractor for a period of three (3) years after completion of the Project Work; and
 - (b) Open to inspection by the Indiana Department of Workforce Development (DWD).

In accordance with IC 5-16-13-14, if the City of Greenfield suspects a misclassification of one (1) or more workers by a contractor in any contractor tier working on the Project may request in writing that DWD investigate the suspected worker misclassification, and in so doing shall provide to DWD any information or records that the City has concerning the misclassification. DWD may investigate such a request, and if it finds information or records that support a finding that worker misclassification has occurred, DWD may refer the matter to the appropriate agency or official for further action.

7. In accordance with IC 5-16-13-15, if the City of Greenfield reasonably suspects the Bidder awarded a contract for the Work contemplated by this Bid or any "Tier 2 contractor" and "Tier 3 contractor" employed to perform Work on the Project has violated a provision of IC 5-16-13, the City is required to do one (1) of the following:
- (a) If the suspected violation concerns or is related to any of the following provisions, the City shall refer the matter to the appropriate agency as follows:
 - (1) For a suspected violation of IC 5-16-13-11(1) (E-Verify), the Indiana Department of Labor.
 - (2) For a suspected violation of IC 5-16-13-11(3) (the federal FLSA or state minimum wage law), the Indiana Department of Labor.
 - (3) For a suspected violation of IC 5-16-13-11(4) (worker's compensation or occupational diseases), the Worker's Compensation Board of Indiana.
 - (4) For a suspected violation of IC 5-16-13-11(5) (unemployment insurance), the Department of Workforce Development.
 - (b) If the suspected violation concerns a provision of IC 5-16-13 other than a provision listed in subdivision (a), the City shall require the contractor to remedy the violation not later than thirty (30) days after the City notifies the contractor of the violation in accordance with IC 5-16-13-15(b)(2). During the thirty (30) day period, the contractor may continue to work on the Project; however, if the contractor fails to remedy the violation within the thirty (30) day period, the City shall find the contractor not responsible and shall determine the length of time the contractor is considered not responsible by the City based on the severity of the violation. The period during which a contractor is considered not responsible:
 - (1) May not exceed forty-eight (48) months; and

(2) Begins on the date of substantial completion of the Project.

A finding by the City that a contractor is not responsible under this section may not be used by another public agency in making a determination as to whether the contractor is responsible for purposes of that public agency's award of a public works contract to that contractor.

II. IC 4-13-18 (A response to "Part 11—Drug Testing" of the "Bidder's Itemized Proposal and Declarations" fulfills this requirement)

1. IC 4-13-18 applies if the Bid is one hundred fifty thousand dollars (\$150,000) or more.
2. The definitions in IC 4-13-18 are incorporated by reference into this Section.
3. In accordance with IC 4-13-18-5, the Bidder must submit with the Bid a written plan for a program to test the Bidder's employees for drugs. A contractor that is subject to a collective bargaining agreement that establishes an employee drug testing program shall only submit a copy of the relevant part of the collective bargaining agreement establishing the program. Failure to submit a written plan for an employee drug testing program, or relevant parts of a collective bargaining agreement establishing an employee drug testing program shall result in the Bid being rejected as non-responsive.
4. The Bidder's employee drug testing program must satisfy all of the following requirements:
 - (a) In accordance with IC 4-13-18-4, if the Bidder's employee drug testing program is established by a collective bargaining agreement it shall include the following:
 - (1) Provides for the random testing of the contractor's employees.
 - (2) Contains a five (5) drug panel that tests for the following substances:
 - (A) amphetamines;
 - (B) cocaine;
 - (C) opiates (2000 ng/ml);
 - (D) PCP;
 - (E) THC
 - (3) Imposes disciplinary measures on an employee who fails a drug test which includes at a minimum all of the following:
 - (A) the employee is subject to suspension or immediate termination;
 - (B) the employee is not eligible for reinstatement until the employee tests negative on a five (5) panel test certified by a medical review officer;
 - (C) the employee is subject to unscheduled sporadic testing for at least one (1) year after reinstatement; and
 - (D) the employee successfully completes a rehabilitation program recommended by a substance abuse professional if the employee fails more than one (1) drug test.
 - (b) In accordance with IC 4-13-18-5, if the Bidder has its own employee drug testing program (which is not included as part of a collective bargaining unit), the Bidder's program shall include the following:
 - (1) Subject each of the contractor's employees to a drug test at least one (1) time each year.
 - (2) Provide for random employee testing, with at least two percent (2%) of the contractor's employees randomly selected each month for testing.
 - (3) Contain at least a five (5) drug panel that tests for:
 - (A) amphetamines;
 - (B) cocaine;
 - (C) opiates (2000 ng/ml);
 - (D) PCP;
 - (E) THC.

- (4) Impose progressive discipline on an employee who fails a drug test with at least the following progression:
- (A) after the first positive test, an employee must be:
 - (i) suspended from work for 30 days;
 - (ii) directed to a program of treatment or rehabilitation; and
 - (iii) subject to unannounced drug testing for one (1) year from the day the employee returns to work.
 - (B) after a second positive test, an employee must be:
 - (i) suspended from work for 90 days;
 - (ii) directed to a program of treatment or rehabilitation; and
 - (iii) subject to unannounced drug testing for one (1) year from the day the employee returns to work.
 - (C) after a third or subsequent positive test, an employee must be:
 - (i) suspended from work for one (1) year;
 - (ii) directed to a program of treatment or rehabilitation; and
 - (iii) subject to unannounced drug testing for one (1) year from the day the employee returns to work.

The program may require dismissal of the employee after any positive drug test or other discipline more severe than described above. An employer complies with the requirement to direct an employee to a program of treatment or rehabilitation if the employer either advised the employee of any such program covered by employer-provided insurance, or, if the employer's insurance does not provide insurance coverage, the employer advises the employee of agencies that provide such programs.

5. In accordance with IC 4-13-18-7, if awarded a contract for the Project, the Bidder must implement the employee drug testing program as described in the plan or collective bargaining agreement. The City of Greenfield shall cancel the contract with the successful Bidder if it:
- (a) Fails to implement its employee drug testing program during the term of the contract;
 - (b) Fails to provide information regarding implementation of the employee drug testing program at the request of the City; or
 - (c) Provides the City with false information regarding the contractor's employee drug testing program.

III. IC 8-23-10 or IC 4-13.6-4

1. The requirements of this Section III are effective for Bids awarded by the City of Greenfield **after December 31, 2016**.
2. The definitions in IC 5-16-3 are incorporated by reference into this Section.
3. In accordance with IC 8-23-10-0.5, if the total amount of the contract awarded under this Bid is **three hundred thousand dollars (\$300,000) or more** and the Project is for the construction, improvement, alteration, repair, or maintenance of a road (as defined by IC 8-23-1-23), highway, street, or alley, then the Bidder, as a "Tier 1 contractor" (as defined in IC 5-16-3-4), and each "Tier 2 contractor" and "Tier 3 contractor" (as defined in IC 5-16-3-4 (i.e., subcontractors and sub-subcontractors)) employed to perform Work on the Project must be qualified by the Indiana Department of Transportation under IC 8-23-10 before performing any Work on the Project.
4. In accordance with IC 4-13.6-4-2.5, if the total amount of the contract awarded under this Bid is **three hundred thousand dollars (\$300,000) or more** and the Project is for any work other than for the construction, improvement, alteration, repair, or maintenance of a road (as defined by IC

8-23-1-23), highway, street, or alley, then the Bidder, as a “Tier 1 contractor” (as defined in IC 5-16-3-4), and each “Tier 2 contractor” and “Tier 3 contractor” (as defined in IC 5-16-3-4 (i.e., subcontractors and sub-subcontractors)) employed to perform Work on the Project must be qualified under IC 4-13.6-4 by the Indiana Certification Board established by IC 4-13.6-3-3 before performing any Work on the Project.

From: Cohen, L David <LCohen@idem.IN.gov>
Sent: Tuesday, September 23, 2025 4:46 PM
To: Clay Jarosinski
Cc: Eshelman, Justin D CIV USARMY CELRL (USA);
ekuker@greenfieldin.org; gmorrow@greenfieldin.org; Michael
Krosschell; Darrell Edwards
Subject: IDEM No. 2025-769-30-LDC-NWP RE: Section 401 WQC Regional
General Permit Notification - Greenfield, Hancock County, IN
Attachments: [Section 401 WQC 2020 Reissuance of 41 Nationwide Permits.pdf](#)
Categories: Green Category

Hi Clay,

Thank you for sending the ETR correspondence, I appreciate it. If you do have listed species in future submittals, you can just email the DNR Division of Fish, Wildlife, & Nature Preserves Environmental Coordinator at environmentalreview@dnr.in.gov and ask if the proposed project will have an adverse impact on the listed species. We technically need that additional correspondence from DNR to satisfy the condition, but I will accept the additional research in lieu of that this time.

This proposed project has been verified as meeting the terms and conditions of a Section 401 general Water Quality Certification under Nationwide Permit 14, which I've assigned IDEM No. 2025-769-30-LDC-NWP. All general and applicable specific conditions contained in the WQC must be incorporated into the final design of this project.

It is recommended that synthetic, polymer-based geotextile fabrics only be used as necessary for proper sediment stabilization beneath riprap or other aggregate materials along the bank of and beneath the ordinary high water mark (OHWM) of streams. The use of geotextile fabric should be limited in areas that may prevent the proper settlement of riprap or otherwise result in erosion beneath the material including avoiding use on steep slopes. All geotextile fabric used for temporary activities such as sediment control measures must be removed upon project completion.

If stabilization of riprap and/or structures is needed, please consider live willow staking or another bioengineered alternative wherever practical to maintain habitat and improve water quality along the riparian corridor.

This email serves as the Section 401 verification letter for the above project. Please let me know if you have any questions or if the scope of your project changes.

Thank you,



L. David Cohen, Senior Wetlands Specialist

Office of Water Quality
100 North Senate Avenue, Room 1255
Indianapolis, Indiana 46204
(317) 450-5380 • LCohen@idem.IN.gov

Indiana Department of Environmental Management

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From: Clay Jarosinski <jarosinskic@weihe.net>
Sent: Thursday, September 18, 2025 8:47 AM
To: Cohen, L David <LCohen@idem.IN.gov>
Cc: Eshelman, Justin D CIV USARMY CELRL (USA) <justin.d.eshelman@usace.army.mil>;
ekuker@greenfieldin.org; gmorrow@greenfieldin.org; Michael Krosschell <krosschellm@weihe.net>;
Darrell Edwards <edwardsd@weihe.net>
Subject: RE: Section 401 WQC Regional General Permit Notification - Greenfield, Hancock County, IN

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Hello David,

We have received the ETR review letter from DNR Division of Nature Preserve. Please see the attached response.

Thank you,
Clay Jarosinski



Clay Jarosinski, E.I.
Project Designer, Residential Development
Weihe Engineers
10505 N. College Avenue
Indianapolis, Indiana 46280
317-846-6611
800-452-6408
jarosinskic@weihe.net *email*

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From: Clay Jarosinski

Sent: Wednesday, September 17, 2025 9:25 AM

To: Cohen, L David <LCohen@idem.IN.gov>

Cc: Eshelman, Justin D CIV USARMY CELRL (USA) <justin.d.eshelman@usace.army.mil>;
ekuker@greenfieldin.org; gmorrow@greenfieldin.org; Michael Krossschell <krossschellm@weihe.net>;
Darrell Edwards <edwardsd@weihe.net>

Subject: RE: Section 401 WQC Regional General Permit Notification - Greenfield, Hancock County, IN

Hello,

My responses are as follows:

- Were any data points taken to confirm a presence or absence of wetlands? Specifically in areas of unmaintained vegetation abutting the creek near the termini of the existing bridge where there appears to be reed canary grass.
 - Data points, such as soil bores were not taken at the site. I agree that there appears to be some reed canary grass. Due to human activity and mowing in the areas around the bridges, we do not think any animal habitats will be affected. There will be disturbances associated with the abutment construction; it will be kept under 0.1 acres within the bank's vegetated areas. After construction, vegetation will likely return.
- Was bankfull width used for the OHWM measurement? Bankfull width is typically wider than the OHWM measurement, which may be the average water level in plan specs. I ask because under Nationwide Permit 14, the cross-sectional area of the creek below OHWM cannot be reduced and riprap needs to be flush with existing contours. The cross sectional on page 14 of the submittal has fill material being placed between those two measurements and will determine if the project meets general condition 9 of the attachment.
 - Bankfull width was not used for the OHWM measurement. There is no intention of reducing the cross-sectional area of the creek below the OHWM. Please see the attached, revised exhibits.
- Do you have an endangered, threatened, and rare (ETR) species review letter from DNR Division of Nature Preserves? It is required under general condition 17 of the attachment, which cannot be fulfilled by Section 7 correspondence with USFWS such as the species list for IPaC since it does not reflect state listings.
 - We have failed to submit the data request; this is an error on my part. I submitted the data request to DNR on Friday. We will notify you when we get a response.

Please reach out if you have additional questions.

Thank you,

Clay



Clay Jarosinski, E.I.
Project Designer, Residential Development
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10505 N. College Avenue
Indianapolis, Indiana 46280
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From: Cohen, L David <LCohen@idem.IN.gov>
Sent: Friday, September 12, 2025 12:12 PM
To: Clay Jarosinski <jarosinskic@weihe.net>
Cc: Eshelman, Justin D CIV USARMY CELRL (USA) <justin.d.eshelman@usace.army.mil>;
ekuker@greenfieldin.org; gmorrow@greenfieldin.org; Michael Krossschell <krossschellm@weihe.net>;
Darrell Edwards <edwardsd@weihe.net>
Subject: RE: Section 401 WQC Regional General Permit Notification - Greenfield, Hancock County, IN

Hi Clay,

I've assigned this submittal IDEM No. 2025-769-30-LDC-NWP. Below are a few questions before I can finish my review:

- Were any data points taken to confirm a presence or absence of wetlands?
Specifically in areas of unmaintained vegetation abutting the creek near the termini of the existing bridge where there appears to be reed canary grass.
- Was bankfull width used for the OHWM measurement? Bankfull width is typically wider than the OHWM measurement, which may be the average water level in plan specs. I ask because under Nationwide Permit 14, the cross-sectional area of the creek below OHWM cannot be reduced and riprap needs to be flush with existing contours. The cross sectional on page 14 of the submittal has fill material being placed between those two measurements and will determine if the project meets general condition 9 of the attachment.

- Do you have an endangered, threatened, and rare (ETR) species review letter from DNR Division of Nature Preserves? It is required under general condition 17 of the attachment, which cannot be fulfilled by Section 7 correspondence with USFWS such as the species list for IPaC since it does not reflect state listings.

Thank you,



L. David Cohen, Senior Wetlands Specialist

Office of Water Quality
100 North Senate Avenue, Room 1255
Indianapolis, Indiana 46204
(317) 450-5380 • LCohen@idem.IN.gov

Indiana Department of Environmental Management

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From: Yoder, Mackenzie P <MPYoder@idem.IN.gov>
Sent: Thursday, August 21, 2025 12:15 PM
To: jarosinskic@weihe.net
Cc: Cohen, L David <LCohen@idem.IN.gov>; CELRL.Door.To.The.Corps <celrl.door.to.the.corps@usace.army.mil>
Subject: RE: Section 401 WQC Regional General Permit Notification - Greenfield, Hancock County, IN

Hi Clay,

Digital submission of 401 applications is acceptable, no hard copy necessary. I am forwarding this on to David Cohen (copied) as he oversees 401 projects in Hancock County.

In the future, please feel free to refer to our contact page on the IDEM website for up-to-date contact information for submitting projects to appropriate project managers.

<https://www.in.gov/idem/wetlands/contact/>

Thank you!

Mackenzie

MPYoder@idem.in.gov | IDEM Office of Water Quality | 317-473-0241

From: Clay Jarosinski <jarosinskic@weihe.net>
Sent: Thursday, August 21, 2025 12:06 PM
To: Yoder, Mackenzie P <MPYoder@idem.IN.gov>
Cc: CELRL.Door.To.The.Corps@usace.army.mil; ekuker@greenfieldin.org; gmorrow@greenfieldin.org; Johnson, Jamie <JamieJohnson@dnr.IN.gov>; Michael Krosschell <krosschellm@weihe.net>; Darrell Edwards <edwardsd@weihe.net>
Subject: Section 401 WQC Regional General Permit Notification - Greenfield, Hancock County, IN

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Mackenzie Yoder,

I am reaching out regarding a Section 401 WQC Regional General Permit Notification for a site in Greenfield, Hancock County, Indiana.

You will find the Section 401 Notification Package attached to this email.

Please confirm that this digital submission is acceptable. If a hard copy is required, please let me know who it should be addressed to.

If you have any questions or need additional information, please let me know. Thank you.

Clay Jarosinski



Clay Jarosinski, E.I.
Project Designer, Residential Development
Weihe Engineers
10505 N. College Avenue
Indianapolis, Indiana 46280
317-846-6611
800-452-6408
jarosinskic@weihe.net *email*

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From: Eshelman, Justin D CIV USARMY CELRL (USA)
<Justin.D.Eshelman@usace.army.mil>
Sent: Monday, August 25, 2025 11:55 AM
To: Clay Jarosinski
Cc: Darrell Edwards; ekuker@greenfieldin.org; Cohen, L David
Subject: RE: Section 404 WQC Regional General Permit Notification - Greenfield,
Hancock County, IN
Attachments: [W240749 Riley Park 404 Package 2025.08.21.pdf](#); [2021 NWP 14 Linear Transportation Projects.pdf](#)
Categories: Green Category

Mr. Jarosinski,

This is in response to your electronic correspondence dated August 21, 2025, concerning a proposal to replace two pedestrian bridges within Riley Park, located in Hancock County, Indiana. Your submittal has been assigned Corps ID No. LRL-2025-00629-jde.

Based on the provided information it appears that your proposed project could qualify under the provisions of Nationwide Permit (NWP) No. 14, without submitting preconstruction notification to the Corps. However, you must comply with the attached terms and conditions of the NWP. If anything changes in the scope of the project which would require preconstruction notification or prohibit your compliance with the terms and conditions of the NWP, then you should resubmit your project information to us for review. Please retain a copy of this response for your records.

Thank you and have a great day,
Justin

Justin Eshelman
Project Manager, North Branch
Regulatory Division
USACE, Louisville District
Indianapolis Regulatory Office
8902 Otis Avenue, Suite 105B
Indianapolis, IN 46216
Phone: 317-543-9424 Ext. 5

Please comment on our service. Our National Customer Service Survey is located at:
<https://regulatory.ops.usace.army.mil/customer-service-survey/>

From: Clay Jarosinski <jarosinskic@weihe.net>
Sent: Thursday, August 21, 2025 11:59 AM
To: CELRL.Door.To.The.Corps <CELRL.Door.To.The.Corps@usace.army.mil>
Cc: Yoder, Mackenzie P <mpyoder@idem.in.gov>; ekuker@greenfieldin.org; gmorrow@greenfieldin.org; jamiejohnson@dnr.in.gov; Michael Krosschell <krosschellm@weihe.net>; Darrell Edwards <edwardsd@weihe.net>

Subject: [Non-DoD Source] Section 404 WQC Regional General Permit Notification - Greenfield, Hancock County, IN

To whom it may concern,

I am reaching out regarding a Section 404 WQC Regional General Permit Notification for a site in Greenfield, Hancock County, Indiana.

You will find the Section 404 Notification Package attached to this email.

Please let me know if you have any questions or need additional information. Thank you.

Clay Jarosinski



Clay Jarosinski, E.I.
Project Designer, Residential Development
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Indianapolis, Indiana 46280
317-846-6611
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jarosinskic@weihe.net *email*

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CERTIFICATE OF APPROVAL

Application #: FW-33354-0

This Certificate of Approval is a Permit for Construction under the authority of the Indiana Flood Control Act, IC 14-28-1 with 312 IAC 10 and IC 14-29-1 with 312 IAC 6 as administered by the Department of Natural Resources.

Approval Issued To: Greenfield Parks and Recreation, Ellen Kuker, 280 North Apple Street, Greenfield, IN 46140

Approval Issued By:

Mail Date: 12/19/2025

Amanda McCollum

Amanda McCollum, Division of Water

Permit Effective Date: 01/06/2026

Permit Expiration Date: 12/19/2027

Pursuant to IC 4-21.5-3-5(f), this Permit becomes Effective eighteen (18) days from the Mail Date to provide a stay period for a Petition for Administrative Review with the Indiana Natural Resources Commission, Division of Hearings. Initiating construction authorized in this Permit prior to the Permit Effective Date constitutes a violation. This Permit is only valid until the Permit Expiration Date.

This Permit may be renewed one (1) time if a written request is received at the DNR, Division of Water, prior to the Permit Expiration Date.

PROJECT INFORMATION:

Waterbody: Brandywine Creek

County: Hancock

Project Description Narrative: The existing north pedestrian bridge carrying pedestrians over Brandywine Creek will be replaced with a new structure on essentially the same alignment. The new structure will be a 70' span wood bridge with span lengths of 70', 6' wide and side rails 4' high. The new structure will have an out-to-out length of 72' and a clear walkway width of 6'. The spill through abutments will have 4:1 side slopes armored with riprap. The abutments with no piers will be perpendicular align with the streamflow. The new approach roads on one side will be elevated a maximum of 2.5' above the existing approach with the other side matching existing. The existing structure will be completely removed. The existing south pedestrian/utility bridge carrying pedestrians and grounds maintenance equipment over Brandywine Creek will be replaced with a new structure on essentially the same alignment. The new structure will be a 50' span wood bridge with span lengths of 50', 10' wide and side rails 4' high. The new structure will have an out-to-out length of 52' and a clear walkway width of 10'. The spill through abutments will have 4:1 side slope armored with riprap. The abutments with no piers will be perpendicular align with the streamflow. The new approach roads on each side will match existing elevations. The existing structure and asphalt will be completely removed. Approximately 0.43 acres will be disturbed by this project. Permanent impacts will total approximately 0.19 acres. Temporary impacts will total approximately 0.12 acres due to staging areas within the floodway, demolition near the north bridge and area under the bridge and are anticipated to be in place for approximately 4 months.

Project Location: Approximately 950' east of the intersection of Baldwin Street and East Lincoln Street for the north bridge and approximately 1,200' southeast of the intersection of Baldwin Street and Grant Street for the south bridge at Greenfield

PERMIT CONDITIONS:

This Certificate of Approval is valid only if the construction project is in compliance with all Conditions in this Permit.

DNR PROJECT SPECIFIC PERMIT CONDITIONS

- 1) Revegetate all bare and disturbed areas that are not currently mowed and maintained with a mixture of grasses, sedges, and wildflowers native to Central Indiana and specifically for stream bank/floodway stabilization purposes as soon as possible upon completion; turf-type grasses (including low-endophyte, friendly endophyte, and endophyte free tall fescue but excluding all other varieties of tall fescue) may be used in currently mowed areas only. A native herbaceous seed mixture must include at least 5 species of grasses and sedges and 5 species of wildflowers.
- 2) Replace each mature tree removed (trees that are 10" diameter-at-breast height/dbh or larger) with 2 native trees of 3-gallon stock or larger.
- 3) Minimize and contain within the project limits inchannel disturbance and the clearing of trees and brush.
- 4) Do not work in the waterway from April 1 through June 30 without the prior written approval of the Division of Fish and Wildlife.
- 5) Do not cut any trees suitable for Indiana Bat or Northern Long-eared Bat roosting (3 inches or greater diameter-at-breast height, living or dead, with loose hanging bark, or with cracks, crevices, or cavities) from April 1 through September 30.
- 6) Use minimum average 6 inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids.
- 7) Do not use broken concrete as riprap.
- 8) Underlay the riprap with a bedding layer of well graded aggregate or a geotextile to prevent piping of soil underneath the riprap.
- 9) Minimize the movement of resuspended bottom sediment from the immediate project area.
- 10) Do not deposit or allow construction/demolition materials or debris to fall or otherwise enter the waterway. Any incidental fallen material or debris in the waterway must be removed within 24 hours using best management practices, particularly lifting material out of the waterway and not dragging it across the streambed whenever possible.
- 11) Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the waterbody or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.
- 12) Seed and protect all disturbed streambanks and slopes not protected by other methods that are 3:1 or steeper with erosion control blankets that are heavy-duty, biodegradable, and net free or that use loose-woven / Leno-woven netting to minimize the entrapment and snaring of small-bodied wildlife such as snakes and turtles (follow manufacturer's recommendations for selection and installation); seed and apply mulch on all other disturbed areas.
- 13) Except for the material used as backfill as shown on the plans submitted for the permit application, place all excavated material landward of the floodway*.
- 14) All work must conform with the existing bank at the upstream and downstream limits of the project site.
- 15) Do not leave felled trees, brush, or other debris in the floodway*.
- 16) All riprap placed for bank stabilization must conform to the bank.
- 17) Upon completion of the project, remove all construction debris from the floodway*.
- 18) Size and/or anchor the riprap to resist displacement by current or wave action.
- 19) Keep the bridge waterway opening free of debris and sediment at all times.
- 20) The project meets the criteria set forth in IC 14-28-1 and 312 IAC 10. However, please note additional federal regulations involving encroachment in the floodway will need to be met per 44 CFR 60.3. This project requires a no rise certification by a professional engineer prior to the start of construction. Proper documentation showing your project meets the federal regulation needs to be submitted to your local floodplain administrator prior to the start of construction.
- 21) Issuance of this Certificate of Approval does not constitute approval of any temporary causeways, coffer dams, runarounds, access bridges or borrow areas associated with the proposed construction other than those proposed in the submitted plans. A separate written approval must be obtained from the DNR, Division of Water for these types of projects prior to beginning any work within the floodway*.
- 22) * Note: For regulatory purposes, the floodway is defined on the attached Floodway Map.
- 23) Completely remove the temporary staging areas and any related appurtenances from the floodway* upon completion of the project.

DNR PROJECT GENERAL PERMIT CONDITIONS

- 1) Any modifications or additional construction beyond what was shown on plans received at the Division of Water shall require an additional review and approval from the Department of Natural Resources.
- 2) This Permit must be posted and maintained at the project site until the project is completed.
- 3) This Permit shall not be assigned or transferred without the prior written approval of the Department of Natural Resources.
- 4) If any prehistoric or historic archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (IC 14-21-1-27 and 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days.
- 5) This Permit may be revoked by the Department of Natural Resources for violation of any condition or applicable statute or rule.
- 6) The Department of Natural Resources shall have the right to enter upon the site of the permitted activity for the purpose of inspecting the work authorized under this Permit.

Certificate of Approval Attachments: FW-33354_Floodplainmap.pdf

RIGHT TO ADMINISTRATIVE REVIEW:

A party may appeal this Department of Natural Resources Action through the administrative review procedures found in the Administrative Orders and Procedures Act, IC 4-21.5. If an appeal is filed, the final agency determination will be made following a legal proceeding conducted before an Administrative Law Judge. The Department of Natural Resources will be represented by legal counsel at all stages of administrative review.

In order to obtain an administrative review, a written petition must be filed within 18 days of the Mail Date of the Action. The petition must contain specific reasons for the appeal and indicate the portion or portions of the project to which the appeal pertains. The petition can be submitted online by selecting the appropriate File a Petition for Review tile at: in.gov/oalp/file-a-petition-for-review/, or by mail at: Office of Administrative Law Proceedings, 100 N. Senate Avenue, Suite N802, Indianapolis, IN 46204.

SERVICE LIST:

Applicant(s):

Greenfield Parks and Recreation, Ellen Kuker, 280 North Apple Street, Greenfield, IN 46140

Agent(s):

Weihe Engineers, Inc., Darrell Edwards, 10515 North College Avenue, Indianapolis, IN 46280

Adjacent Landowners and Interested Parties:

Jean E Cook, 38 South Morristown Pike, Greenfield, IN 46140

Hancock County SWCD, Cindy Newkirk, 1101 West Main Street, Suite N, Greenfield, IN 46140

Hancock County Drainage Board, County Surveyor, 111 South American Legion Place, Suite 171, Greenfield, IN 46140

Brandon Wiseman, 186 South Morristown Pike, Greenfield, IN 46140

US Army Corps of Engineers, Louisville District, PO Box 59, Louisville, KY 40201

Indiana Department of Natural Resources, Division of Law Enforcement District 6 Headquarters PO Box 282, Nineveh, IN 46164

State of Indiana INDOT Real Estate Division, 100 North Senate North 642, Indianapolis, IN 46204

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Pillow Rock Property LLC, 8421 East 450 South, Carthage, IN 46115
Marion and Linda White, 4973 East US Highway 40, Greenfield, IN 46140

ADDITIONAL PERMITTING AGENCIES:

This is not a waiver of any local ordinance or other state or federal law and does not relieve the permittee of any liability for the effects which the project may have upon the safety of the life or property of others.

This does not relieve the permittee of the responsibility of obtaining permits, approvals, easements, etc. under other regulatory programs administered by, but not limited to, the U.S. Army Corps of Engineers, County Drainage Board, Indiana Department of Environmental Management and local, city, or county floodplain management, planning or zoning commissions.



PERMIT AMENDMENT APPROVAL

Application #: FW-33354-1

This Action is issued under the authority of the Indiana Flood Control Act, IC 14-28-1 with 312 IAC 10 as administered by the Department of Natural Resources.

Amendment Issued To: Greenfield Parks and Recreation, Ellen Kuker, 280 North Apple Street, Greenfield, IN 46140

Amendment Issued By:

Amanda McCollum

Mail Date: 01/07/2026

Amanda McCollum , Division of Water

Permit Effective Date: 01/06/2026

Permit Expiration Date: 12/19/2027

PROJECT INFORMATION:

Waterbody: Brandywine Creek

County: Hancock

Project Description Narrative: The existing north pedestrian bridge carrying pedestrians over Brandywine Creek will be replaced with a new structure on essentially the same alignment. The new structure will be a 70' span wood bridge with span lengths of 70', 6' wide and side rails 4' high. The new structure will have an out-to-out length of 72' and a clear walkway width of 6'. The spill through abutments will have 4:1 side slopes armored with riprap. The abutments with no piers will be perpendicular align with the streamflow. The new approach roads on one side will be elevated a maximum of 2.5' above the existing approach with the other side matching existing. The existing structure will be completely removed. The existing south pedestrian/utility bridge carrying pedestrians and grounds maintenance equipment over Brandywine Creek will be replaced with a new structure on essentially the same alignment. The new structure will be a 50' span wood bridge with span lengths of 50', 10' wide and side rails 4' high. The new structure will have an out-to-out length of 52' and a clear walkway width of 10'. The spill through abutments will have 4:1 side slope armored with riprap. The abutments with no piers will be perpendicular align with the streamflow. The new approach roads on each side will match existing elevations. The existing structure and asphalt will be completely removed. Approximately 0.43 acres will be disturbed by this project. Permanent impacts will total approximately 0.19 acres. Temporary impacts will total approximately 0.12 acres due to staging areas within the floodway, demolition near the north bridge and area under the bridge and are anticipated to be in place for approximately 4 months.

Amendment -1: The bridges will be steel truss bridges with wooden decking.

Project Location: Approximately 950' east of the intersection of Baldwin Street and East Lincoln Street for the north bridge and approximately 1,200' southeast of the intersection of Baldwin Street and Grant Street for the south bridge at Greenfield

The Department's staff has reviewed the request to amend the project information. The change to the Project Description is shown above under Project Information.

The Department's staff has determined that if the project is followed as described in the submitted information it is approved, provided the conditions listed on the original permit and the conditions below are met.

PERMIT CONDITIONS:

DNR PROJECT SPECIFIC PERMIT CONDITIONS

1.) Obtain the prior written approval of the Department for any additional construction, excavation or filling in or on the floodway* beyond the scope of the project.

All Conditions on the original Certificate of Approval, with any modified or additional conditions in subsequent Permit Amendments, must be met in order for the project to be in compliance with the statutes and rules listed in this Permit Amendment.

This Amendment must be displayed at the construction site with the original Certificate of Approval and any subsequent Permit Amendments issued on this project.

Attachments: FW-33354-0_CertificateOfApproval.pdf, FW-33354_Floodplainmap.pdf

Point of Contact: Amanda McCollum, Division of Water

This information in this document was prepared by the staff name listed as the Point of Contact. If you have any questions, contact that staff person at the Division of Water by email at water_inquiry@dnr.in.gov or by telephone at 317-232-4160 and select 1 during the recorded menu narrative to leave a voicemail.

RIGHT TO ADMINISTRATIVE REVIEW:

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Adjacent Landowners and Interested Parties:

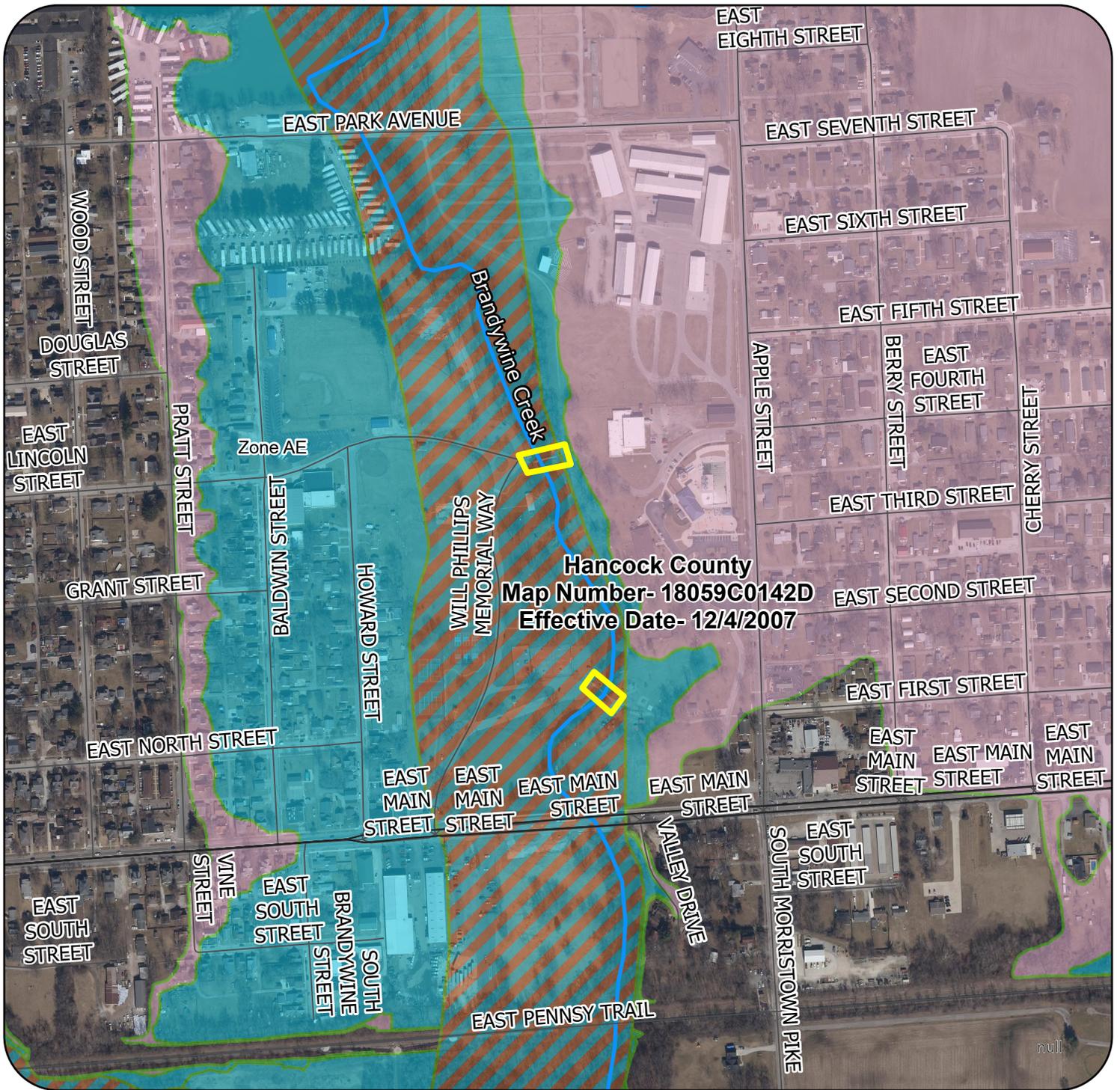
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This does not relieve the permittee of the responsibility of obtaining permits, approvals, easements, etc. under other regulatory programs administered by, but not limited to, the U.S. Army Corps of Engineers, County Drainage Board, Indiana Department of Environmental Management and local, city, or county floodplain management, planning or zoning commissions.



The Special Flood Hazard Area was derived from the digital representation of FEMA Flood Insurance Rate Maps (FIRM). While this map is provided for information, the FIRMs as published by FEMA are the authoritative documents for the National Flood Insurance Program.

Copies of those maps can be found at <http://msc.fema.gov>

Map Source: FIRM

File Number: FW-33354

Note

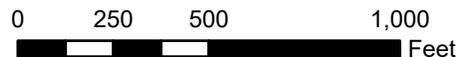
This map does not reflect changes or amendments which may have been made subsequent to the effective date



MAP SCALE: 1" = 500'

Legend

- AE, <Null>
- AE, FLOODWAY
- X, 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- Community Boundaries FIRM Panels
- Community Boundaries FIRM Panels
- Community Boundaries FIRM Panels
- FEMA Zone AE Floodway; FEMA Administrative Floodway
- FEMA Zone AE
- Additional Floodplain Area; DNR .2 Percent Flood Hazard
- Not Mapped



From: Cohen, L David <LCohen@idem.IN.gov>
Sent: Tuesday, September 23, 2025 4:46 PM
To: Clay Jarosinski
Cc: Eshelman, Justin D CIV USARMY CELRL (USA);
ekuker@greenfieldin.org; gmorrow@greenfieldin.org; Michael
Krosschell; Darrell Edwards
Subject: IDEM No. 2025-769-30-LDC-NWP RE: Section 401 WQC Regional
General Permit Notification - Greenfield, Hancock County, IN
Attachments: [Section 401 WQC 2020 Reissuance of 41 Nationwide Permits.pdf](#)
Categories: Green Category

Hi Clay,

Thank you for sending the ETR correspondence, I appreciate it. If you do have listed species in future submittals, you can just email the DNR Division of Fish, Wildlife, & Nature Preserves Environmental Coordinator at environmentalreview@dnr.in.gov and ask if the proposed project will have an adverse impact on the listed species. We technically need that additional correspondence from DNR to satisfy the condition, but I will accept the additional research in lieu of that this time.

This proposed project has been verified as meeting the terms and conditions of a Section 401 general Water Quality Certification under Nationwide Permit 14, which I've assigned IDEM No. 2025-769-30-LDC-NWP. All general and applicable specific conditions contained in the WQC must be incorporated into the final design of this project.

It is recommended that synthetic, polymer-based geotextile fabrics only be used as necessary for proper sediment stabilization beneath riprap or other aggregate materials along the bank of and beneath the ordinary high water mark (OHWM) of streams. The use of geotextile fabric should be limited in areas that may prevent the proper settlement of riprap or otherwise result in erosion beneath the material including avoiding use on steep slopes. All geotextile fabric used for temporary activities such as sediment control measures must be removed upon project completion.

If stabilization of riprap and/or structures is needed, please consider live willow staking or another bioengineered alternative wherever practical to maintain habitat and improve water quality along the riparian corridor.

This email serves as the Section 401 verification letter for the above project. Please let me know if you have any questions or if the scope of your project changes.

Thank you,



L. David Cohen, Senior Wetlands Specialist



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno Pigott
Commissioner

VIA ELECTRONIC MAIL:

December 14, 2020

Mr. Michael Ricketts
U.S. Army Corps of Engineers
Louisville District
P.O. Box 59
Louisville, KY 40201-0059

Dear Mr. Ricketts:

Re: Section 401 Water Quality Certification
Project: 2020 Reissuance of 41
Nationwide Permits

The Office of Water Quality has reviewed the Federal Register Notice dated September 15, 2020, announcing the proposed reissuance of the Nationwide Permits (NWP's). We have also reviewed your correspondence dated October 16, 2020, stating the Federal Register Notice is the U.S. Army Corps of Engineers (Corps) application for water quality certification under Section 401 of the Clean Water Act for those NWP's that will result in a discharge of dredged and/or fill material into waters of the United States within the State of Indiana.

In electronic mail correspondence dated October 21, 2020, the Louisville District Corps of Engineers notified IDEM that the previously suspended NWP's 13, 14, 18, 29, 36, 39, 40, 41, 42, 43, and 44 would no longer be suspended and be in full force and effect in the state of Indiana.

Under Section 401 of the Clean Water Act (CWA), a federal agency may not issue a permit or license to conduct any activity that may result in any discharge into waters of the United States unless a Section 401 Water Quality Certification (WQC) is issued, verifying compliance with water quality requirements. In Indiana, the Indiana Department of Environmental Management (IDEM) is the certifying authority and certification decisions are based on Indiana's water quality standards (WQS) found at 327 IAC 2 http://iac.iga.in.gov/iac/iac_title?iact=327

Per 327 IAC 2.1, the goal of Indiana's water quality standards is to restore and maintain the chemical, physical and biological integrity of the state's waters. Mitigation of dredge and fill impacts to Indiana's water resources is required to maintain water quality. To ensure WQS are met, IDEM conditions the NWP's as outlined in this 401 WQC. Additional information about the conditions is found in Attachment #3.

It is the judgment of this office that NWP's 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 13, 14, 15, 18, 19, 22, 25, 27, 28, 30, 33, 36, 37, 45, 46, and 49 will comply with applicable provisions of state law (including 327 IAC 2) and Sections 301, 302, 303, 306, and 307 of the Clean Water Act subject to the conditions set forth in this Certification. Therefore, subject to the following conditions, the Indiana Department of Environmental Management (IDEM) hereby grants Section 401 Water Quality Certification (WQC) for these NWP's. Any changes in language or scope of any NWP not detailed in the aforementioned Federal Register Notice, or as modified by the conditions below, are not authorized by this certification.

It is the judgement of this office that NWP's 16, 17, 20, 23, 31, 32, 34, 35, 38, 41, 53, 54, and 59 are denied in the state of Indiana and will require a site specific Individual Section 401 Water Quality Certification. The denial is based on the agency's inability to determine if these activities will comply with Indiana's water quality standards found at 327 IAC 2.

It is the judgement of this office that NWP's 8 and 24 are activities that do not occur in Indiana. Because of this no Section 401 Water Quality Certification is required.

Section 401 Water Quality Certification decisions for NWP's in effect for the State of Indiana-2020

NWP	Activity	Decision	Conditions
1	Aids to Navigation	Approve	None
2	Structures in Artificial Channels	Approve	None
3	Maintenance	Approve	General & Specific
4	Fish and Wildlife Harvesting, Enhancement, and Attraction Devices	Approve	General
5	Scientific Measurement Devices	Approve	General
6	Survey Activities	Approve	General
7	Outfall Structures and Associated Intake Structures	Approve	General & Specific
9	Structures in Fleeting and Anchorage Areas	Approve	None
10	Mooring Buoys	Approve	None
11	Temporary Recreational Structures	Approve	None
13	Bank Stabilization	Approve	General & Specific
14	Linear Transportation Projects	Approve	General & Specific
15	U.S. Coast Guard Approved Bridges	Approve	General & Specific
16	Return Water from Upland Contained Disposal Areas	Deny	N/A
17	Hydropower Projects	Deny	N/A
18	Minor Discharges	Approve	General & Specific
19	Minor Dredging	Approve	General
20	Response Operations for Oil and Hazardous Substances	Deny	N/A

22	Removal of Vessels	Approve	General
23	Approved Categorical Exclusions	Deny	N/A
25	Structural Discharges	Approve	General & Specific
26	Reserved	N/A	N/A
27	Aquatic Habitat Restoration, Establishment, and Enhancement Activities	Approve	General & Specific
28	Modifications to Existing Marina	Approve	None
30	Moist Soil Management for Wildlife	Approve	General
31	Maintenance of Existing Flood Control Facilities	Deny	N/A
32	Completed Enforcement Actions	Deny	N/A
33	Temporary Construction, Access, and Dewatering	Approve	General & Specific
34	Cranberry Production Activities	Deny	N/A
35	Maintenance Dredging of Existing Basins	Deny	N/A
36	Boat Ramps	Approve	General & Specific
37	Emergency Watershed Protection and Rehabilitation	Approve	General & Specific
38	Cleanup of Hazardous and Toxic Waste	Deny	N/A
41	Reshaping Existing Drainage Ditches	Deny	N/A
45	Repair of Uplands Damaged by Discrete Events	Approve	None
46	Discharges to Ditches	Approve	General & Specific
47	Reserved	N/A	N/A
49	Coal Remining Activities	Approve	None
53	Removal of Low-Head Dams	Deny	N/A
54	Living Shorelines	Deny	N/A
59	Water Reclamation and Reuse Facilities	Deny	N/A

GENERAL CONDITIONS:

The following conditions shall apply to any permittee whose project qualifies under any NWP approved by this certification. All activities that do not meet these conditions require an individual Water Quality Certification from IDEM and are not authorized under this WQC.

- (1) The permittee must submit a complete Notification Form for any NWP that requires notification by this WQC. For those NWPs, the permittee must submit notification at least 30 days prior to the impacts or receive verification from the IDEM Office of Water Quality stating the proposed project meets the terms and conditions of this Section 401 WQC. The notification submitted to the IDEM Office of Water Quality must at a minimum provide applicant information, project location, existing project site conditions, project impacts, and a proposed plan. Failure to submit all required

information will result in the project being considered out-of-scope and not authorized.

- (2) The permittee shall deposit any dredged material in a contained upland disposal area to prevent sediment run-off to any waterbody. An upland disposal area is defined as an area of dry land that does not contain any wetlands as defined by the 1987 Army Corps of Engineers Wetland Delineation Manual and the applicable Regional Supplements or any streams¹.
- (3) The permittee shall install run-off and sediment control measures prior to any land disturbance to manage stormwater and to minimize sediment from leaving the project site or entering a waterbody. All operations must phase project activities to minimize the impact of sediment to the receiving waterbody(ies). Erosion and sediment control measures shall be implemented using an appropriate order of construction (sequencing) relative to the land-disturbing activities. Wetlands and/or waterbodies that are adjacent to land-disturbing activities must be protected with appropriate sediment control measures. As work progresses, all areas void of protective cover shall be re-vegetated or stabilized as described in the plan. Areas that are to be re-vegetated must utilize mulch that is anchored or, under more severe conditions, erosion control blankets. Erosion control blankets or other armament shall be used for all areas associated with concentrated flow. Standards and specifications for stormwater management, including erosion and sediment control can be obtained in the Indiana Stormwater Quality Manual or similar guidance documents.
- (4) The permittee shall allow the commissioner or an authorized representative of the commissioner (including an authorized contractor), upon the presentation of credentials to conduct the following activities:
 - (a) enter upon the permittee's property;
 - (b) have access to and copy at reasonable times any records that must be kept under the conditions of these permits or this certification;
 - (c) inspect, at reasonable times, any monitoring or operational equipment or method; collection, treatment, pollution management or discharge facility or device; practices required by this certification; and any mitigation site; and
 - (d) sample or monitor any discharge of pollutants or any mitigation site.
- (5) This WQC does not authorize activities that result in a permanent secondary effect to waters of the U.S. (e.g., dredging, excavation, damming, creation of in-channel ponds) that when combined with the primary effect exceeds the area and length thresholds specified by this WQC.

¹ Stream, for the purpose of this Water Quality Certification, means conveyance channels that have a defined bed and bank and an ordinary high water mark. This term includes natural streams, relocated streams, channelized streams, artificial channels, encapsulated channels and ditches.

- (6) This WQC does not:
 - (a) authorize impacts or activities outside the scope of this certification;
 - (b) authorize any injury to permittees or private property or invasion of other private rights, or any infringement of federal, state or local laws or regulations;
 - (c) convey any property rights of any sort, or any exclusive privileges;
 - (d) preempt any duty to obtain federal, state or local permits or authorizations required by law for the execution of the project or related activities; or
 - (e) authorize changes in the plan design detailed in the notice or application.
- (7) This WQC does not authorize point source discharges of pollutants other than clean fill² and uncontaminated dredged material.
- (8) This WQC does not authorize activities associated with the establishment of a mitigation bank.
- (9) This WQC does not authorize activities that will permanently change the sinuosity, flow path, velocity, cross-sectional area under the Ordinary High Water Mark (OHWM), or the slope of a stream except those activities authorized through compliance with NWP #13 Specific Condition 9.
- (10) This WQC does not authorize activities on or in any of the State's waters that have been designated as salmonid waters (*see Attachment #1*), tributaries of salmonid waters within a two river mile reach upstream from the confluence with the salmonid water unless the activity meets one or more of the following conditions:
 - (a) Bank stabilization activities that:
 - (1) Are completed using bioengineered methods, riprap, and/or glacial stone, that conforms to the existing shoreline and does not project out into the channel, and
 - (2) Do not create a wall.
 - (3) Do not include the installation of cofferdams, causeways, temporary access roads, or dewatering activities.
 - (b) Encapsulations that:
 - (1) Are installed to span the width of the ordinary high water mark (OHWM), and are embedded in accordance with Specific Condition 3(f)7 below, and
 - (2) Do not include the installation of cofferdams, causeways, temporary access roads, or dewatering activities.
 - (3) Are installed outside the salmonid fish spawning dates of March 15 through June 15 and from July 15 through November 30.

² Clean fill, for the purpose of this Water Quality Certification, means uncontaminated rocks, bricks, concrete without rebar, road demolition waste materials other than asphalt, or earthen fill.

- (c) Work is conducted outside the salmonid fish spawning dates of March 15 through June 15 and from July 15 through November 30.
- (11) This WQC does not authorize activities on or in any of the State's waters that have been designated as Outstanding State and/or National Resource Waters (see *Attachment #1*).
- (12) This WQC does not authorize activities on or in any critical wetland or critical special aquatic sites (see *Attachment #2*).
- (13) This WQC does not authorize activities that have a cumulative permanent impact of more than twenty-five hundredths (0.25) acre of waters of the U.S. Note: Activities that have a cumulative permanent impact to waters of the U.S. of more than one-tenth (0.10) acre must comply with the mitigation requirements listed in **General Condition 15** of this WQC.
- (14) This WQC does not authorize activities that will have a cumulative permanent impact of more than 500 linear feet of waters of the U.S. Note: Activities that have a cumulative permanent impact to waters of the U.S. of more than 300 linear feet must comply with the mitigation requirements listed in **General Condition 16** of this WQC.
- (15) Cumulative permanent impacts to waters of the U.S. greater than 0.10 acre up to and including 0.25 acre are authorized provided the following conditions are met:
 - (a) The impacts comply with all conditions of this Section 401 Water Quality Certification.
 - (b) Mitigation is provided for all impacts.
 - (c) Sufficient mitigation credits are available in the service area where the impacts occur. Note: Credits may not be available at all times. Failure to purchase credits before impacting water resources will require an individual 401 WQC and may result in additional mitigation requirements to compensate for temporal loss of water resource functions.
 - (d) Mitigation credits are purchased from an approved compensatory mitigation bank or through the Indiana Stream and Wetland Mitigation Program (in-lieu fee (ILF)). Permittee responsible mitigation is not authorized under this 401 WQC.
 - (e) The amount of mitigation credit purchased is 1:1 for streams, open water, and farmed wetlands, 2:1 for emergent wetland, 3:1 for scrub shrub wetland, 4:1 for forested wetland.
 - (f) The credits are purchased in the bank or ILF service area where the impacts occur.
 - (g) Proof of a finalized credit purchase is provided to IDEM:
 - 1) Before the impacts occur. Note: Banks and ILF programs may require 30 days or more to finalize a purchase.

- 2) Within one (1) year of IDEM's receipt of the Notification form.
- (16) Cumulative permanent impacts to waters of the U.S. greater than 300 linear feet up to and including 500 linear feet are authorized provided the following conditions are met:
- (a) The impacts comply with all conditions of this Section 401 Water Quality Certification.
 - (b) Mitigation is provided for all impacts.
 - (c) Sufficient mitigation credits are available in the service area where the impacts occur. Note: Credits may not be available at all times. Failure to purchase credits before impacting water resources will require an individual 401 WQC and may result in additional mitigation requirements to compensate for temporal loss of water resource functions.
 - (d) Mitigation credits are purchased from an approved compensatory mitigation bank or through the Indiana Stream and Wetland Mitigation Program (in-lieu fee (ILF)). Permittee responsible mitigation is not authorized under this 401 WQC.
 - (e) The amount of mitigation credit purchased is 1:1 for streams.
 - (f) The credits are purchased in the bank or ILF service area where the impacts occur.
 - (g) Proof of a finalized credit purchase is provided to IDEM:
 - 1) Before the impacts occur. Note: Banks and ILF programs may require 30 days or more to finalize a purchase.
 - 2) Within one (1) year of IDEM's receipt of the Notification form.
- (17) The permittee must demonstrate, via letter from the Indiana Department of Natural Resources (IDNR), Division of Nature Preserves, that no state endangered, threatened, or rare species are documented on a permanent or seasonal basis within ½-mile radius of the proposed project site. If you have listed species, you must provide documentation from the IDNR that states your project will not impact the listed species. If IDNR recommends seasonal work restrictions or other avoidance and minimization measures, those restrictions or avoidance and minimization measures must be incorporated into your project plans and implemented during construction.
- (18) This WQC allows the use of multiple NWP's on the same project as long as the cumulative effect for the entire project is less than the specified impact thresholds in **General Conditions 13 & 14** or as specified in the **Specific Conditions** below. If a project exceeds the specified impact thresholds, the activities are not authorized by this WQC and an individual WQC is required. IDEM may certify several federal permits or licenses under one individual WQC.
- (19) Upon request, the applicant must submit additional information necessary to IDEM to determine if a project will qualify under the terms and conditions of this

certification. If the applicant fails to provide any information requested by IDEM, then the project is not authorized.

- (20) All stream pump-around activities must be conducted in a manner that does not cause erosion at the outlet. Cofferdam dewatering activities must use filter bags, upland sediment basins/traps, or a combination of other appropriate sediment control measures to minimize the discharge of sediment-laden water into waters of the U.S. All sediment control measures must be installed and maintained in good working order. For stream pump-around activities, the in-stream material used to construct the dam must be constructed of non-sediment producing sources. Examples include sand bags and sheet pile walls.
- (21) The permittee must ensure all placement of riprap or other bank stabilization materials are designed and installed flush with the upstream and downstream bank and stream channel/lake bed elevations and grades.
- (22) Notification to IDEM is required for any temporary impacts that exceed 0.10 acre for any proposed NWP. For emergency repair situations notification may take place after the emergency repair has begun.
- (23) After construction, temporary fill must be removed in their entirety and the affected areas returned to the pre-construction elevations. The areas affected by temporary fill must be revegetated, as appropriate.
- (24) The permittee will submit an application for an individual certification if IDEM determines the project would have more than minimal impacts to water quality, either viewed individually or collectively with other projects that may affect the same waterbody.

NATIONWIDE PERMIT #3, MAINTENANCE, SPECIFIC CONDITIONS

The following conditions apply to NWP #3. All activities that do not meet these conditions require an individual WQC from IDEM and are not authorized under this WQC.

- (1) For activities involving the replacement of a stream encapsulation:
 - (a) The replacement must not reduce the cross-sectional area under bank full elevation;
 - (b) The replacement must not increase the length of the total encapsulation to over 150 feet;
 - (c) The replacement must have either the same slope as the existing encapsulation, or will more closely match the slope of the stream immediately upstream and downstream;

- (d) The replacement must either be the same size and type of encapsulation or one that has a greater ability to provide for aquatic life movement. The replacement must not reduce the cross-sectional area of the encapsulation;
 - (e) Bank stabilization and channel bottom stabilization must not exceed either one bank full width upstream and downstream of the replacement encapsulation or ten linear feet whichever is greater;
 - (f) Any channel bottom stabilization must be flush with the existing grade of the stream bottom; and
 - (g) Existing encapsulations over 150 feet may be replaced under this NWP as long as the structure length does not change more than 20 feet upstream and 20 feet downstream.
- (2) For activities involving the placement of thermal plastic liners or other liner types into existing structures:
- (a) Liners may not be used to extend the structure length by more than 12-inches on either end of the structure;
 - (b) Liners must be installed so that the invert of the liner is as close to the invert of the host pipe as practical;
 - (c) Riprap scour protection or an energy dissipater must be installed flush with the upstream and downstream bank and stream channel elevations and grades;
 - (d) The project must be reviewed and approved by the INDOT Office of Hydraulics for projects undertaken by the Indiana Department of Transportation (INDOT) and a Local Public Agency (LPA);
 - (e) The liner size must be the largest size approved by the INDOT Office of Hydraulics;
 - (f) A hydraulic modeling report must be submitted following the INDOT Standards and Specifications found at http://www.in.gov/indot/design_manual/design_manual_2013.htm for projects undertaken by permittees or entities other than INDOT or a LPA,;
 - (g) If an existing culvert sump cannot be maintained by the installation of a liner then an individual Section 401 Water Quality Certification is required; and
 - (h) For perennial streams, the structure must not be in an elevated position (hanging culvert) within the stream channel. Hanging culverts in perennial stream channels require an Individual Section 401 Water Quality Certification.
- (3) For all other maintenance activities:
- (a) The activity must not permanently affect more than one-tenth (0.1) of an acre of waters of the United States;
 - (b) The activity must not permanently change the sinuosity, flow path, velocity, cross sectional area under the bank full elevation or the slope of a stream;
 - (c) The activity must not permanently affect more than 300 linear feet of stream channel, streambank, or lake shoreline;

- (d) Bank stabilization activities, require the permittee demonstrate that the bank or shoreline in question is unstable;
- (e) The activity must not result in a permanent secondary effect to waters of the United States (e.g., dredging, excavation, damming, creation of in-channel ponds) that, when combined with the primary effect, exceeds the area and length thresholds specified above; and
- (f) Any channel bottom stabilization must be installed flush with the existing stream grade.

NATIONWIDE PERMIT #7, OUTFALL STRUCTURES AND ASSOCIATED INTAKE STRUCTURES, SPECIFIC CONDITIONS

The following conditions apply to NWP # 7. All activities that do not meet these conditions require an Individual WQC from IDEM and are not authorized under this WQC.

- (1) The permittee must notify IDEM in accordance with **General Condition 1** listed above;
- (2) The activity must not permanently affect more than one-tenth (0.1) of an acre of waters of the United States;
- (3) The activity must not permanently affect more than 300 linear feet of streambank or lake shoreline;
- (4) The placement of riprap or other bank stabilization material must be installed flush with the upstream and downstream bank and stream channel/lake bed elevations and grades;
- (5) The activity must not result in a permanent secondary effect to waters of the United States (e.g. dredging, excavation, damming, creation of in-channel ponds) that, when combined with the primary effect, exceeds the area and length thresholds specified above;
- (6) All areas disturbed by the construction of intake and outfall structures must be immediately seeded and stabilized; and
- (7) All outfalls shall be constructed in a manner that does not cause erosion at the outlet.

NATIONWIDE PERMIT #13, BANK STABILIZATION, SPECIFIC CONDITIONS

The following conditions apply to NWP # 13. All activities that do not meet these conditions require an Individual WQC from IDEM and are not authorized under this WQC.

- (1) The permittee must notify IDEM in accordance with **General Condition 1** listed above;
- (2) The WQC does not authorize bank stabilization activities within wetlands;

- (3) The activity must not permanently affect more than twenty-five hundredths (0.25) of an acre of waters of the United States. See **General Condition 13** of this WQC for additional impact and mitigation requirements;
- (4) The activity must not permanently affect more than 500 linear feet of streambank or lake shoreline. See **General Condition 14** of this WQC for additional impact and mitigation requirements;
- (5) The activity must not exceed two (2) cubic yards per running foot, as measured along the length of the treated bank or shoreline;
- (6) The permittee must demonstrate that the bank or shoreline in question is unstable;
- (7) Natural shoreline stabilization methods are required where there is no pre-existing seawall or other shoreline hard armament on a lake or reservoir. Natural shoreline stabilization methods include bank stabilization practices that benefit the aquatic environment by incorporating organic materials to produce functional structures, provide wildlife habitat, and provide areas for revegetation;
- (8) The placement of riprap or other bank stabilization material must be installed flush with the upstream and downstream bank and stream channel/lake bed elevations and grades: and
- (9) The installation of stream barbs (bendway weirs) must:
 - (a) Be a component of a bank stabilization project;
 - (b) Be designed by a qualified engineer;
 - (c) Include bioengineering and vegetative practices to add roughness to the bank;
 - (d) Be placed on the outside meander bend;
 - (e) Be keyed into the stream bank and stream bed;
 - (f) Not direct flow into the opposite bank; and
 - (g) Be placed in a manner that transitions flow into the downstream channel and receiving riffle.

NATIONWIDE PERMIT #14, LINEAR TRANSPORTATION PROJECTS, SPECIFIC CONDITIONS

The following conditions apply to NWP # 14. All activities that do not meet these conditions require an Individual WQC from IDEM and are not authorized under this WQC.

- (1) The permittee must notify IDEM in accordance with **General Condition 1** listed above;
- (2) The activity must not permanently affect more than twenty-five hundredths (0.25) of an acre of waters of the United States. See **General Condition 13** of this WQC for additional impact and mitigation requirements;
- (3) The activity must not permanently affect more than 500 linear feet of streambank or lake shoreline. See **General Condition 14** of this WQC for additional impact and mitigation requirements;

- (4) The placement of riprap or other bank stabilization material must be installed flush with the upstream and downstream bank and stream channel/lake bed elevations and grades;
- (5) The activity must not result in a permanent secondary effect to waters of the United States (e.g. dredging, excavation, damming, creation of in-channel ponds) that, when combined with the primary effect, exceeds the area and length thresholds specified above;
- (6) The activity must not result in the relocation of a stream. Minimal stream relocations may be authorized, provided the activity:
 - (a) Is associated with the installation of a stream crossing or replacement of an existing crossing, and results in a net benefit to the aquatic ecosystem and stream morphology.
 - (b) Does not reduce the cross-sectional area under the OHWM.
 - (c) Is accompanied by an acceptable restoration/stabilization plan.
 - (d) Does not accelerate stream instability as demonstrated in the plans by a qualified engineer. Examples of instability include, but are not limited to, stream bank erosion, channel enlargement, channel incision, degradation, aggradation, meander migration (down-valley and lateral accretion), avulsion and base-level shifts.
- (7) New bridge piers, piles, shafts or other support structures and their associated scour protection measures must not significantly reduce the cross-sectional area of the stream and be located outside the low flow channel of the stream.
- (8) Permanent stream encapsulations must:
 - (a) Be installed for the purpose of constructing a crossing.
 - (b) Allow the passage of aquatic organisms in the waterbody.
 - (c) Not exceed 150 feet cumulative linear feet of encapsulation.
 - (d) Have at least one (1) opening with a cross-sectional area twenty percent (20%) larger than the area under the OHWM of the stream immediately upstream and downstream of the encapsulation. If multiple encapsulations are proposed, then the largest culvert meeting the cross-sectional area requirement must be positioned in the channel to align with the existing flow of the channel.
 - (e) Have a streambed slope within the encapsulation that matches the slope of the bed both immediately upstream and downstream.
 - (f) Not create or accelerate stream instability as demonstrated in the plans by a qualified engineer. Examples of stream instability include, but are not limited to head cutting, stream bank erosion, channel enlargement, channel incision, degradation, aggradations, meander migration, (down-valley and lateral accretion), avulsion, and base-level shifts.

- (g) Either have not bottom (e.g., three sided culvert) or are embedded (sumped)³ into the stream channel based on the following structure sizes and substrate types:
- 1) Stream bed of sand
 - Structure <four (4) feet wide: Six (6) inch sump
 - Structure four (4) feet wide to 12 feet wide: 12 inch sump
 - Structure 12 feet to 20 feet wide: 18 inch sump
 - 2) Stream bed of other soil or unconsolidated till⁴
 - Structure < four (4) feet wide: Three (3) inch sump
 - Structure four (4) feet wide to 12 feet wide: Six (6) inch sump
 - Structure 12 feet wide to 20 feet wide: 12 inch sump
 - 3) Stream bed of bedrock or consolidated till⁵
 - Inside elevation of the structure bottom shall be a minimum of three (3) inches below the surface of the bedrock or consolidated till.
- (h) Meet the following requirements when installed in perennial streams with an OHWM width of 12 feet or greater:
- 1) Be sumped to a greater depth if needed for the design of the streambed inside the encapsulation.
 - 2) Have a width equal to or wider than the existing OHWM.
 - 3) Have a natural stream bottom. If the stream bottom will be disturbed during construction (e.g. four sided box culverts, pipe culverts, or because of footer work for three sided culverts), natural stream substrate must be placed in the encapsulation in accordance with the Federal Highway Administration Hydraulic Engineering Circular No. 26: Culvert Design for Aquatic Organism Passage.
 - 4) Have a low flow channel constructed or restored through the encapsulation. The low flow channel shall have the same width, depth, and side slope as the natural upstream and downstream low flow channel. If the upstream and downstream channels are highly degraded, a V-shaped channel with 5:1 slopes within the structure may be substituted.

NATIONWIDE PERMIT #15, U.S. COAST GUARD APPROVED BRIDGES, SPECIFIC CONDITIONS

The following conditions apply to NWP # 15. All activities that do not meet these conditions require an Individual WQC from IDEM and are not authorized under this WQC.

³ Sump, for the purpose of this Water Quality Certification, means the inside elevation of the bottom of the structure is placed at a specified depth below the grade of the stream.

⁴ Other soil and unconsolidated till includes substrates that are more cohesive and less mobile (e.g clay, silt, gravel, and cobble substrates).

⁵ Consolidated till includes dense hard materials such as hardpan.

- (1) The permittee must notify IDEM in accordance with **General Condition 1** listed above;
- (2) The activity must not permanently affect more than one-tenth (0.1) of an acre of waters of the United States;
- (3) The activity must not permanently affect more than 300 linear feet of streambank or lake shoreline;
- (4) The placement of riprap or other bank stabilization material must be installed flush with the upstream and downstream bank and stream channel/lake bed elevations and grades; and
- (5) The activity must not result in a permanent secondary effect to waters of the United States (e.g. dredging, excavation, damming, creation of in-channel ponds) that, when combined with the primary effect, exceeds the area and length thresholds specified above.

NATIONWIDE PERMIT #18, MINOR DISCHARGES, SPECIFIC CONDITIONS

The following conditions apply to NWP #18. All activities that do not meet these conditions require an Individual WQC from IDEM and are not authorized under this WQC.

- (1) The permittee must notify IDEM in accordance with **General Condition 1** listed above; and
- (2) The activity must not permanently affect more than one-tenth (0.1) of an acre of waters of the United States.

NATIONWIDE PERMIT #25, STRUCTURAL DISCHARGES, SPECIFIC CONDITIONS

The following conditions apply to NWP # 25. All activities that do not meet these conditions require an Individual WQC from IDEM and are not authorized under this WQC.

- (1) The permittee must notify IDEM in accordance with **General Condition 1** listed above;
- (2) The activity must not permanently affect more than one-tenth (0.1) of an acre of waters of the United States;
- (3) New bridge piers, piles, shafts, or other support structures authorized under this NWP shall be located outside the low flow channel of the stream except where the bridge structure is located in a U.S. Army Corps of Engineers Section 10 Water;
- (4) The material excavated from a tightly sealed form or cell must be disposed of in an upland disposal area;
- (5) The dewatering of the tightly sealed form or cell must be discharged into a contained upland disposal area; and
- (6) The activity must not result in a permanent secondary effect to waters of the United States (e.g. dredging, excavation, damming, creation of in-channel ponds) that,

when combined with the primary effect, exceeds the area and length thresholds specified above.

NATIONWIDE PERMIT #27, AQUATIC HABITAT RESTORATION, ESTABLISHMENT, AND ENHANCEMENT ACTIVITIES, SPECIFIC CONDITIONS

This WQC authorizes activities under NWP #27 when they have a minimal effect on water quality, are a component of a restoration program previously approved by IDEM, or involve certain activities undertaken by the Abandoned Mine Land (AML) Program administered by IDNR. All activities that do not meet these conditions require an individual WQC from IDEM and are not authorized under this WQC.

- (1) An activity qualifies for this NWP because it will have a minimal effect if:
 - (a) The activity will permanently affect one-tenth (0.1) of an acre or less of Waters of the United States;
 - (b) The activity will permanently affect 300 linear feet or less of streambank or lake shoreline; and
 - (c) The activity will not result in a permanent secondary effect to waters of the United States (e.g. dredging, excavation, damming, creation of in-channel ponds) that, when combined with the primary effect, exceeds the area and length thresholds specified above.
- (2) An activity qualifies for this NWP because it is a component of a restoration program previously approved by IDEM if:
 - (a) The activity occurs within the same sub-watershed ⁶ as a water that IDEM has identified as impaired; and
 - (b) IDEM identified the activity as beneficial for reducing or eliminating the impairment in a Total Maximum Daily Load (TMDL), an IDEM approved Watershed Plan or a Memorandum of Agreement or Memorandum of Understanding with the agency sponsoring the restoration or enhancement activities.
- (3) An activity qualifies for this NWP because it is a qualifying AML project if:
 - (a) The activity is undertaken by the IDNR, Division of Reclamation, AML Program;
 - (b) The activity is designed to improve water quality in an impaired water of the United States where the source of impairment is acid mine contamination;
 - (c) The activity facilitates the treatment of acid mine drainage or covers a source of impairment ⁷; and
 - (d) The activity does not result in the discharge of dredged or fill material into any wetland, stream, or other Waters of the United States that are unimpaired by

⁶ For the purpose of this WQC, sub-watershed means the U.S. Geological Survey's 14-digit Hydrologic Unit Code (HUC).

⁷ AML projects that qualify generally consist of damming or relocating waters carrying acid mine contamination to divert flow into constructed treatment systems.

acid mine drainage unless that discharge qualifies under specific condition #1 above.

- (4) This WQC does not authorize the discharge of sediment from a reservoir to restore downstream habitat.
- (5) The permittee must notify IDEM in accordance with General Condition (1) listed above for all projects which require the installation or removal of any water control structures, dikes, berms, or accumulated sediment. IDEM will review the notification within 30 days to determine whether or not IDEM will elevate the NWP to an Individual Water Quality Certification or authorize it as submitted.

NATIONWIDE PERMIT #33, TEMPORARY CONSTRUCTION, ACCESS, AND DEWATERING, SPECIFIC CONDITIONS

The following conditions apply to NWP #33. All activities that do not meet these conditions require an individual WQC from IDEM and are not authorized under this WQC.

- (1) The permittee must notify IDEM in accordance with **General Condition 1** listed above;
- (2) The activity must not temporarily affect more than twenty-five hundredths (0.25) of an acre of waters of the United States;
- (3) The activity must not temporarily affect more than 500 linear feet of streambank or lake shoreline;
- (4) The notification must include a restoration plan returning all areas to pre-construction grades, contours, and vegetated conditions. The restoration plan should include plans for the removal of temporary fill, grading/compaction, seeding, planting, success criteria, and any necessary maintenance;
- (5) Temporary stream crossings must meet the following conditions:
 - (a) Must be installed in a manner that maintains near normal downstream flows.
 - (b) Must be installed in a manner that does not interfere with aquatic organism passage.
 - (c) The culverts installed in the crossing must be placed on the bottom of the channel in the low flow channel. If multiple culverts are necessary, they must all be placed on the bottom of the channel.
 - (d) The culverts must be kept clear of sediment and debris and maintained in their designed and approved conditions.
 - (e) The culverts must be placed in a manner that does not direct stream flows toward a streambank.
 - (f) The crossing must be constructed of materials that will not erode due to expected high flow events.
 - (g) The stream must be restored to preconstruction channel bottom elevations and substrate types. The stream banks and riparian corridor must be restored to preconstruction contours, grades, and vegetative conditions.
- (6) Temporary work causeways must meet the following conditions:
 - (a) Must be installed in a manner that maintains near normal downstream flows.

- (b) Must not interfere with aquatic organism passage.
 - (c) Must not span the entire width of the channel unless the notification is accompanied by a letter of approval from the Indiana Department of Natural Resources Division of Water.
 - (d) The culverts used to construct the causeway must be placed on the channel bottom.
 - (e) The culverts must be kept clear of sediment and debris and maintained in their designed and approved conditions.
 - (f) Must be constructed of materials that will not erode due to expected high flow events.
 - (g) The stream must be restored to preconstruction channel bottom elevations and substrate types. The stream banks and riparian corridor must be restored to preconstruction contours, grades, and vegetative conditions.
- (7) All stream pump-around activities must be implemented in a manner that does not cause erosion at the outlet. Cofferdam dewatering activities must use filter bags, upland sediment basins/traps, or a combination of other appropriate sediment control measures to minimize the discharge of sediment-laden water into waters of the U.S. All sediment control measures must be installed and maintained in good working order. For stream pump-around activities, the in-stream material used to construct the dam must be constructed of non-sediment producing sources. Examples include sand bags and sheet pile walls; and
- (8) All dredged material must be disposed of in accordance with **General Condition 2** of this WQC.

NATIONWIDE PERMIT #36, BOAT RAMPS, SPECIFIC CONDITIONS

The following conditions apply to NWP #36. All activities that do not meet these conditions require an individual WQC from IDEM and are not authorized under this WQC.

- (1) The permittee must notify IDEM in accordance with **General Condition 1** listed above;
- (2) The ramp shall not be placed in wetlands;
- (3) The maximum width of the ramp is less than 60 feet;
- (4) The area to be dredged shall be the minimum necessary to construct the ramp; and
- (5) All dredged material will be disposed of in accordance with **General Condition 2** of this WQC.

NATIONWIDE PERMIT #37, EMERGENCY WATERSHED PROTECTION AND REHABILITATION, SPECIFIC CONDITIONS

The following conditions apply to NWP #37. All activities that do not meet these conditions require an individual WQC from IDEM and are not authorized under this WQC.

- (1) The activity is consistent with a Memorandum of Agreement (MOA) or Memorandum of Understanding (MOU) between the IDEM and the Natural Resources Conservation Service, the United States Forest Service, the Department of the Interior, the Farm Services Agency, or the IDNR. An MOA/MOU must be in place prior to the emergency situation and must ensure that the emergency activities authorized under NWP #37 will not cause or contribute to permanent water quality degradation or impairment.

NATIONWIDE PERMIT #46, DISCHARGES TO DITCHES, SPECIFIC CONDITIONS

The following condition applies to NWP #46. All activities that do not meet this condition require an individual WQC from IDEM and are not authorized under this WQC.

- (1) The activity must not permanently change the velocity, cross sectional area under the bank full elevation or the slope of the ditch.

Any changes in the language or scope of any NWP not detailed in the Federal Register notice dated September 15, 2020, are not authorized by this certification. In the absence of another action by IDEM that would alter the termination date of this certification, this certification shall expire with the expiration of the federal permits it certifies.

This certification does not relieve the recipient of the responsibility of obtaining any other permits or authorizations that may be required for this project or related activities from IDEM or any other agency or person. You may wish to contact the Indiana Department of Natural Resources at 317-232-4160 (toll free at 877-928-3755) concerning the possible requirement of natural freshwater lake or floodway permits. In addition, you may wish to contact IDEM's stormwater program at 317-233-1864 (Stormwat@idem.IN.gov) concerning the possible need for construction stormwater permit coverage if you plan to disturb one (1) acre or more of land area.

Failure to comply with the terms and conditions of this Section 401 Water Quality Certification may result in enforcement action against you. You may also be subject to criminal liability if it is determined that the Section 401 Water Quality Certification was violated willfully or negligently.

Notice of Right to Administrative Review

If you wish to challenge this permit, you must file a Petition for Administrative Review with the Office of Environmental Adjudication (OEA), and serve a copy of the petition upon IDEM. The requirements for filing a Petition for Administrative Review are found in IC 4-21.5-3-7, IC 13-15-6-1 and 315 IAC 1-3-2. A summary of the requirements of these laws is provided below.

A Petition for Administrative Review must be filed with the Office of Environmental Adjudication (OEA) within fifteen (15) days of the issuance of this notice (eighteen (18) days if you received this notice by U.S. Mail), and a copy must be served upon IDEM.

Addresses are:

Director	Commissioner
Office of Environmental Adjudication	Indiana Dept. of Environmental Management
Indiana Government Center North	Indiana Government Center North
100 North Senate Avenue, Room N103	100 North Senate Avenue, Room 1301
Indianapolis, Indiana 46204	Indianapolis, Indiana 46204

The petition must contain the following information:

- (a) The name, address and telephone number of each petitioner.
- (b) A description of each petitioner's interest in the permit.
- (c) A statement of facts demonstrating that each petitioner is:
 - (1) a person to whom the order is directed;
 - (2) aggrieved or adversely affected by the permit; or
 - (3) entitled to administrative review under any law.
- (d) The reasons for the request for administrative review.
- (e) The particular legal issues proposed for review.
- (f) The alleged environmental concerns or technical deficiencies of the denial.
- (g) The permit terms and conditions that the petitioner believes would be appropriate and would comply with the law.
- (h) The identity of any persons represented by the petitioner.
- (i) The identity of the person against whom administrative review is sought.
- (j) A copy of the permit that is the basis of the petition.
- (k) A statement identifying petitioner's attorney or other representative, if any.

Failure to meet the requirements of the law with respect to a Petition for Administrative Review may result in a waiver of your right to seek administrative review of the permit. Examples are:

- (a) Failure to file a Petition by the applicable deadline;
- (b) Failure to serve a copy of the Petition upon IDEM when it is filed; or
- (c) Failure to include the information required by law.

If you seek to have a permit stayed during the administrative review, you may need to file a Petition for a Stay of Effectiveness. The specific requirements for such a Petition can be found in 315 IAC 1-3-2 and 315 IAC 1-3-2.1.

Pursuant to IC 4-21.5-3-17, OEA will provide all parties with notice of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders disposing of the review of this action. If you are entitled to notice under IC 4-21.5-3-5(b) and would like to obtain notices of any pre-hearing conferences, preliminary hearings, hearings, stays,

or orders disposing of the review of this action without intervening in the proceeding you must submit a written request to OEA at the address above.

If you have procedural or scheduling questions regarding your Petition for Administrative Review, additional information on the review process is available at the website of the Office of Environmental Adjudication at <http://www.in.gov/oea>.

If you have any questions about this certification, please contact Jason Randolph, Project Manager, of my staff by phone at 317-233-0467, or by e-mail at jrandolp@idem.in.gov.

Sincerely,



Martha Clark Mettler
Assistant Commissioner
Office of Water Quality

cc: Kimberly Simpson, USACE-Louisville
Aaron Damrill, USACE-Detroit, Michiana Branch
Paul Leffler, USACE-Chicago
Scott Pruitt, USFWS
Matt Buffington, IDNR
Randy Braun, IDEM

Attachment 1: Indiana Waters Designated for Special Protection

Designated Salmonid Waters:

[327 IAC 2-1.5-5(a)(3)]

- Trail Creek and its tributaries downstream to Lake Michigan, LaPorte County
- East Branch of the Little Calumet River and its tributaries downstream to Lake Michigan via Burns Ditch, Porter and LaPorte Counties
- Salt Creek above (upstream of) its confluence with the Little Calumet River, Porter County
- Kintzele Ditch (Black Ditch) from Beverly Drive downstream to Lake Michigan, Porter County
- The Galena River and its tributaries, LaPorte County
- The St. Joseph River and its tributaries in St. Joseph County from the Twin Branch Dam in Mishawaka downstream to the Indiana/Michigan state line, St. Joseph County
- The Indiana portion of the open waters of Lake Michigan
- Those waters designated by the Indiana Department of Natural Resources (IDNR) for put-and-take trout fishing¹

Waterbodies which have been designated all or partially as Outstanding State Resource Waters: [327 IAC 2-1-11(b), 327 IAC 2-1.3-3(d), and 327 IAC 2-1.5-19(b)]

- Big Pine Creek in Warren County downstream of the State Road 55 bridge near the town of Pine Village to its confluence with the Wabash River
- Mud Pine Creek in Warren County from the bridge on the County Road between Brisco and Rainsville to its confluence with Big Pine Creek
- Fall Creek in Warren County from the old C.R. 119 bridge in the NW quarter of Section 21, Township 22N, Range 8W downstream to its confluence with Big Pine Creek
- Indian Creek in Montgomery County from the County Road 650 West bridge downstream to its confluence with Sugar Creek
- Clifty Creek in Montgomery County within the boundaries of Pine Hills Nature Preserve
- Bear Creek in Fountain County from the bridge on County Road 450 North to its confluence with the Wabash River
- Rattlesnake Creek in Fountain County from the bridge on County Road 450 North to its confluence with Bear Creek
- The small tributary to Bear Creek in Fountain County within the Portland Arch Nature Preserve which enters Bear Creek at the sharpest bend and has formed the small natural bridge called Portland Arch
- Blue River from the confluence of the West and Middle Forks of the Blue River in Washington County downstream to its confluence with the Ohio River
- The South Fork of Blue River in Washington County from the Horner's Chapel Road bridge downstream to its confluence with Blue River.
- Lost River and all surface and underground tributaries upstream from the Orangeville Rise (T2N, R1W, Section 6) and the Rise of Lost River (T2N, R1W, Section 7) and the mainstem of the Lost River from the Orangeville Rise downstream to its confluence with the East Fork of White River.
- The Blue River in Washington, Crawford, and Harrison Counties, from river mile 57.0 to river mile 11.5
- The North Fork of Wildcat Creek in Carroll and Tippecanoe Counties, from river mile 43.11 to river mile 4.82

¹ Available on the internet at: <http://www.in.gov/dnr/fishwild/5457.htm>

- The South Fork of Wildcat Creek in Tippecanoe County, from river mile 10.21 to river mile 0.00
- Cedar Creek in Allen and DeKalb counties, from river mile 13.7 to its confluence with the St. Joseph River
- The Indiana portion of the open waters of Lake Michigan
- All waters incorporated in the Indiana Dunes National Lakeshore.

Attachment 2: Critical Wetlands and Critical Special Aquatic Sites

In the interest of maintaining consistency with the State Regulated (Isolated) Wetland program established at 327 IAC 17, IDEM defines Critical Wetlands and Critical Special Aquatic Sites to be synonymous with Rare and Ecologically Important Wetland Types under 327 IAC 17-1-3(3)(B):

- **Acid bog:** Acid bog is an acidic wetland of kettle holes in glacial terrain. Bogs can be graminoid (*Carex* spp. and *Sphagnum* spp.) or low shrub (*Chamaedaphne calyculata* and *Betula pumila*). The graminoid bog can be a floating, quaking mat. The soils in acid bogs are saturated and acidic peat. Bogs have non-flowing or very slow flowing water. The water level fluctuates seasonally. When a sphagnum mat floats, it rises and falls with the water table. Acid bogs can be found in northern Indiana.
- **Acid seep:** Acid seep is a bog-like wetland typically found in unglaciated hill regions. This community is a small groundwater-fed wetland located primarily in upland terrain. A thin layer of muck may lie over a mineral substrate. The soil reaction is acid. This seep community is characterized by flowing water during at least part of the year. Acid seeps are located primarily in southern Indiana.
- **Circumneutral bog:** Circumneutral bog is a bog-like wetland that receives groundwater. Circumneutral bogs can be a mosaic of tall shrub bog, graminoid bog, and other communities. The graminoid bog often occurs on a quaking or floating mat. Although a few bogs occur in unglaciated regions, most are found in glacial ice-block depressions. The soils in circumneutral bogs are usually peat, or other low nutrient organic substrates, which are saturated and circumneutral to slightly acid. Circumneutral bogs have non-flowing or very slow flowing water. The water level fluctuates seasonally. Circumneutral bogs are usually found in northern Indiana.
- **Circumneutral seep:** The circumneutral seep (or seep-spring) is a groundwater-fed wetland on organic soil. It is primarily herbaceous. Species typically include marsh marigold (*Caltha palustris*) and skunk cabbage (*Symplocarpus foetidus*) with a scattered tree canopy. Circumneutral seep is typically situated on or near the base of a slope. The soil is typically circumneutral muck. This seep community is characterized by slowly flowing water during at least part of the year. Circumneutral seeps can be found scattered throughout Indiana.
- **Cypress swamp:** Bald cypress swamps are seasonally to permanently inundated wetlands found in depressions and sloughs of large bottomlands associated with the Wabash/Ohio River system. Poorly to very poorly drained soils characterize this environment. Bald cypress (*Taxodium distichum*) is present, and green ash (*Fraxinus pennsylvanica*), silver maple (*Acer saccharinum*), and overcup oak (*Quercus lyrata*) are also usually present. This community is restricted to extreme southwest Indiana.
- **Dune and swale:** Dune and swale is an ecological system consisting of a mixture of upland (black oak sand savanna, dry to mesic sand prairie) and wetland (pond, panne, sedge meadow, marsh, wet prairie) natural communities. These communities occur in long, narrow, linear complexes, with the dry communities occupying sand ridges, and the wet communities occurring in the intervening swales. Black oak (*Quercus velutina*), paper birch (*Betula papyrifera*), jack pine (*Pinus banksiana*), and prairie vegetation typically occur on the ridges, and sedges, reeds, and marsh/aquatic vegetation line are found in the swales. Water levels are directly influenced by ground water, with the interdunal swales controlled

largely by lateral flow through porous beach ridges. Dune and swale is restricted to extreme northwest Indiana, near Lake Michigan.

- **Fen:** Fen is a calcareous, groundwater-fed wetland. Fens are often a mosaic of grassy areas, sedge areas, graminoid-shrubby cinquefoil, and tall shrub areas. The extent of the tall shrub component of fens may be determined by fire frequency and/or soil moisture. Drying of the soil increases the growth of shrubs. Fens typically occur in the vicinity of glacial moraines. Fens typically have a muck or peat substrate. The water level fluctuates seasonally and is fed by groundwater. Fens can be found in central and northern Indiana.
- **Forested fen:** Forested fen is a tree-dominated wetland on organic soil which receives groundwater. Forested fens are often a mosaic of treed areas, tall shrub areas, and herbaceous areas. A tall shrub layer is often well developed in forested fens. Indicative species typically include tamarack (*Larix laricina*), black ash (*Fraxinus nigra*), yellow birch (*Betula alleghaniensis*), poison sumac (*Toxicodendron vernix*), and red maple (*Acer rubrum*). Forested fens occur in wet lowlands, where moraines meet outwash features or depressions. Forested fens have saturated, poorly to very poorly drained soils that are often muck, but some seasonal flooding can occur in forested fens that are especially level. This community is a late successional stage of fen or circumneutral bog. Forested fens occur in northern Indiana.
- **Forested swamp:** Forested swamp is a seasonally inundated to intermittently exposed wetland of large river bottoms. Forested swamps do not receive direct flow from river flooding except under exceptional circumstances. Forested swamps occur in depressions, sloughs and large bottomlands, typically dominated by tree species such as swamp cottonwood (*Populus heterophylla*), green ash (*Fraxinus pennsylvanica*), and swamp white oak (*Quercus bicolor*). In northern Indiana important tree species include black ash (*Fraxinus nigra*), yellow birch (*Betula alleghaniensis*), and red maple (*Acer rubrum*). Poorly to very poorly drained and aerated soils characterize the swamp environment. Soils usually are mineral not muck or peat. This community type is found throughout Indiana.
- **Marl beach:** Marl beach is a fen-like community located on the marly muck shorelines of lakes. Marl precipitate is evident. A thin layer of water is present in spring, but dries down in summer. Draw-down of a lake creates additional area for this community to develop on. Marl beaches can be found in extreme northern Indiana, primarily in the northeast.
- **Muck flat:** Muck flat is a shoreline and lake community possessing a unique flora of sedges and annual plants, many of which are also found on the Atlantic and Gulf Coastal Plains. This community is found at the margins of lakes or covering shallow basins. This community has a peat substrate. The muck flats can float on the water surface, but during high water periods are usually inundated. The water level of a basin fluctuates during a season or from year to year in response to the amount of precipitation. This exposes bare substrate needed for germination by species of the community. Muck flats are found in northern Indiana.
- **Panne:** Panne is a groundwater fed herbaceous wetland occupying interdunal swales near Lake Michigan. Pannes are located on the lee side of the first or second line of dunes from the lakeshore. The soil is wet, calcareous sand. Pannes are located in counties bordering Lake Michigan.
- **Sand flat:** Sand flat is a shoreline and lake community possessing a unique flora of sedges and annual plants, many of which are also found on the Atlantic and Gulf Coastal Plains. This community is found at the margins of lakes or covering shallow basins. This community has a sand substrate. During high water periods sand flats at the margins of

lakes or ponds are inundated. The water level of a basin fluctuates during a season or from year to year in response to the amount of precipitation. This exposes bare substrate needed for germination by species of the community. Sand flats occur in northern Indiana, and in the Plainville Sand Section of southwest Indiana.

- **Sedge meadow:** Sedge meadow is an herbaceous wetland typically dominated by graminoid species such as flat sedge (*Cyperus* spp.), spike rush (*Eleocharis* spp.), rushes (*Juncus* spp.) and sedges (*Carex* spp.). Sedge meadow is an herbaceous wetland of stream margins and river floodplains, and lake margins or upland depressions. Streamside sedge meadows are frequently flooded in the spring and early summer. Sedge meadows of lake margins and depressions often contain standing water during wet months and after heavy rains; during dry periods, the water level is at or just below the substrate. Sedge meadow usually occupies the ground between a marsh and the uplands, or a shrub swamp or wet forest. Periodic high water can kill trees and shrubs invading sedge meadows. Sedge meadows can be found in the northern half of the state.
- **Shrub swamp:** Shrub swamp is a shrub-dominated wetland that is seasonally inundated to intermittently exposed. This community occurs in depressions and the substrate is either mineral soils or muck, as opposed to peat which is characteristic of bogs. Shrub swamp is characterized by non-flowing or very slowly flowing water with levels that fluctuate seasonally. Shrub swamps are persistent, though considered successional. Two opportunistic native shrubs, sandbar willow (*Salix exigua*) and gray dogwood (*Cornus racemosa*), by themselves, are not indicative of shrub swamps. This community type is found throughout Indiana.
- **Sinkhole pond:** Sinkhole ponds are water-containing depressions in karst topography. Sinkhole ponds are found in the Mitchell Karst Plain in south-central Indiana.
- **Sinkhole swamp:** Sinkhole swamps are depressions in karst topography dominated by tree or shrub species. Sinkhole swamps are found in the Mitchell Karst Plain in south-central Indiana.
- **Wet floodplain forest:** Wet floodplain forest is a broadleaf deciduous forest of river floodplains. Wet floodplain forests occur in depressions and flats on narrow to wide floodplains and also on recently exposed substrates that are frequently flooded. Wet floodplain forests are frequently flooded and may have standing water seasonally to permanently present. Wet floodplain forests occur statewide.
- **Wet prairie:** Wet prairie is an herbaceous wetland typically dominated by graminoid species such as prairie cordgrass (*Spartina pectinata*), bluejoint (*Calamagrostis canadensis*), and sedges (*Carex* spp.). Vegetation height is often 2-3 m. The species diversity of wet prairies is lower than that of mesic prairies. Wet prairies occur in deep swales and the substrate ranges from very deep black mineral soils (which are high in organic matter) to muck. Ponding in spring lasts for several weeks prior to drainage. Wet prairies commonly occur in the Grand Prairie Natural Region, the Tipton Till Plain and the Bluffton Till Plain, with a few examples found in the Northern Lakes Natural Region.
- **Wet sand prairie:** Wet sand prairie is an herbaceous wetland typically dominated by graminoid species such as prairie cordgrass (*Spartina pectinata*), bluejoint (*Calamagrostis canadensis*), and sedges (*Carex* spp.). Vegetation height is often 2-3 m. The species diversity of wet prairies is lower than that of mesic prairies. Wet lowland prairies occur in deep swales and the substrate is sand, sometimes mixed with muck. Flooding is a regular springtime occurrence in wet sand prairie and may last several weeks. This community occurs in a mosaic with marsh and other wetlands, and with upland prairies and sand

savannas. Fire was frequent occurrence, but more common in the fall when waters had receded. This community occurs in northwest Indiana and in the Plainsville Sands area.

Attachment 3: 40 CFR 121.7 Citation and Justification

NWP Denial Citation and Justification

It is the judgment of the Office of Water Quality that the proposed Nationwide Permits 16, 17, 20, 23, 31, 32, 34, 35, 38, 41, 53, 54, and 59 may violate Indiana Code (IC) 13-18-4-5 and the water quality standards (WQS) set forth at 327 Indiana Administrative Code (IAC) 2-1-6(a)1, and 327 IAC 2-1.3-3.

1. Indiana Code 13-18-4-5 states in part:

A person may not:

- (1) throw, run, drain or otherwise dispose into any of the streams or waters of Indiana;

or

- (2) cause, permit, or suffer to be thrown, run, drained, allowed to seep, or otherwise disposed into any waters; any organic or inorganic matter that causes or contributes to a polluted condition of any waters, as determined by a rule of the board adopted under Sections 1 and 3 of this chapter.

2. 327 Indiana Administrative Code 2-1-6(a)1 states in part:

All waters at all times and at all places meet the minimum conditions of being free from substances, materials, and discharges that form objectionable deposits, are unsightly or deleterious, and are toxic to plant, animal or aquatic life.

3. 327 Indiana Administrative Code 2-1.3-3 states in part:

For all surface waters of the state, existing uses and the level of water quality necessary to protect existing uses shall be maintained and protected.

Because the discharges associated with the activities specified in NWPs 16, 17, 20, 31, 34, 35, 38, 53, and 59 may, even as conditioned, violate Indiana's WQS, projects undertaking those activities will require a site-specific Section 401 Water Quality Certification to ensure compliance with the water quality requirements found in 327 IAC 2.

The discharges associated with the activities specified in NWPs 23 and 32 are undefined and therefore require a site-specific Section 401 Water Quality Certification to ensure compliance with 327 IAC 2.

The discharges associated with activities specified in NWP 41 have no maximum limitation, no notification requirement, and would authorize activities that would alter the flow path, velocity, and cross-sectional area under the ordinary high water mark. Activities authorized by this NWP would not comply with Indiana's General Condition 9 and therefore require an Individual Section 401 Water Quality Certification to ensure compliance with 327 IAC 2.

The discharges associated with activities specified in NWP 54 would not comply with Indiana's General Condition 21 and would require an Individual Section 401 Water Quality Certification to ensure compliance with 327 IAC 2.

General Condition (GC) Citation and Justification

To ensure projects completed under the Indiana certified NWP's comply with Indiana's WQS, the Indiana general conditions are required.

- GC (1) For certain NWP's, IDEM has placed a notification requirement to ensure the discharges associated with the activities specified in those NWP's comply with 327 IAC 2. To appropriately evaluate impacts to water quality, including cumulative impacts, Indiana needs to be notified.
- GC (2) Several NWP's authorize minor dredging. This condition requiring the deposit of any dredged material in a contained upland disposal area to prevent sediment run-off to any waterbody is necessary to ensure the discharges associated with the disposal of the dredged material complies with 327 IAC 2.
- GC (3) Per 40 CFR 122.26 and 327 IAC 15, the use of appropriate stormwater control measures and maintenance thereof will prevent any sediment laden water from migrating off site and entering waterways and wetlands, potentially impairing water quality.
- GC (4) Per IC 13-14-4-2, the department may inspect public or private property to inspect for and investigate possible violations of environmental management laws. Additionally, 40 CFR 121.11 allows the certifying authority the right to inspect a facility or activity prior to initial operation of a certified project.
- GC (5) This condition is necessary to ensure a projects permanent and secondary impacts fall within the designated minimal impact thresholds specified in GC 13 and GC 14. This condition is necessary to ensure authorized project comply with 327 IAC 2.
- GC (6) This condition is necessary to ensure projects are implemented in accordance with this Section 401 Water Quality Certification and only projects described in the notification are authorized. This ensures compliance with 327 IAC 2 and 327 IAC 5-2-8.
- GC (7) This condition is necessary to ensure only clean fill materials are proposed for discharge to ensure compliance with 327 IAC 2. Discharges of pollutants may require separate authorization under Section 402 of the Federal Clean Water Act.
- GC (8) This condition is necessary to ensure mitigation banking projects go through the procedures found in 33 CFR 332 and IDEM has the opportunity to

appropriately review and condition any proposed mitigation bank to ensure it complies with 327 IAC 2.

- GC (9) Projects that will permanently change the sinuosity, flow path, velocity, cross-sectional area or the slope of a stream have more than a minimal impact. These activities can change the physical, chemical, and biological integrity of waters by impacting aquatic life movement, sediment transport, and changing the thalweg of a stream. These activities do not comply with 327 IAC 2.
- GC (10) Salmond streams are designated for special protection by 327 IAC 2-1.5-5(a)(3). Only those activities identified in GC (10) are authorized by this WQC. Compliance with these activities, conditions and work restrictions will ensure the chemical, physical and biological integrity of the salmonid waters are maintained and protected in compliance with 327 IAC 2.
- GC (11) These waters are designated as Outstanding State Resource Waters by 327 IAC 2-1-11(b), 327 IAC 2-1.3-3(d), and 327 IAC 2-1.5-19(b). Individual Section 401 Water Quality Certifications are required for these waters to ensure there is no degradation and their water quality is protected and maintained in accordance with 327 IAC 2-1-1.5 and 327 IAC 2-1.5-3.
- GC (12) These wetlands and special aquatic sites are synonymous with Rare and Ecologically important wetland types under 327 IAC 17-1-2(3)(B). Individual Section 401 Water Quality Certifications are required for impacts to these waters to ensure there is no degradation and their water quality is protected and maintained in accordance with 327 IAC 2-1-1.5 and 327 IAC 2-1.5-3.
- GC (13) To ensure projects comply with the water quality standards found at 327 IAC 2, IDEM has established 0.10 acre as the minimal impact threshold for the state of Indiana. To ensure consistency with the policy established in 327 IAC 17-2-2(b), this is the threshold for which minimal impact projects are eligible for general permit authorizations. To allow more projects to fit under the NWP's, IDEM has increased this threshold to 0.25 acre if compensatory mitigation is conducted in accordance with GC 15. Compensatory mitigation ensures there is no permanent degradation to water quality in compliance with 327 IAC 2.
- GC (14) To ensure projects comply with the water quality standards found at 327 IAC 2, IDEM has established 300 linear feet as the minimal impact threshold for streams in the state of Indiana. To allow more projects to fit under the NWP's, IDEM has increased this threshold to 500 linear feet if compensatory mitigation is conducted in accordance with GC 16. Compensatory mitigation ensures there is no permanent degradation to water quality in compliance with 327 IAC 2.
- GC (15) 327 IAC 2-1.3-3 establishes anti-degradation standards for all waters of the State to include waters of the U.S. Proposed activities that exceed the minimal impact thresholds identified in GC 13 require compensatory mitigation to ensure there is no permanent degradation. IDEM is authorizing the use of mitigation banks and the Indiana Stream and Wetland Mitigation Program since the use of the NWP's does not allow for the placement of specific conditions on a permittee responsible mitigation proposal. IDEM is requiring proof of purchase and establishing a timeframe for submittal which is consistent with current Corps and IDEM procedures. To ensure aquatic resource functions

and values are replaced, the compensatory mitigation ratios and service area requirements are based in part on the requirements found in IC 13-18-22 and 33 CFR 332.

- GC (16) 327 IAC 2-1.3-3 establishes anti-degradation standards for all waters of the State to include waters of the U.S. Proposed activities that exceed the minimal impact thresholds identified in GC 14 require compensatory mitigation to ensure there is no permanent degradation. IDEM is authorizing the use of mitigation banks and the Indiana Stream and Wetland Mitigation Program since the use of the NWP does not allow for the placement of specific conditions on a permittee responsible mitigation proposal. IDEM is requiring proof of purchase and establishing a timeframe for submittal which is consistent with current Corps and IDEM procedures. To ensure aquatic resource functions and values are replaced, the compensatory mitigation ratios and service area requirements are based in part on the requirements found in IC 13-18-22, 327 IAC 2 and 33 CFR 332.
- GC (17) The goal of 327 IAC 2 is to restore and maintain the chemical, physical, and biological integrity of waters of the state. This condition is required to ensure there are no state rare, threatened, or endangered water dependent species impacts authorized by the NWP.
- GC (18) This a clarification condition to allow the use of multiple NWPs if they do not exceed specific impact thresholds. This condition is necessary to ensure compliance with 327 IAC 2.
- GC (19) This is a necessary condition to ensure an applicant submitted all required information with the notification required by GC 1. Without all necessary information, IDEM cannot determine if a project complies with 327 IAC 2.
- GC (20) Certain NWPs allow for temporary impacts. If these activities are poorly implemented, they result in discharges that would affect water quality. This condition is necessary to ensure projects comply with 327 IAC 2 and 327 IAC 15.
- GC (21) Certain NWPs allow for the discharge of riprap or other bank stabilization material. This condition is necessary to ensure authorized activities do not interfere with sediment transport, create aquatic life barriers, or interfere with movement between aquatic and upland habitats and ensure compliance with 327 IAC 2.
- GC (22) Several NWPs allow temporary impacts. Since these activities exceed the minimal impact threshold specified in GC 13, IDEM is requiring notification to ensure they are properly restored. This will ensure compliance 327 IAC 2.
- GC (23) Several NWPs allow temporary impacts. This condition is necessary to ensure those temporary impacts are restored so there is no degradation and the project complies with 327 IAC 2.
- GC (24) This condition is necessary to ensure only projects that have a minimal impact to water quality and comply with 327 IAC 2 are authorized by the NWPs.

Nationwide Permit #3 Citation and Justification

Per 327 IAC 2-1-1.5, the goal of Indiana's water quality standards is to restore and maintain the chemical, physical and biological integrity of the state's waters. Maintenance activities such as the replacement of stream encapsulations and the installation of thermal plastic liners or other liner types can interfere with or become injurious to aquatic life movements. These activities can change the physical integrity of a stream channel and interfere with movement between aquatic environments and upland habitat. The Specific Conditions for NWP #3 will ensure authorized projects will comply with 327 IAC 2.

Nationwide Permit #7 Citation and Justification

Per 327 IAC 2-1-1.5, the goal of Indiana's water quality standards is to restore and maintain the chemical, physical and biological integrity of the state's waters. Please refer to the citations and justifications above for references to General Conditions. The activities authorized by NWP #7 can interfere with or become injuries to aquatic life movements. These activities can change the physical integrity of a stream channel and interfere with movement between aquatic environments and upland habitat. The Specific Conditions for NWP #7 will ensure authorized projects will comply with 327 IAC 2.

Nationwide Permit # 13 Citation and Justification

Per 327 IAC 2-1-1.5, the goal of Indiana's water quality standards is to restore and maintain the chemical, physical and biological integrity of the state's waters. Please refer to the citations and justification above for references to General Conditions. These conditions are necessary to ensure bank stabilization activities do not interfere with sediment transport, aquatic life movements, or movement between aquatic environments and upland habitat. Some of the condition language is directly from the September 15, 2020, Federal Register Notice Proposal to Reissue and Modify Nationwide Permits and the Indiana Regional General Permit (LRL-2018-00988). These conditions are necessary to ensure compliance with 327 IAC 2.

Nationwide Permit #14 Citation and Justification

Per 327 IAC 2-1-1.5, the goal of Indiana's water quality standards is to restore and maintain the chemical, physical and biological integrity of the state's waters. Please refer to the citations and justification above for references to General Conditions. Activities authorized by NWP #14 can impact aquatic life movement and sediment transport. If structures or fills are not properly installed, they can cause erosion and scour within stream channels which alters the physical integrity of the streams. The sumping conditions were developed by IDEM and the Indiana Department of Transportation and are part of their standards and specifications. The conditions for perennial streams greater than 12 feet were designed by the Federal Highway

Administration to ensure aquatic organism passage is considered during culvert installations. These conditions ensure compliance with 327 IAC 2.

Nationwide Permit #15 Citation and Justification

Per 327 IAC 2-1-1.5, the goal of Indiana's water quality standards is to restore and maintain the chemical, physical and biological integrity of the state's waters. Please refer to the citations and justification above for references to General Conditions. Activities authorized by NWP #15 can interfere with sediment transport and aquatic life movement. These conditions ensure compliance with 327 IAC 2.

Nationwide Permit #18 Citation and Justification

Per 327 IAC 2-1-1.5, the goal of Indiana's water quality standards is to restore and maintain the chemical, physical and biological integrity of the state's waters. Please refer to the citations and justification above for references to General Conditions. The 0.10 acre limit is to ensure authorized activities meet the minimal impact threshold IDEM has placed on the NWPs. See the citation/justification for GC 13 for minimal impacts. These conditions ensure compliance with 327 IAC 2.

Nationwide Permit #25 Citation and Justification

Per 327 IAC 2-1-1.5, the goal of Indiana's water quality standards is to restore and maintain the chemical, physical and biological integrity of the state's waters. Please refer to the citations and justification above for references to General Conditions. These conditions are necessary to ensure the authorized activities are located outside the low flow channel to avoid impacts to sediment transport, aquatic life movements, and the physical degradation of the channel. The disposal requirements are necessary to ensure excavation and dewatering activities are conducted in a manner that does not result in a discharge where a numeric water quality standard exists. These conditions ensure compliance with 327 IAC 2.

Nationwide Permit #27 Citation and Justification

Per 327 IAC 2-1-1.5, the goal of Indiana's water quality standards is to restore and maintain the chemical, physical and biological integrity of the state's waters. Please refer to the citations and justification above for references to General Conditions. The specified conditions for NWP #27 are necessary to ensure there is no permanent degradation to the existing beneficial uses of waters of the State. The impact thresholds are to ensure only minimal impact projects are authorized. The release of sediment from a reservoir is not authorized by this WQC. The release may result in discharges that have numeric limits within 327 IAC 2. Additionally, the sediment may result in harmful and objectionable depositions to aquatic life. Due to the complexity and numerous types of activities authorized by this NWP, notification for activities that install or remove water control structures, dikes, berms, or accumulated sediment is required to verify compliance with 327 IAC 2. These conditions ensure compliance with 327 IAC 2.

Nationwide Permit #33 Citation and Justification

Per 327 IAC 2-1-1.5, the goal of Indiana's water quality standards is to restore and maintain the chemical, physical and biological integrity of the state's waters. Please refer to the citations and justification above for references to General Conditions. These conditions are necessary to ensure all temporary impacts are installed in a manner that does not impede flow, sediment transport, aquatic life movement or can be eroded and redeposited in a manner that becomes injuries to aquatic life. A restoration plan is required to ensure all areas are restored so there is no degradation. These conditions ensure compliance with 327 IAC 2.

Nationwide Permit #36 Citation and Justification

Per 327 IAC 2-1-1.5, the goal of Indiana's water quality standards is to restore and maintain the chemical, physical and biological integrity of the state's waters. Please refer to the citations and justification above for references to General Conditions. Some of the condition language is directly from the September 15, 2020, Federal Register Notice Proposal to Reissue and Modify Nationwide Permits and the Indiana Regional General Permit (LRL-2018-00988). These conditions are necessary to ensure activities authorized by NWP #36 comply with 327 IAC 2.

Nationwide Permit #37 Citation and Justification

Per 327 IAC 2-1-1.5, the goal of Indiana's water quality standards is to restore and maintain the chemical, physical and biological integrity of the state's waters. This condition is necessary to ensure IDEM has participated in the development of the project and has signed the agreement to ensure compliance with 327 IAC 2.

Nationwide Permit #46 Citation and Justification

Per 327 IAC 2-1-1.5, the goal of Indiana's water quality standards is to restore and maintain the chemical, physical and biological integrity of the state's waters. These activities can change the physical, chemical, and biological integrity of waters by impacting aquatic life movement, sediment transport, and changing the thalweg of a stream. This condition is necessary to ensure compliance with 327 IAC 2.

From: Eshelman, Justin D CIV USARMY CELRL (USA)
<Justin.D.Eshelman@usace.army.mil>
Sent: Monday, August 25, 2025 11:55 AM
To: Clay Jarosinski
Cc: Darrell Edwards; ekuker@greenfieldin.org; Cohen, L David
Subject: RE: Section 404 WQC Regional General Permit Notification - Greenfield,
Hancock County, IN
Attachments: [W240749 Riley Park 404 Package 2025.08.21.pdf](#); [2021 NWP 14 Linear Transportation Projects.pdf](#)
Categories: Green Category

Mr. Jarosinski,

This is in response to your electronic correspondence dated August 21, 2025, concerning a proposal to replace two pedestrian bridges within Riley Park, located in Hancock County, Indiana. Your submittal has been assigned Corps ID No. LRL-2025-00629-jde.

Based on the provided information it appears that your proposed project could qualify under the provisions of Nationwide Permit (NWP) No. 14, without submitting preconstruction notification to the Corps. However, you must comply with the attached terms and conditions of the NWP. If anything changes in the scope of the project which would require preconstruction notification or prohibit your compliance with the terms and conditions of the NWP, then you should resubmit your project information to us for review. Please retain a copy of this response for your records.

Thank you and have a great day,
Justin

Justin Eshelman
Project Manager, North Branch
Regulatory Division
USACE, Louisville District
Indianapolis Regulatory Office
8902 Otis Avenue, Suite 105B
Indianapolis, IN 46216
Phone: 317-543-9424 Ext. 5

Please comment on our service. Our National Customer Service Survey is located at:
<https://regulatory.ops.usace.army.mil/customer-service-survey/>

From: Clay Jarosinski <jarosinskic@weihe.net>
Sent: Thursday, August 21, 2025 11:59 AM
To: CELRL.Door.To.The.Corps <CELRL.Door.To.The.Corps@usace.army.mil>
Cc: Yoder, Mackenzie P <mpyoder@idem.in.gov>; ekuker@greenfieldin.org; gmorrow@greenfieldin.org; jamiejohnson@dnr.in.gov; Michael Krosschell <krosschellm@weihe.net>; Darrell Edwards <edwardsd@weihe.net>



2021 Nationwide Permit Summary

US Army Corps
of Engineers
Louisville District ®

Issued: February 25, 2022

Expires: March 14, 2026

No. 14. Linear Transportation Projects

(NWP Final Rule, 86 FR 73522)

Activities required for crossings of waters of the United States associated with the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, driveways, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidal waters, the discharge of dredged or fill material cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge of dredged or fill material cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

This NWP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges of dredged or fill material, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

This NWP cannot be used to authorize

non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) The loss of waters of the United States exceeds 1/10 acre; or (2) there is a discharge of dredged or fill material in a special aquatic site, including wetlands. (See general condition 32.) (Authorities: Sections 10 and 404).

Note 1: For linear transportation projects crossing a single waterbody more than one time at separate and distant locations, or multiple waterbodies at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. Linear transportation projects must comply with 33 CFR 330.6(d).

Note 2: Some discharges of dredged or fill material for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under Section 404(f) of the Clean Water Act (see 33 CFR 323.4).

Note 3: For NWP 14 activities that require pre-construction notification, the PCN must include any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings that require Department of the Army authorization but do not require pre-construction notification (see paragraph (b)(4) of general condition 32). The district engineer will evaluate the PCN in accordance with Section D, "District Engineer's Decision." The

district engineer may require mitigation to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see general condition 23).

Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United

States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his or her authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other

fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Structures and Fills. Temporary structures must be removed, to the maximum extent practicable, after their use has been discontinued. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. (a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

(b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct

management responsibility for that river. Permittees shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

(c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: <http://www.rivers.gov/>.

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify designated critical habitat or critical habitat proposed for such designation. No activity is authorized under any NWP which “may affect” a listed species or critical habitat, unless ESA section 7 consultation addressing the consequences of the proposed activity on listed species or critical habitat has been completed. See 50 CFR 402.02 for the definition of “effects of the action” for the purposes of ESA section 7 consultation, as well as 50 CFR 402.17, which provides further explanation under ESA section 7 regarding “activities that are reasonably certain to occur” and “consequences caused by the proposed action.”

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA (see 33 CFR 330.4(f)(1)). If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate

documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat or critical habitat proposed for such designation, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation), the pre-construction notification must include the name(s) of the endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or that utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. The district engineer will determine whether the proposed activity “may affect” or will have “no effect” to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps’ determination within 45 days of receipt of a complete pre-construction notification. For activities where the non-Federal applicant has identified listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have “no effect” on listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation), or until ESA section 7

consultation or conference has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation or conference with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWPs.

(e) Authorization of an activity by an NWP does not authorize the “take” of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with “incidental take” provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word “harm” in the definition of “take” means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district

engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

(g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide web pages at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.nmfs.noaa.gov/pr/species/esa/> respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for ensuring that an action authorized by an NWP complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting the appropriate local office of the U.S. Fish and Wildlife Service to determine what measures, if any, are necessary or appropriate to reduce adverse effects to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. Historic Properties. (a) No activity is authorized under any NWP which may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)(1)). If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The

district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts commensurate with potential impacts, which may include background research, consultation, oral history interviews, sample field investigation, and/or field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential

to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect.

(d) Where the non-Federal applicant has identified historic properties on which the proposed NWP activity might have the potential to cause effects and has so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed. For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must

include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. Permittees that discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by an NWP, they must immediately notify the district engineer of what they have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, 52, 57 and 58 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed by permittees in the designated critical resource waters including wetlands

adjacent to those waters. The district engineer may authorize activities under these NWPs only after she or he determines that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

(d) Compensatory mitigation at a minimum one-for-one ratio will be required for all losses of stream bed that exceed 3/100-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more

than minimal, and provides an activity-specific waiver of this requirement. This compensatory mitigation requirement may be satisfied through the restoration or enhancement of riparian areas next to streams in accordance with paragraph (e) of this general condition. For losses of stream bed of 3/100-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. If restoring riparian areas involves planting vegetation, only native species should be planted. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district

engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWP, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation.

(2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f).)

(3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure

timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). If permittee-responsible mitigation is the proposed option, and the proposed compensatory mitigation site is located on land in which another federal agency holds an easement, the district engineer will coordinate with that federal agency to determine if proposed compensatory mitigation project is compatible with the terms of the easement.

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan needs to address only the baseline conditions at the impact site and the number of credits to be provided (see 33 CFR 332.4(c)(1)(ii)).

(6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in

the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state or federal, dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. (a) Where the certifying authority (state, authorized tribe, or EPA, as appropriate) has not previously certified compliance of an NWP with CWA section 401, a CWA section 401 water quality certification for the proposed discharge must be obtained or waived (see 33 CFR 330.4(c)). If the permittee cannot comply with all of the conditions of a water quality certification previously issued by certifying authority for the issuance of the NWP, then the permittee must obtain a water quality certification or waiver for the proposed discharge in order for the activity to be authorized by an NWP.

(b) If the NWP activity requires pre-construction notification and the certifying authority has not previously certified compliance of an NWP with CWA section 401, the proposed discharge is not

authorized by an NWP until water quality certification is obtained or waived. If the certifying authority issues a water quality certification for the proposed discharge, the permittee must submit a copy of the certification to the district engineer. The discharge is not authorized by an NWP until the district engineer has notified the permittee that the water quality certification requirement has been satisfied by the issuance of a water quality certification or a waiver.

(c) The district engineer or certifying authority may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). If the permittee cannot comply with all of the conditions of a coastal zone management consistency concurrence previously issued by the state, then the permittee must obtain an individual coastal zone management consistency concurrence or presumption of concurrence in order for the activity to be authorized by an NWP. The district engineer or a state may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its CWA section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is authorized, subject to the following restrictions:

(a) If only one of the NWPs used to authorize the single and complete project has a specified acreage limit, the acreage loss of waters of the United States cannot exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

(b) If one or more of the NWPs used to authorize the single and complete project has specified acreage limits, the acreage loss of waters of the United States authorized by those NWPs cannot exceed their respective specified acreage limits. For example, if a commercial development is constructed under NWP 39, and the single and complete project includes the filling of an upland ditch authorized by NWP 46, the maximum acreage loss of waters of the United States for the commercial development under NWP 39 cannot exceed 1/2-acre, and the total acreage loss of waters of United States due to the NWP 39 and 46 activities cannot exceed 1 acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

“When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.”

(Transferee)

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the activity and mitigation.

The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. Activities Affecting Structures or Works Built by the United States. If an

NWP activity also requires review by, or permission from, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a "USACE project"), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission and/or review is not authorized by an NWP until the appropriate Corps office issues the section 408 permission or completes its review to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. Pre-Construction Notification. (a) *Timing.* Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

- (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or
- (2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the

permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) *Contents of Pre-Construction Notification:* The PCN must be in writing and include the following information:

- (1) Name, address and telephone numbers of the prospective permittee;
- (2) Location of the proposed activity;
- (3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;
- (4) (i) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any

other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures.

(ii) For linear projects where one or more single and complete crossings require pre-construction notification, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters (including those single and complete crossings authorized by an NWP but do not require PCNs). This information will be used by the district engineer to evaluate the cumulative adverse environmental effects of the proposed linear project, and does not change those non-PCN NWP activities into NWP PCNs.

(iii) Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial and intermittent streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many

wetlands, other special aquatic sites, and other waters. Furthermore, the 45-day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-federal permittees, if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat (or critical habitat proposed for such designation), the PCN must include the name(s) of those endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

(8) For non-federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the "study river" (see general condition 16); and

(10) For an NWP activity that requires permission from, or review by, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from, or review by, the Corps office having jurisdiction over that USACE project.

(c) Form of Pre-Construction Notification: The nationwide permit pre-construction notification form (Form ENG 6082) should be used for NWP PCNs. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal.

(2) Agency coordination is required for: (i) all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iii) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

(3) When agency coordination is required, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or e-mail that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure that the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

D. District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the single and complete crossings of waters of the United States that require PCNs to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings of waters of the United States authorized by an NWP. If an applicant requests a waiver of an applicable limit, as provided for in NWPs 13, 36, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects.

2. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by an NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the

NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

3. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of waters. The district engineer will consider any proposed compensatory mitigation or other mitigation measures the applicant has included in the proposal in determining whether the net adverse environmental effects of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not

practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure that the NWP activity results in no more than minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

4. If the district engineer determines that the adverse environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either: (a) that the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the activity is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or (c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless additional time is required to comply with general conditions 18, 20, and/or 31), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no

work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

E. Further Information

1. District engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

F. Nationwide Permit Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term “discharge” means any discharge of dredged or fill material into waters of the United States.

Ecological reference: A model used to plan and design an aquatic habitat and riparian area restoration, enhancement, or establishment activity under NWP 27. An ecological reference may be based on the structure, functions, and dynamics of an aquatic habitat type or a riparian area type that currently exists in the region where the proposed NWP 27 activity is located. Alternatively, an ecological reference may be based on a conceptual model for the aquatic habitat type or riparian area type to be restored, enhanced, or established as a result of the proposed NWP 27 activity. An ecological reference takes into account the range of variation of the aquatic habitat type or riparian area type in the region.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water’s surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of

water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps Regulatory Program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. The loss of stream bed includes the acres of stream bed that are permanently adversely affected by filling or excavation because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters or wetlands for determining whether a project may qualify for an NWP; it is not

a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities that do not require Department of the Army authorization, such as activities eligible for exemptions under section 404(f) of the Clean Water Act, are not considered when calculating the loss of waters of the United States.

Navigable waters: Waters subject to section 10 of the Rivers and Harbors Act of 1899. These waters are defined at 33 CFR part 329.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of flowing or standing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of “open waters” include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Perennial stream: A perennial stream has surface water flowing continuously year-round during a typical year.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For

the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands next to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term “single and complete project” is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of

the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of “independent utility”). Single and complete non-linear projects may not be “piecemealed” to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream’s course, condition, capacity, or location that causes more than minimal

interruption of normal stream processes. A channelized jurisdictional stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a jurisdictional wetland that is inundated by tidal waters. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line.

Tribal lands: Any lands title to which is either: 1) held in trust by the United States for the benefit of any Indian tribe or individual; or 2) held by any Indian tribe or individual subject to restrictions by the United States against alienation.

Tribal rights: Those rights legally accruing to a tribe or tribes by virtue of inherent sovereign authority, unextinguished aboriginal title, treaty, statute, judicial decisions, executive order or agreement, and that give rise to legally enforceable remedies.

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWPs, a waterbody is a “water of the United States.” If a wetland is adjacent to a waterbody determined to be a water of the United

States, that waterbody and any adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)).

SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
- B. Types of allowances include the following:
 - 1. Lump-sum allowances.

1.2 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Architect from the designated supplier.

1.3 ACTION SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

1.4 INFORMATIONAL SUBMITTALS

- A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.5 COORDINATION

- A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.6 LUMP-SUM ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include freight and delivery to Project site.
- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials specified by Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.
- C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
 - 1. If requested by Architect, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

- A. Allowance No. One: Include \$30,000.00 General Allowance in the Base Bid.

END OF SECTION 012100

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Section:
 - 1. Division 1 Section "Summary" for limitations on work restrictions and utility interruptions.

1.2 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to ARCHITECT/ENGINEER or OWNER'S REPRESENTATIVE, testing agencies, and authorities having jurisdiction.

1.3 INFORMATIONAL SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- B. Erosion- and Sedimentation-Control Plan: Show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

1.4 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.5 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

- 2.1 MATERIALS (Contractor is responsible for securing site and stored materials against damage and/or theft. Fencing may be used in this effort, and must be coordinated with owner)
- A. Portable Chain-Link Fencing: Minimum 2-inch , 0.148-inch-thick, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch-OD line posts and 2-7/8-inch-OD corner and pull posts, with 1-5/8-inch-OD top and bottom rails. Provide galvanized steel bases for supporting posts.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
1. Locate facilities to limit site disturbance as specified in Division 1 Section "Summary."
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following: Review first subparagraph below with Owner's insurance carrier. Revise to suit Project.
1. Maintain support facilities until ARCHITECT/ENGINEER or OWNER'S REPRESENTATIVE schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- C. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
 2. Remove snow and ice as required to minimize accumulations.
- D. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
1. Identification Signs: Provide Project identification signs as indicated on Drawings.
 2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
 - a. Provide temporary, directional signs for construction personnel and visitors.
 3. Maintain and touchup signs so they are legible at all times.
- E. Waste Disposal Facilities: Comply with requirements specified in Division 1 Section "Construction Waste Management."
- F. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 1 Section "Execution Requirements" for progress cleaning requirements.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- B. Temporary Erosion and Sedimentation Control: Comply with requirements specified in Division 2 Section "Site Clearing."
- C. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to requirements of 2003 EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.
- D. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- E. Tree and Plant Protection: Comply with requirements specified in Division 2 Section "Tree Protection and Trimming."
- F. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

- G. Site Enclosure Fence: Prior to commencing earthwork, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.
 - 1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
 - 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner.
- H. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance to any aquatic center area, vandalism, theft, and similar violations of security. Lock entrances at end of each work day.

3.5 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 - 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 - 2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 1 Section "Closeout Procedures."

END OF SECTION 01500

REPORT OF GEOTECHNICAL ENGINEERING EXPLORATION

**RILEY PARK PEDESTRIAN BRIDGES
GREENFIELD, INDIANA
24-1911-01G**

PREPARED FOR:

**WEIHE ENGINEERS, INC.
10505 NORTH COLLEGE AVENUE
INDIANAPOLIS, INDIANA 46280**

**Patriot Engineering and Environmental, Inc.
6150 East 75th Street
Indianapolis, Indiana 46250**

February 4, 2025



February 4, 2025

Mr. Michael Krosschell
Weihe Engineers, Inc.
10505 North College Avenue
Indianapolis, Indiana 46280

Re: Report of Geotechnical Engineering Exploration
Riley Park Pedestrian Bridges
26 Apple Street
Greenfield, Indiana
Patriot Project No.: 24-1911-01G

Dear Michael:

Attached is the report of our geotechnical engineering exploration for the above referenced project. This exploration was completed in general accordance with our Proposal No. P24-2245-01G dated December 9, 2024.

This report includes graphic logs of four (4) soil borings drilled at the proposed project site. Also included in the report are the results of laboratory tests performed on samples obtained from the site, and geotechnical recommendations pertinent to the site development, foundation design, and construction.

We appreciate the opportunity to perform this geotechnical engineering exploration and are looking forward to working with you during the construction phase of the project. If you have any questions regarding this report or if we may be of any additional assistance regarding any geotechnical aspect of the project, please do not hesitate to contact our office.

Respectfully submitted,
Patriot Engineering and Environmental, Inc.


Ian Grafe, E.I.
Geotechnical Engineer




William D. Dubois, P.E.
Senior Principal Engineer

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REPORT OF GEOTECHNICAL ENGINEERING EXPLORATION

**Riley Park Pedestrian Bridges
26 Apple Street
Greenfield, Indiana
Patriot Project No.: 24-1911-01G**

1.0 INTRODUCTION

1.1 General

Weihe Engineers, Inc. is planning the reconstruction of the existing pedestrian bridges located at 26 Apple Street in Greenfield, Indiana. The results of our geotechnical engineering exploration for the project are presented in this report.

1.2 Purpose and Scope

The purpose of this exploration is to determine the general near surface and subsurface conditions within the project area and to develop the geotechnical engineering recommendations necessary for the design and construction of the proposed bridges. This was achieved by drilling soil borings, and by conducting laboratory tests on samples taken from the borings. This report contains the results of our findings, geotechnical engineering interpretation of these results with respect to the available project information, and recommendations to aid in the design and construction of the proposed bridges.

2.0 PROJECT INFORMATION

The proposed project is located at 26 Apple Street in Greenfield, Indiana. The project consists of two (2) pedestrian bridges located at the park. The existing bridges will be removed and replaced with the new bridges. Based on information provided by Silver Creek Engineering, we understand that the bridge abutments will not experience loads exceeding 40 kips.

3.0 SITE AND SUBSURFACE CONDITIONS

3.1 Site Conditions

The project site is presently a public park, with borings being conducted on each side of the creek that the bridges cross over. The surrounding area is generally an area of residential development. The topography in the area proposed for construction is generally flat.

3.2 General Subsurface Conditions

Our interpretation of the subsurface conditions is based upon four (4) soil borings drilled at the approximate locations shown on the Boring Location Map (Figure No. 2) in Appendix "A". All depths discussed below refer to depths below the existing ground surface. Based on the results of the soil borings completed at the site, the following subsurface profile is presented. A description of each general soil unit has been identified and is described below:

Topsoil – Topsoil, a surficial layer of material that is a blend of silts, sands, and clays, with varying amounts of organic matter, was encountered at the ground surface at the boring locations. The topsoil layer was about 5 to 8 inches thick in the borings.

Silty and/or Sandy Clay (CL) - The topsoil layer is generally underlain by very soft to hard, silty and/or sandy clay. The silty and/or sandy clay layers typically extend to depths of 20 feet below the existing ground surface. The natural moisture content of this material ranges from 8 to 58 percent (%). The silty and/or sandy clay layers have hand penetrometer values of 0.4 to greater than 6.0 tons per square foot (tsf). Standard Penetration Test N-values (blow counts) in this material varied from 2 to more than 50 blows per foot (bpf). ***Layers of clay in Borings B-1 and B-3 encountered a trace of organics in the top 6 feet of soil.***

Sand (SP and SP-SM) – Within the silty and/or sandy clay layers, brown, saturated, medium dense, sand was encountered from 3.5 to 23.5 feet below existing grade. Standard Penetration Test N-values in this sand varied from 4 to 26 bpf.

Silty Sand (SM) - Below the silty and/or sandy clay layers, gray, saturated, medium dense silty sand was encountered between 6 to 18.5 feet below existing grade in Boring B-4. Standard Penetration Test N-values in this silty sand varied from 14 to 28 bpf.

Gravel (GP-GM) - Within the silty and/or sandy clay layers, medium dense gravel was encountered between 3.5 to 6 feet below existing grade in Boring B-4. The Standard Penetration Test N-value in this gravel was 21 bpf.

As previously mentioned, unsuitable very soft to soft clays, a trace of organic material, and very loose sands were encountered in two (2) of the four (4) borings, at depths up to 6 feet below the existing ground surface. The following table presents the extent of the unsuitable soils encountered in the borings:

Table No. 1: Summary of Unsuitable Soils Encountered in Borings

Boring Number	Soil Classification	Approximate Depth of Unsuitable Soils (feet)⁽¹⁾
B-1	Medium Stiff Silty Clay (CL) with Trace Organics	0 to 3.5
	Very Loose Sand (SP-SM)	3.5 to 6
B-3	Very Soft Sandy Clay (CL)	0 to 3.5
	Very Soft Silty Clay (CL)	3.5 to 6

⁽¹⁾ Represents depth below existing ground surface.

The soil conditions described above are general, and some variations in the descriptions should be expected; for more specific information, please refer to the boring logs presented in Appendix “A”. It should be noted that the dashed stratification lines shown on the soil boring logs indicate approximate transitions between soil types. In-situ stratification changes could occur gradually or at different depths.

3.3 Groundwater Conditions

The term groundwater pertains to any water that percolates through the soil found on site. This includes any overland flow that permeates through a given depth of soil, perched water, and water that occurs below the “water table”, a zone that remains saturated and water-bearing year-round.

Groundwater was observed during drilling in the soil borings performed at the site at depths between 3.5 and 8.5 feet below the existing ground surface. Immediately after the borings were completed and the augers were removed from the boreholes, groundwater was observed at depths between 2.5 and 4 feet below the existing ground surface in the soil borings.

It should be recognized that fluctuations in the groundwater level should be expected over time due to variations in rainfall and other environmental or physical factors. ***The true static groundwater level can only be determined through observations made in cased holes over a long period of time, the installation of which was beyond the scope of this exploration.***

4.0 DESIGN RECOMMENDATIONS

4.1 Basis

Our recommendations are based on data presented in this report, which include soil borings, laboratory testing, and our experience with similar projects. Subsurface variations that may not be indicated by a dispersive exploratory boring program can exist on any site. If such variations or unexpected conditions are encountered during construction, or if the project information is incorrect or changed, we should be informed immediately since the validity of our recommendations may be affected.

4.2 Foundations

As previously mentioned, very loose sand and very soft clay was encountered in the borings to depths of 6 feet below existing grade. ***If soft clays, very loose sands, existing fill materials, or other unsuitable materials are encountered at the footing level or below, they must be undercut and replaced with well-compacted and tested structural fill prior to construction of foundations or the footings can be extended to suitable natural soils.*** Following the excavation of the footing areas, the foundations subgrade should be visually observed and probed by a *Patriot* representative at the direction of a geotechnical engineer at multiple locations at isolated footings and at every 10 feet (maximum) along wall footings to a depth of 3 to 5 feet. Any unsuitable soils encountered at the footing subgrade or below should be removed and replaced with well-compacted and tested structural fill.

Provided the above recommendations are followed, the proposed structures can be supported on spread footings bearing on the native undisturbed medium stiff to very stiff clays or loose to medium dense sands encountered at shallow depths or on new well-compacted and tested structural fill overlying the same. These footings should be proportioned using a net allowable soil bearing pressure not exceeding 2,000 pounds per square foot (psf) for column footings or 1,500 psf for wall (strip) footings. For proper performance at the recommended design bearing pressure, foundations must be constructed in compliance with the recommendations for footing excavation inspection that are discussed in Section 5.0 “*Construction Considerations*”.

Alternatively, the foundations may be designed to bear in the medium dense sands and gravels encountered at a depth of 3.5 to 6 feet using a net maximum allowable soil bearing pressure not exceeding 3,000 psf. However, it may be necessary to undercut the excavation at isolated locations to accommodate the design bearing capacity. Careful field

control during construction by *Patriot* will be necessary to confirm that the exposed material is capable of supporting the design bearing pressure and minimize the post construction settlement potential.

We estimate that the total foundation settlement should not exceed approximately 1 inch and that differential settlement should not exceed about $\frac{3}{4}$ inch. Careful field control during construction is necessary to minimize the actual settlement that will occur.

In using the above net allowable soil bearing pressures, the weight of the foundation and backfill over the foundation need not be considered. Hence, only loads applied at or above the minimum finished grade adjacent to the footing need to be used for dimensioning the foundations. Each new foundation should be positioned so it does not induce significant pressure on adjacent foundations; otherwise the stress overlap must be considered in the design.

All exterior foundations and foundations in unheated areas should be located at a depth of at least 30 inches below final exterior grade for frost protection. We recommend that wall (strip) footings be at least 18 inches wide and column footings be at least 24 inches wide for bearing capacity considerations.

Positive drainage of surface water, including downspout discharge, should be maintained away from structure foundations to avoid wetting and weakening of the foundation soils both during construction and after construction is complete.

4.3 Lateral Earth Pressures

For the design of retaining walls, bridge abutments, the magnitude of the lateral earth pressure on the walls is dependent on the method of backfill placement behind the walls, the type of backfill soil, drainage provisions and whether the wall is permitted to yield during and/or after placement of the backfill. When a retaining wall is held rigidly against horizontal movement, the lateral pressure against the wall is greater than the "active" earth pressure that is typically used in the design of free-standing retaining walls. Therefore, rigid walls should be designed for higher "at-rest" pressures (using an at-rest lateral earth pressure coefficient, K_0), while yielding walls can be designed for active pressures (using an active lateral earth pressure coefficient, K_a).

The abutment walls proposed for the project are expected to be rigid walls. ***It should be noted that the on-site clayey soils are not suitable for use as backfill immediately***

against the loading dock walls. Therefore, provided **a clean well-graded granular material is used for backfill and water is not allowed to build up behind the wall**, a total soil unit weight (γ_t) of 125 pounds per cubic foot (pcf), an at-rest lateral earth pressure coefficient (K_o) of 0.45, an active lateral earth pressure coefficient (K_a) of 0.30, and a passive lateral earth pressure coefficient (K_p) of 3.4 can be used for calculating the lateral earth pressures. An equivalent fluid active pressure of 38 psf per foot of wall height is recommended for design purposes in conditions where the top of the wall is allowed to yield during backfilling. However, if the top of the wall will be fixed, an equivalent fluid at-rest pressure of 57 psf per foot of wall height is recommended for design purposes. This equivalent fluid pressure would increase linearly from zero (0) psf at the ground surface, to a maximum at the base of the wall.

When calculating passive earth pressure, the upper 3 feet of soil should be neglected due to the potential for frost disturbance or otherwise insufficiently compacted soil to appropriately generate the specified passive pressure. Additionally for design purposes, it should be recognized that in order for passive earth pressures to be fully developed, the wall must move laterally about 0.04H (where "H" equals the wall height). **In most cases, passive earth pressures behind walls should not be considered in design.**

If hydrostatic pressure due to water build-up against the abutment walls is anticipated, the equivalent fluid pressure method will be changed for the soil. Rather, the lateral earth pressure should be computed using a total soil unit weight of 125 pcf above the highest anticipated water level, and a buoyant soil unit weight of 63 pcf below the highest anticipated water level. The earth pressure coefficient indicated above should be used above and below the water level to compute the lateral earth pressure. The hydrostatic pressure should be computed using the highest anticipated water level. The lateral earth pressure and hydrostatic pressure should be added to obtain the total lateral pressure on the wall.

Furthermore, in conjunction with and as a direct result of the lateral earth pressures defined above, the shear resistance against base sliding can be computed by multiplying the minimum normal force on the base of the footing times a coefficient of friction (μ) of 0.3. We recommend that for evaluation of sliding stability that a minimum factor of safety (F_s) of 1.5 is utilized for design purposes. Additionally for design, the toe pressure for the abutment wall footings should not exceed the maximum allowable bearing pressure provided in Section 4.2 "*Foundations*".

Table No. 2: Summary of Lateral Earth Design Pressures for Retaining Walls

Soil Unit Weight (γ_t)	At-Rest Coefficient (K_o)	Active Coefficient (K_a)	Passive Coefficient (K_p)	Coefficient of Friction (μ)	Minimum Factor of Safety (F_s)
125 pcf	0.45	0.30	3.4	0.3	1.5

4.5 Seismic Considerations

For structural design purposes, we recommend using a **Site Classification of “C”** as defined by the 2014 Indiana Building Code (modified 2012 International Building Code (IBC)). Furthermore, along with using a Site Classification of “C”, we recommend the use of the maximum considered spectral response acceleration and design spectral response acceleration coefficients provided in Table No. 3 below. Refer to Appendix “B” for “*Seismic Site Class Evaluation*” report summary.

Table No. 3: Seismic Design Spectral Response Acceleration Coefficients

Period (seconds)	Maximum Considered Spectral Response Acceleration Coefficient	Soil Factor	Design Spectral Response Acceleration Coefficient
0.2	$S_S = 0.145 \text{ g}$	1.20	$S_{DS} = 0.116 \text{ g}$
1.0	$S_1 = 0.081 \text{ g}$	1.70	$S_{D1} = 0.092 \text{ g}$

These values were obtained from the “*Earthquake Ground Motion Parameters*” program for seismic design, developed by the United States Geological Survey (USGS) Earthquake Hazard Program, utilizing latitude 39.7864° (degree) north and longitude 85.7557° (degree) west as the designation for identifying the location of the parcel. Other earthquake resistant design parameters should be applied consistent with the minimum requirements of the 2014 Indiana Building Code.

5.0 CONSTRUCTION CONSIDERATIONS

5.1 Site Preparation

All areas that will support foundations, floors, pavements, or newly placed structural fill must be properly prepared. All loose surficial soil or “topsoil” and other unsuitable materials must be removed. Unsuitable materials include frozen soil, relatively soft material, relatively wet soils, deleterious material, or soils that exhibit a high organic content.

Approximately five (5) to eight (8) inches of loose surficial topsoil was encountered in the borings. The topsoil was measured at discrete locations as shown on the Boring Location Map (Figure No. 2) in Appendix “A”. The topsoil thickness measured at the boring locations may or may not be representative of the overall average topsoil thickness at the site. Therefore, it is possible that the actual stripping depth could significantly vary from this data. The data presented should be viewed only as a guide to the minimum stripping depth that will be required to remove organic material at the surface. Additional field exploration by *Patriot* would be required to provide an accurate estimate of the stripping depth. This limited data indicates that a minimum stripping depth will be required to remove the organic material at the surface, followed by the potential for additional stripping and/or scarification and recompaction as may be required to achieve suitable subgrade support. ***Additionally, if saturated conditions exist with the surface soils, light tracked equipment could be required to avoid pushing organics deeper into the suitable subgrade soils.*** A *Patriot* representative should verify the stripping depth at the time grading operations occur.

Prior to the placement of new structural fill, the exposed subgrade must be evaluated by a Patriot representative, which will include proofrolling of the subgrade. Proofrolling should consist of repeated passes of a loaded, pneumatic-tired vehicle such as a tandem-axle dump-truck or scraper. The proofrolling operations should be observed by a *Patriot* representative, and the proofrolling vehicle should be loaded as directed by *Patriot*. Any area found to rut, pump, or deflect excessively should be compacted in-place or, if necessary, undercut and replaced with structural fill, compacted as specified in Section 5.3 “*Structural Fill and Fill Placement Control*”.

Care must be exercised during grading and fill placement operations. ***The combination of heavy construction equipment traffic and excess surface moisture can cause pumping and deterioration of the near surface soils. The severity of this potential problem depends to a great extent on the weather conditions prevailing during***

construction. The contractor must exercise discretion when selecting equipment sizes and also make a concerted effort to control construction traffic and surface water while the subgrade soils are exposed. We recommend that heavy construction equipment (i.e. dump trucks, scrapers, etc.) be rerouted away from the building and pavement areas. If such problems do arise, the operations in the affected area should be halted and the *Patriot* representative contacted to evaluate the condition.

5.2 Foundation Excavations

Excavation will be performed on sandy soils that can be easily disturbed. If the subgrade soil is disturbed, it should be re-compacted or a crushed stone layer should be placed at the subgrade level.

Upon completion of the foundation excavations and prior to the placement of reinforcing steel, a *Patriot* representative should check the exposed subgrade to confirm that a bearing surface of adequate strength has been reached. Any localized soft soil zones encountered at the bearing elevations should be further excavated until adequate support soils are encountered. The cavity should be backfilled with structural fill as defined below, or the footing can be poured at the excavated depth. Structural fill used as backfill beneath footings should be limited to lean concrete, well-graded sand and gravel, or crushed stone placed and compacted in accordance with Section 5.3 “*Structural Fill and Fill Placement Control*”.

If it is necessary to support spread footings on structural fill, the fill pad must extend laterally a minimum distance beyond the edge of the footing. The minimum structural pad width would correspond with a point at which an imaginary line extending downward from the outside edge of the footing at a 1H:2V (horizontal: vertical) slope intersects the surface of the natural soils. For example, if the depth to the bottom of excavation is 4 feet below the bottom of the foundation, the excavation would need to extend laterally beyond the edge of the footing at least 2 feet, as shown in Illustration “A” found at the conclusion of this report.

Excavation slopes should be maintained within all requirements set-forth by the Occupational Safety and Health Standards (OSHA), but specifically Section 1926 Subpart “P” – “*Excavations*”. We recommend that any surcharge fill or heavy equipment be kept at least 5 feet away from the edge of the excavation.

Construction traffic on the exposed surface of the bearing soil will potentially cause some disturbance of the subgrade and consequently loss of bearing capacity. However, the degree of disturbance can be minimized by proper protection of the exposed surface.

5.3 Structural Fill and Fill Placement Control

Structural fill, defined as any fill which will support structural loads, should be clean and free of organic material, debris, deleterious materials, and frozen soils. Samples of the proposed fill materials should be tested prior to initiating the earthwork and backfilling operations to determine the classification, the natural and optimum moisture contents and maximum dry density and overall suitability as a structural fill. **Structural fill should have a liquid limit less than 40 and a plasticity index less than 20.**

All structural fill adjacent to foundations and over foundations, should be compacted to at least 95 percent (%) of its maximum Standard Proctor dry density (ASTM D-698). This minimum compaction requirement should be increased to 100 percent (%) of the maximum Standard Proctor dry density for fill supporting footings, provided these are designed as outlined Section 4.0 *“Design Recommendations”*.

To achieve the recommended compaction of the structural fill, we suggest that the fill be placed and compacted in layers not exceeding 8 inches in loose thickness (the loose lift thickness should be reduced to 6 inches when utilizing small hand compactors) and within the range of 2 percentage (%) points below or above the optimum moisture content value. All fill placement should be monitored by a *Patriot* representative. **Each lift should be tested for proper compaction at a frequency of at least one (1) test every 2,500 square feet (ft²) per lift for the building areas, at least one (1) test every 10,000 square feet (ft²) per lift for the parking and roadway areas, and at a frequency of at least one (1) test for every 50 lineal feet of utility installation.**

5.4 Groundwater Considerations

Groundwater was observed during our field activities at depths between about 2.5 and 8.5 feet below the existing ground surface; which is expected to be above the anticipated foundation excavation depths. Therefore, construction dewatering will be necessary for building foundation excavations on this site.

Groundwater inflow into shallow excavations **above** the groundwater table is expected to be adequately controlled by conventional methods such as gravity drainage and/or

pumping from sumps. More significant inflow can be expected in deeper excavations **below** the groundwater table requiring more aggressive dewatering techniques, such as well or wellpoint systems. For groundwater to have minimal effects on the construction, foundation excavations should be constructed and poured in the same day, if possible.

6.0 EXPLORATIONAL PROCEDURES

6.1 Field Work

A total of four (4) soil borings were drilled, sampled, and tested at the project site ON January 2, 2025, at the approximate locations shown on the Boring Location Map (Figure No. 2) in Appendix "A". The depths that the soil borings were advanced to are shown on the Boring Logs in Appendix "A". All depths are given as feet below the existing ground surface.

The borings were advanced using 3¼ inch inside diameter hollow-stem augers. Samples were recovered in the undisturbed material below the bottom of the augers using the standard drive sample technique in accordance with ASTM D 1586-74. A 2 inch outside diameter by 1³/₈ inch inside diameter split-spoon sampler was driven a total of 18 inches with the number of blows of a 140-pound hammer falling 30 inches recorded for each 6 inches of penetration. The sum of blows for the final 12 inches of penetration is the Standard Penetration Test result commonly referred to as the N-value (or blow-count). Split-spoon samples were recovered at 2.5 feet intervals, beginning at a depth of 1 foot below the existing surface grade, extending to a depth of 10 feet, and at 5 feet intervals thereafter to the termination of the boring.

Water levels were monitored at each borehole location during drilling and upon completion of the boring. The boreholes were backfilled with auger cuttings prior to demobilization for safety considerations.

Upon completion of the boring program, of the samples retrieved during drilling were returned to *Patriot's* soil testing laboratory where they were visually examined and classified. A laboratory-generated log of each boring was prepared based upon the driller's field log, laboratory test results, and our visual examination. Test boring logs and a description of the classification system are included in Appendix "A" in this report. Indicated on each log are the primary strata encountered, the depth of each stratum change, the depth of each sample, the Standard Penetration Test results, groundwater

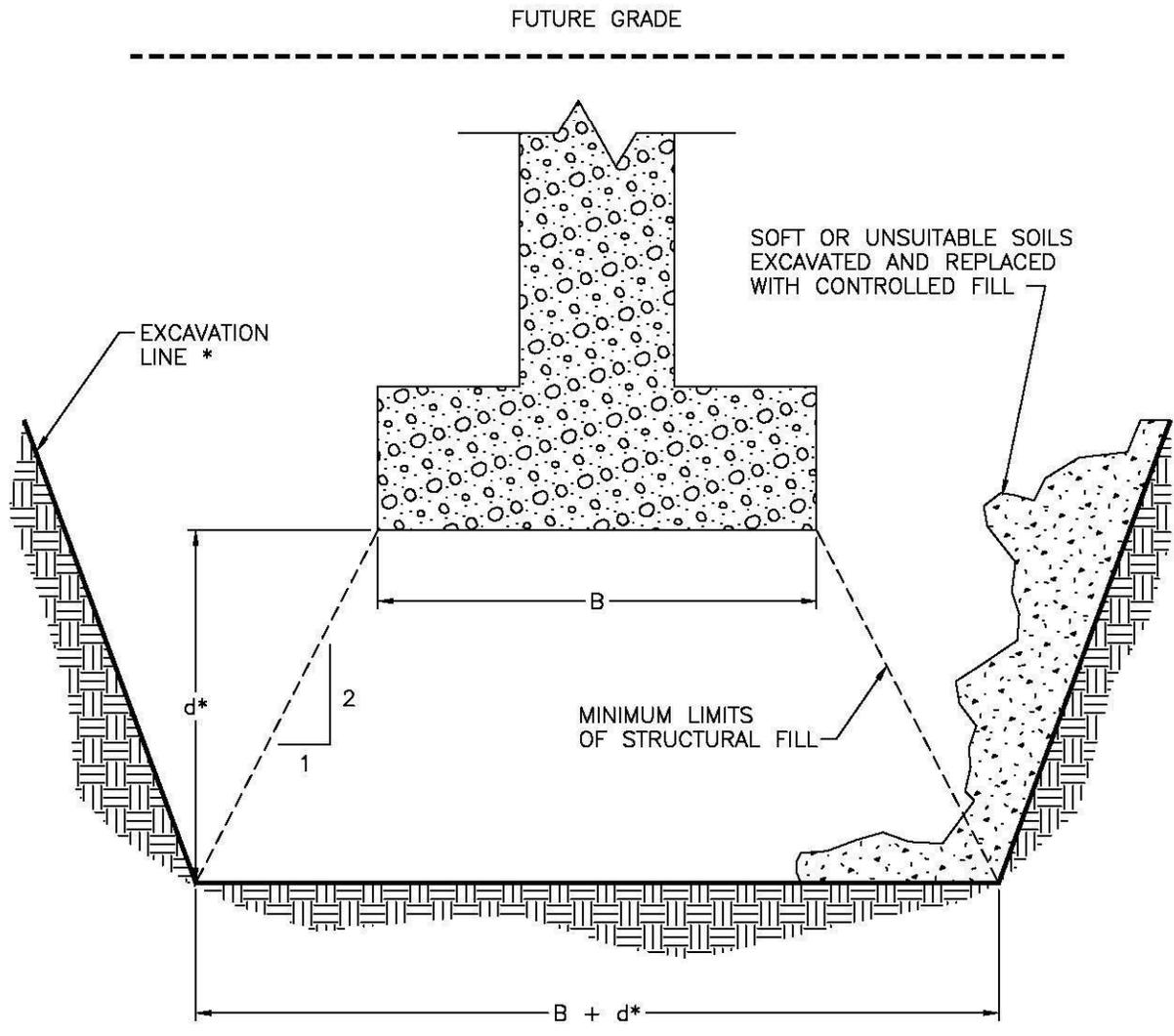
conditions, and selected laboratory test data. The laboratory logs were prepared for each boring giving the appropriate sample data and the textural description and classification.

6.2 Laboratory Testing

Representative samples recovered in the borings were selected for testing in the laboratory to evaluate their physical properties and engineering characteristics. Laboratory analysis included natural moisture content determinations (ASTM D 2216) and an estimate of the cohesive soil strength was determined utilizing a hand penetrometer (q_p). The results of laboratory tests are summarized in Section 3.2 "*General Subsurface Conditions*". Soil descriptions on the boring logs are in accordance with the Unified Soil Classification System (USCS).

7.0 ILLUSTRATIONS

See Illustrations "A" and "B" on the following pages. These illustrations are presented to further visually clarify several of the construction considerations presented in Section 5.2 "*Foundation Excavations*".



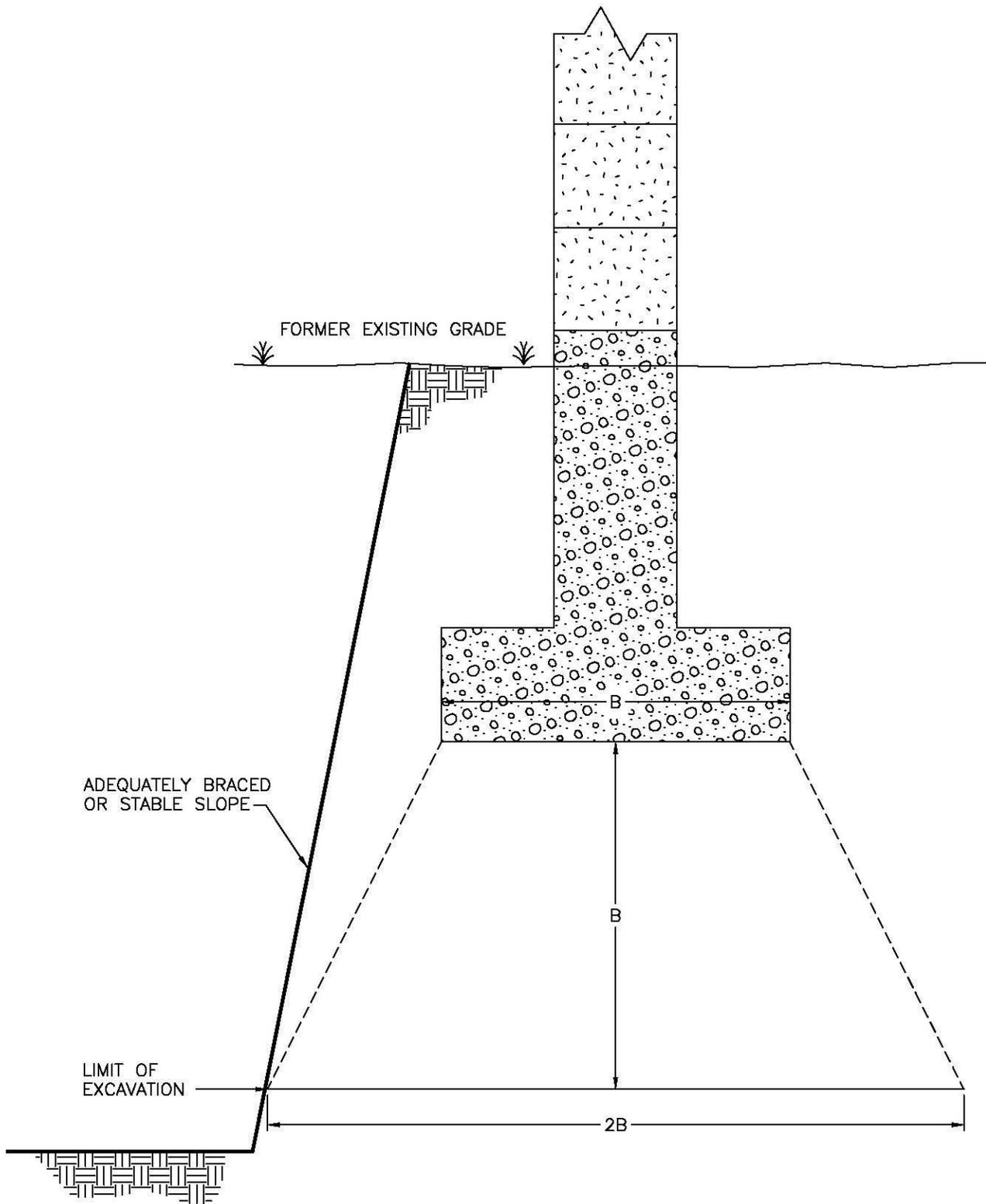
*d IS DEPTH TO SUITABLE SOILS

* IN COMPLIANCE WITH OSHA STANDARDS

**PATRIOT ENGINEERING
and Environmental, Inc.**
Engineering Value for Project Success
Consulting Environmental, Geotechnical
and Materials Engineers

Excavation for Footings
In an Area of Fill
ILLUSTRATION A

job. no.: _____ figure: _____



**PATRIOT ENGINEERING
and Environmental, Inc.**
Engineering Value for Project Success
Consulting Environmental, Geotechnical
and Materials Engineers

Excavation Near Existing
In Use Foundations
ILLUSTRATION B

job. no.:

figure:

APPENDIX A

SITE VICINITY MAP (FIGURE NO. 1)

BORING LOCATION MAP (FIGURE NO. 2)

BORING LOGS

BORING LOG KEY

**UNIFIED SOIL CLASSIFICATION SYSTEM
(USCS)**

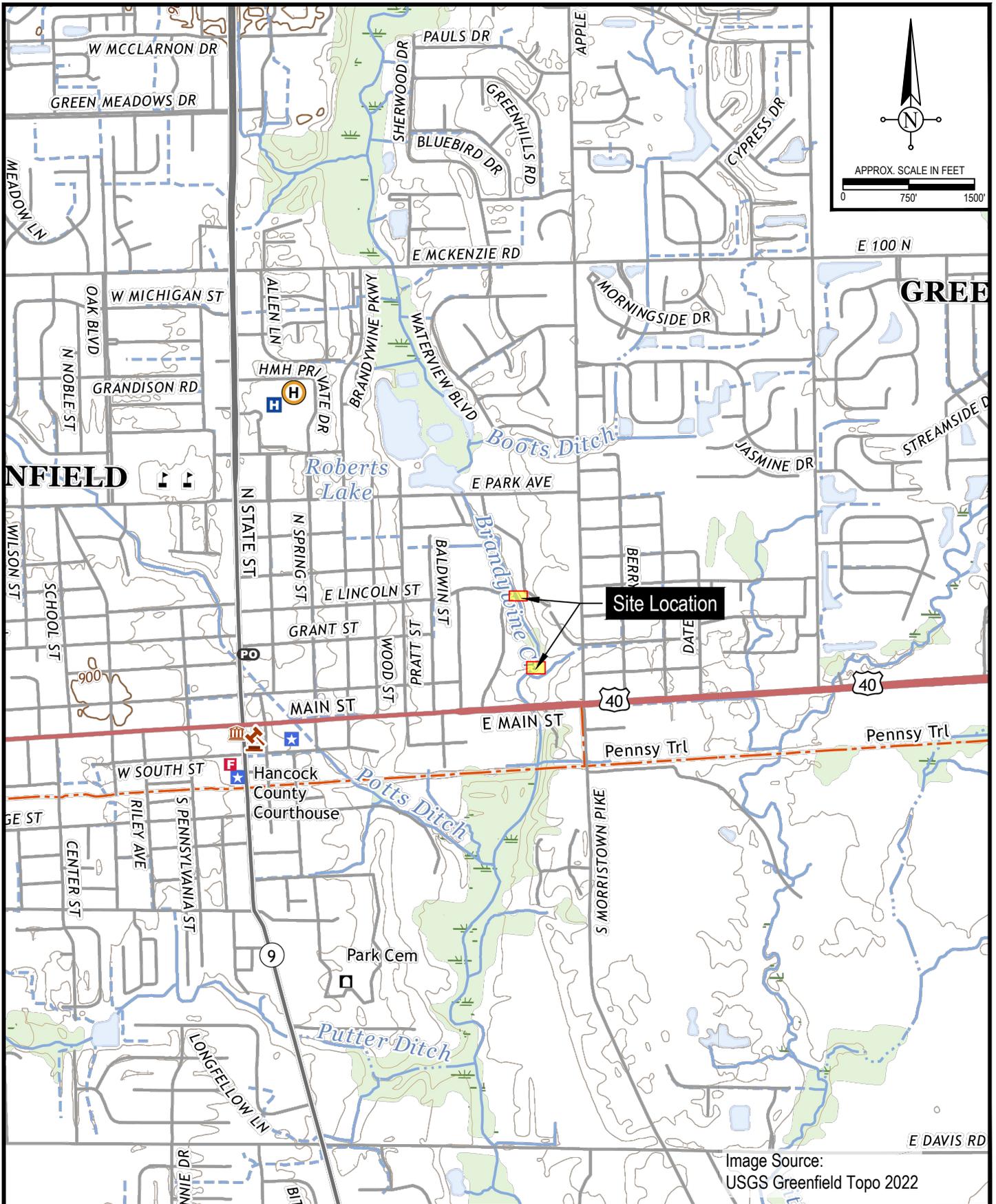


Image Source:
USGS Greenfield Topo 2022



**Patriot Engineering &
Environmental, Inc.**

Project: Riley Park Pedestrian Bridges 26 Apple Street Greenfield, Indiana	
Project Number: 24-1911-01	Drawn By: T. Humphreys
Date: January 27, 2025	Approved: I. Grafe
	DWG: 24-1911-01_geo

Figure 1
Site Vicinity Map



LEGEND
 ● PATRIOT Soil Boring
 B-1 Soil Boring ID



**Patriot Engineering &
 Environmental, Inc.**

NOTES:

1. Boring locations were staked by PATRIOT. All locations are shown as approximate.
2. All locations were determined in the field with references to existing landmarks.
3. Image Source: Bing Maps
4. Scale as shown.

Project: Riley Park Pedestrian Bridges
 26 Apple Street
 Greenfield, Indiana

Project Number: 24-1911-01	Drawn By: T. Humphreys
Date: January 27, 2025	Approved: I. Grafe
	DWG: 24-1911-01_geo

Figure 2
Soil Boring Location Map



LOG OF BORING B-1

Riley Park Pedestrian Bridge
26 Apple Street
Greenfield, Indiana

Client Name : Silver Creek Engineering
Project Number : 24-1911-01G
Logged By : C. Moreno
Start Date : 01/02/2024
Drilling Method : HSA

Driller : C. Bradshaw
Sampling : Splitspoon
Approx. Elevation : +/- feet
Latitude : 39.789211
Longitude : -85.758290

Depth (Feet)	Elevation (Feet)	Water Level	USCS	GRAPHIC	DESCRIPTION	Samples	Rec %	SPT Results	qp tsf	w %	REMARKS
					Water Levels ▼ During Drilling - 6.0 feet ▽ After Completion - 2.5 feet ◆ After 24 Hours - N/A						
0					TOPSOIL (8")						
		▽	CL		Brown and gray, very moist, medium stiff, SILTY CLAY with trace sand and trace organic matter	1	78	2/2/3	0.9	50	
			SP-SM		Gray, slightly moist, very loose, fine to medium grained, SAND with trace silt, trace gravel, trace marl, and interbedded clay seams	2	67	2/2/2			
		▼			Gray, saturated, medium dense, fine to medium grained, SAND with trace silt and trace to little gravel	3	89	4/6/7			Boring caved to 6.5 feet upon auger removal.
			SP-SM			4	89	6/9/11			Heaving sands and gravel encountered at 8.5 feet. Water was introduced into the augers to facilitate sampling.
			CL		Gray, slightly moist, hard, SANDY CLAY with trace gravel and interbedded sand seams	5	89	11/18/32	>6.0	8	
			CL		Gray, slightly moist, hard, SANDY CLAY with trace gravel	6	56	26/50-3"	2.3	11	
			CL		Gray, slightly moist, hard, SANDY CLAY with trace gravel	7	67	9/18/50-5"	4.9	10	
			Boring terminated at 24.9 feet.								

Riley Park Pedestrian Bridge
26 Apple Street
Greenfield, Indiana

Client Name : Silver Creek Engineering
Project Number : 24-1911-01G
Logged By : C. Moreno
Start Date : 01/02/2024
Drilling Method : HSA

Driller : C. Bradshaw
Sampling : Splitspoon
Approx. Elevation : +/- feet
Latitude : 39.786984
Longitude : -85.757354

Depth (Feet)	Elevation (Feet)	Water Level	USCS	GRAPHIC	Water Levels					REMARKS	
					▼ During Drilling - 8.5 feet	▽ After Completion - 3.5 feet	◆ After 24 Hours - N/A	Samples	Rec %		SPT Results
DESCRIPTION											
0				TOPSOIL (5")							
			CL	Gray and brown, moist, medium stiff, SILTY CLAY with trace sand	1	67	3/3/3	0.7	22	Boring caved to 4.5 feet upon auger removal.	
			SP-SM	Brown, slightly moist, loose, fine to medium grained, SAND with trace silt and trace gravel							
		▽	GP-GM	Gray, slightly moist, medium dense, poorly-graded, GRAVEL with trace silt and trace sand	2	11	6/10/11				
			SM	Gray, slightly moist, medium dense, SILTY SAND with interbedded clay seams	3	78	5/6/8				
		▼	SM	Gray, saturated, medium dense, SILTY SAND with interbedded clay seams	4	89	3/6/9				
			SM	Gray, saturated, medium dense, SILTY SAND with trace gravel	5	67	6/10/18				
			CL	Gray, slightly moist, hard, SANDY CLAY with trace gravel	6	67	16/27/34	4.9	9	Heaving sands encountered at 18.5 feet. Water was introduced into the augers to facilitate sampling.	
Auger refusal encountered at 21 feet.											

BORING LOG KEY

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS) FIELD CLASSIFICATION SYSTEM FOR SOIL EXPLORATION

NON-COHESIVE SOILS (Silt, Sand, Gravel, and Combinations)

Density	Field Identification (SPT Blows/ft)	Grain Size Terminology		
		<u>Soil Fraction</u>	<u>Particle Size</u>	<u>US Standard Sieve Size</u>
Very Loose	0 - 4	Boulders	> 12 inches	> 12 inches
Loose	5 - 10	Cobbles	3 - 12 inches	3 - 12 inches
Medium Dense	11 - 30	Gravel: Coarse	¾ - 3 inches	¾ - 3 inches
Dense	31 - 50	Small	4.76 mm - ¾ inch	No. 4 - ¾ inches
Very Dense	> 51	Sand: Coarse	2.00 - 4.76 mm	No. 10 - No. 4
		Medium	0.42 - 2.00 mm	No. 40 - No. 10
		Fine	0.074 - 0.42 mm	No. 200 - No. 40
		Silt	0.005 - 0.074 mm	< No. 200
		Clay	< 0.005 mm	< No. 200

RELATIVE PROPORTIONS FOR SOILS

<u>Descriptive Term</u>	<u>Percent</u>
Trace	1 - 10
Little	11 - 20
Some	21 - 35
And	36 - 50

COHESIVE SOILS (Clay, Silt and Combinations)

<u>Consistency</u>	<u>Unconfined Compressive Strength (tons/ft²)</u>	<u>Field Identification (SPT Blows/ft)</u>
Very Soft	Less than 0.25	0 - 2
Soft	0.25 - < 0.5	3 - 4
Medium Stiff	0.5 - < 1.0	5 - 8
Stiff	1.0 - < 2.0	9 - 15
Very Stiff	2.0 - < 4.0	16 - 30
Hard	Over 4.0	> 30

Classification: Provided on Boring Logs are made by visual inspection.

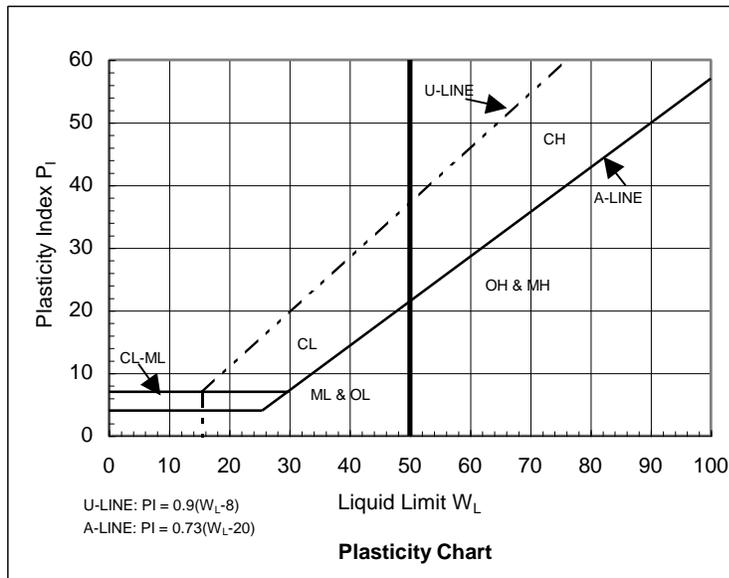
Standard Penetration Test: Driving a 2 inch outer-diameter (O.D.) by 1½ inch inner-diameter (I.D.) split-spoon sampler a total of 18 inches into undisturbed soil with the number of blows of a 140 pound hammer free-falling a distance of 30 inches recorded for each 6 inches of penetration. The sum of blows for the final 12 inches of penetration is the Standard Penetration Test result commonly referred to as the "N"-value (or blow-count).

Strata Changes: In the column "Descriptions" on the Boring Logs the horizontal lines represent strata changes. A solid line (——) represents an observed change, a dashed line (- - - -) represents an estimated change.

Groundwater: Observations were made at the times indicated on the Boring Logs. Fluctuations in the groundwater level should be expected over time due to variations in rainfall and other environmental or physical factors. *Groundwater symbols:* (▼)-observed groundwater level and/or elevation during drilling; (▽)-observed groundwater level and/or elevation upon completion of boring.

Unified Soil Classification System (USCS)

Major Divisions		Group Symbol	Typical Names	Classification Criteria for Coarse-Grained Soils				
Coarse-grained soils (more than half of material is larger than No. 200)	Gravels (more than half of coarse fraction is larger than No. 4 sieve size)	Clean gravels (little or no fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines	$C_u \geq 4$ $1 \leq C_c \leq 3$	$C_u = \frac{D_{60}}{D_{10}}$	$C_c = \frac{D_{30}^2}{D_{10} D_{60}}$	
		GP	Poorly graded gravels, gravel-sand mixtures, little or no fines	Not meeting all gradation requirements for GW ($C_u < 4$ or $1 > C_c > 3$)				
		Gravels with fines (appreciable amount of fines)	GM	$\frac{U}{L}$	Silty gravels, gravel-sand-silt mixtures	Atterberg limits below A line or $P_l < 4$		Above A line with $4 < P_l < 7$ are borderline cases requiring use of dual symbols
			GC	Clayey gravels, gravel-sand-clay mixtures	Atterberg limits above A line or $P_l > 7$			
	Sands (more than half of coarse fraction is smaller than No. 4 sieve size)	Clean sands (little or no fines)	SW	Well-graded sands, gravelly sands, little or no fines	$C_u \geq 6$ $1 \leq C_c \leq 3$	$C_u = \frac{D_{60}}{D_{10}}$	$C_c = \frac{(D_{30})^2}{D_{10} D_{60}}$	
			SP	Poorly graded sands, gravelly sands, little or no fines	Not meeting all gradation requirements for SW ($C_u < 6$ or $1 > C_c > 3$)			
		Sands with fines (appreciable amount of fines)	SM	$\frac{U}{L}$	Silty sands, sand-silt mixtures	Atterberg limits below A line or $P_l < 4$		Limits plotting in hatched zone with $4 \leq P_l \leq 7$ are borderline cases requiring use of dual symbols
			SC	Clayey sands, sand-clay mixtures	Atterberg limits above A line with $P_l > 7$			
	Fine-grained soils (more than half of material is smaller than No. 200)	Silt and clays (liquid limit <50)	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey silts with slight plasticity	<ol style="list-style-type: none"> Determine percentages of sand and gravel from grain size curve. Depending on percentages of fines (fraction smaller than 200 sieve size), coarse-grained soils are classified as follows: Less than 5% - GW, GP, SW, SP More than 12% - GM, GC, SM, SC 5-12% - Borderline cases requiring dual symbols 			
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays				
OL			Organic silts and organic silty clays of low plasticity					
Silt and clays (liquid limit >50)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts					
		CH	Inorganic clays or high plasticity, fat clays					
		OH	Organic clays of medium to high plasticity, organic silts					
Highly organic soils		PT	Peat and other highly organic soils					



APPENDIX B

SEISMIC SITE CLASS EVALUATION

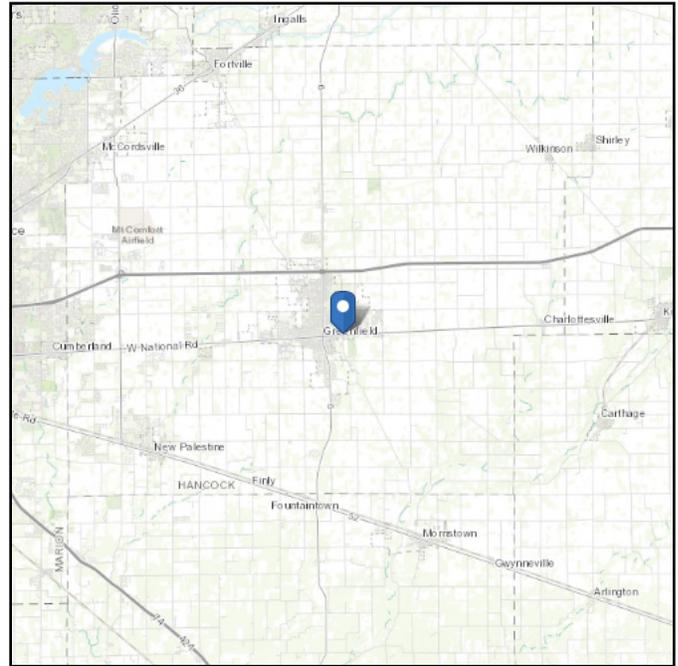
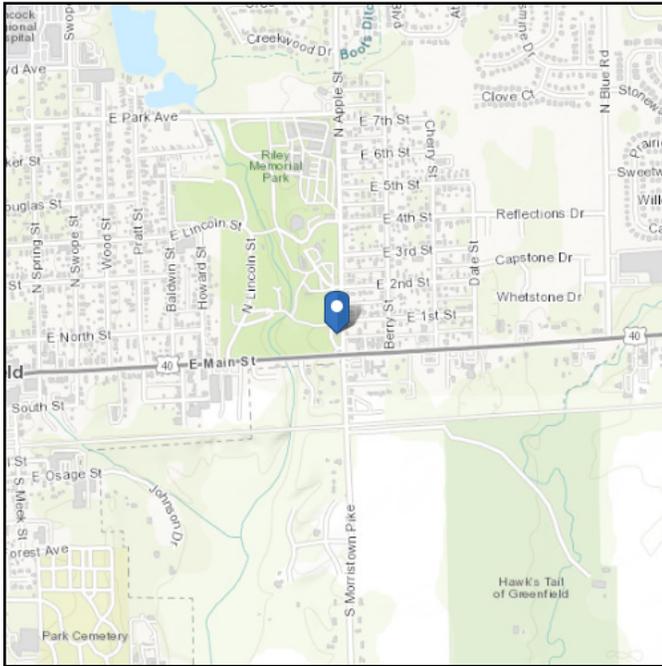


ASCE Hazards Report

Address:
26 Apple St
Greenfield, Indiana
46140

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: C - Very Dense
Soil and Soft Rock

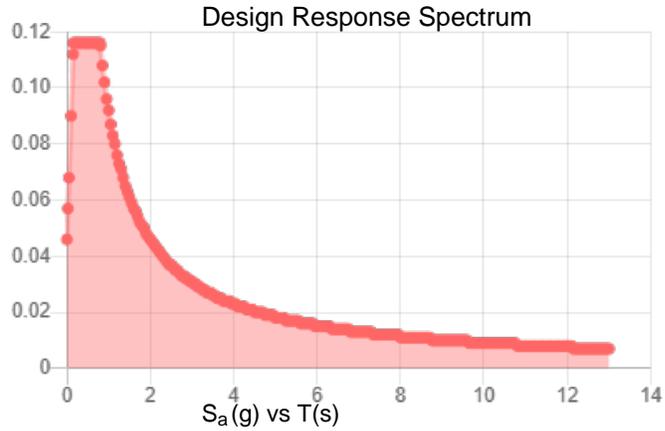
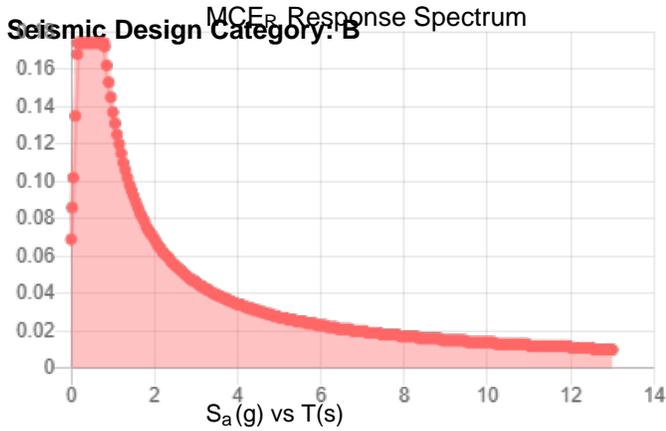
Latitude: 39.786431
Longitude: -85.755713
Elevation: 886.6281868202637 ft
(NAVD 88)



Site Soil Class: C - Very Dense Soil and Soft Rock

Results:

S_s :	0.145	S_{D1} :	0.092
S_1 :	0.081	T_L :	12
F_a :	1.2	PGA :	0.066
F_v :	1.7	PGA _M :	0.079
S_{MS} :	0.174	F_{PGA} :	1.2
S_{M1} :	0.137	I_e :	1
S_{DS} :	0.116		



Data Accessed: Thu Jan 23 2025

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

The ASCE Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE Hazard Tool.

APPENDIX C

GENERAL QUALIFICATIONS

**STANDARD CLAUSE FOR UNANTICIPATED
SUBSURFACE CONDITIONS**

GENERAL QUALIFICATIONS
of Patriot Engineering's Geotechnical Engineering Investigation

This report has been prepared at the request of our client for his use on this project. Our professional services have been performed, findings obtained, and recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. This warranty is in lieu of all other warranties either expressed or implied.

The scope of our services did not include any environmental assessment or investigation for the presence or absence of wetlands, hazardous or toxic materials in the soil, groundwater, or surface water within or beyond the site studied. Any statements in this report or on the test borings logs regarding vegetation types, odors or staining of soils, or other unusual conditions observed are strictly for the information of our client and the owner.

This report may not contain sufficient information for purposes of other parties or other uses. This company is not responsible for the independent conclusions, opinions or recommendations made by others based on the field and laboratory data presented in this report. Should there be any significant differences in structural arrangement, loading or location of the structure, our analysis should be reviewed.

The recommendations provided herein were developed from the information obtained in the test borings, which depict subsurface conditions only at specific locations. The analysis, conclusions, and recommendations contained in our report are based on site conditions as they existed at the time of our exploration. Subsurface conditions at other locations may differ from those occurring at the specific drill sites. The nature and extent of variations between borings may not become evident until the time of construction. If, after performing on-site observations during construction and noting the characteristics of any variation, substantially different subsurface conditions from those encountered during our explorations are observed or appear to be present beneath excavations, we must be advised promptly so that we can review these conditions and reconsider our recommendations where necessary.

If there is a substantial lapse of time between the submission of our report and the start of work at the site, or if conditions have changed due to natural causes or construction operations at or adjacent to the site, we urge that our report be reviewed to determine the applicability of the conclusions and recommendations considering the changed conditions and time lapse.

We urge that Patriot be retained to review those portions of the plans and specifications that pertain to earthwork and foundations to determine whether they are consistent with our recommendations. In addition, we are available to observe construction, particularly the compaction of structural backfill and preparation of the foundations, and such other field observations as may be necessary.

In order to fairly consider changed or unexpected conditions that might arise during construction, we recommend the following verbiage (Standard Clause for Unanticipated Subsurface Conditions) be included in the project contract.

STANDARD CLAUSE FOR UNANTICIPATED SUBSURFACE CONDITIONS

"The owner has had a subsurface exploration performed by a soils consultant, the results of which are contained in the consultant's report. The consultant's report presents his conclusions on the subsurface conditions based on his interpretation of the data obtained in the exploration. The contractor acknowledges that he has reviewed the consultant's report and any addenda thereto, and that his bid for earthwork operations is based on the subsurface conditions as described in that report. It is recognized that a subsurface exploration may not disclose all conditions as they actually exist and further, conditions may change, particularly groundwater conditions, between the time of a subsurface exploration and the time of earthwork operations. In recognition of these facts, this clause is entered in the contract to provide a means of equitable additional compensation for the contractor if adverse unanticipated conditions are encountered and to provide a means of rebate to the owner if the conditions are more favorable than anticipated.

At any time during construction operations that the contractor encounters conditions that are different than those anticipated by the soils consultant's report, he shall immediately (within 24 hours) bring this fact to the owner's attention. If the owner's representative on the construction site observes subsurface conditions which are different than those anticipated by the consultant's report, he shall immediately (within 24 hours) bring this fact to the contractor's attention. Once a fact of unanticipated conditions has been brought to the attention of either the owner or the contractor, and the consultant has concurred, immediate negotiations will be undertaken between the owner and the contractor to arrive at a change in contract price for additional work or reduction in work because of the unanticipated conditions. The contract agrees that the following unit prices would apply for additional or reduced work under the contract. For changed conditions for which unit prices are not provided, the additional work shall be paid for on a time and materials basis."

Another example of a changed conditions clause can be found in paper No. 4035 by Robert F. Borg, published in ASCE Construction Division Journal, No. CO2, September 1964, page 37.

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes.
- B. Related Sections:
 - 1. Section 312000 "Earth Moving" for drainage fill under slabs-on-grade.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. LEED Submittals:
 - 1. Product Data for Credit MR 4: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each product having recycled content.
 - 2. Product Data for Credit IEQ 4.3: For curing and sealing compounds, documentation including printed statement of VOC content.
 - 3. Design Mixtures for Credit ID 1.1: For each concrete mixture containing fly ash as a replacement for portland cement or other portland cement replacements, and for equivalent concrete mixtures that do not contain portland cement replacements.
- C. Design Mixtures: For each concrete mixture.
- D. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement.
- E. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.

1.3 INFORMATIONAL SUBMITTALS

- A. Welding certificates.
- B. Material certificates.
- C. Material test reports.
- D. Floor surface flatness and levelness measurements.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- B. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
- C. Welding Qualifications: Qualify procedures and personnel according to AWS D1.4/D 1.4M, "Structural Welding Code - Reinforcing Steel."
- D. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
 - 1. ACI 301, "Specifications for Structural Concrete," Sections 1 through 5.
 - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- E. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.
- F. Preinstallation Conference: Conduct conference at Project site.

PART 2 - PRODUCTS

2.1 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed.
 - 1. Galvanized Reinforcing Bars: ASTM A 767/A 767M, Class I zinc coated after fabrication and bending.
 - 2. Epoxy-Coated Reinforcing Bars: ASTM A 775/A 775M, epoxy coated, with less than 2 percent damaged coating in each 12-inch (300-mm) bar length.
- B. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, plain, fabricated from as-drawn steel wire into flat sheets.

- C. Deformed-Steel Welded Wire Reinforcement: ASTM A 497/A 497M, flat sheet.
- D. Galvanized-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, plain, fabricated from galvanized-steel wire into flat sheets.
- E. Epoxy-Coated Welded Wire Reinforcement: ASTM A 884/A 884M, Class A coated, Type 1, [plain] [deformed] steel.
- F. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice.

2.3 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
 - 1. Portland Cement: ASTM C 150, Type I, gray.
 - a. Fly Ash: ASTM C 618, Class F or C.
 - b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
 - 2. Blended Hydraulic Cement: ASTM C 595, Type IS, portland blast-furnace slag cement.
- B. Normal-Weight Aggregates: ASTM C 33, graded.
 - 1. Maximum Coarse-Aggregate Size: 1 inch nominal.
 - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Water: ASTM C 94/C 94M and potable.

2.4 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
 - 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 - 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
 - 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
 - 4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
 - 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
 - 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.5 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
- B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.
- F. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, nondissipating, certified by curing compound manufacturer to not interfere with bonding of floor covering.
- G. Clear, Solvent-Borne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.
 - 1. VOC Content: Curing and sealing compounds shall have a VOC content of 200 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- H. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.
 - 1. VOC Content: Curing and sealing compounds shall have a VOC content of 200 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.6 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

2.7 CONCRETE MIXTURES

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
- B. Cementitious Materials: Use fly ash, pozzolan, ground granulated blast-furnace slag, and silica fume as needed to reduce the total amount of portland cement, which would otherwise be used, by not less than 40 percent.
- C. Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Use water-reducing, high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.

2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.

D. Proportion normal-weight concrete mixture as follows:

1. Minimum Compressive Strength: 4000 psi at 28 days.
2. Maximum Water-Cementitious Materials Ratio: 0.48
3. Slump Limit: 4 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch.
4. Air Content: 5.5 percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch nominal maximum aggregate size.

2.8 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.9 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116/C 1116M, and furnish batch ticket information.
1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. [Chamfer] [Do not chamfer] exterior corners and edges of permanently exposed concrete.

3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

3.3 VAPOR RETARDERS

- A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder according to ASTM E 1643 and manufacturer's written instructions.
 - 1. Lap joints 6 inches and seal with manufacturer's recommended tape.

3.4 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
 - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

3.5 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least [one-fourth] <Insert depth> of concrete thickness as follows:
 - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
 - 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch-wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
- D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

3.6 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

1. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
- C. Cold-Weather Placement: Comply with ACI 306.1.
- D. Hot-Weather Placement: Comply with ACI 301.

3.7 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
 1. Apply to concrete surfaces not exposed to public view.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
 1. Apply to concrete surfaces exposed to public view.
- C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:
 1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
 2. Grout-Cleaned Finish: Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix one part portland cement to one and one-half parts fine sand with a 1:1 mixture of bonding admixture and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.
 3. Cork-Floated Finish: Wet concrete surfaces and apply a stiff grout. Mix one part portland cement and one part fine sand with a 1:1 mixture of bonding agent and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Compress grout into voids by grinding surface. In a swirling motion, finish surface with a cork float.
- D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.8 FINISHING FLOORS AND SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraighening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch in one direction.
- C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraighening until surface is left with a uniform, smooth, granular texture.
- D. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
- E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces [indicated] [where ceramic or quarry tile is to be installed by either thickset or thin-set method]. While concrete is still plastic, slightly scarify surface with a fine broom.
 - 1. Comply with flatness and levelness tolerances for trowel-finished floor surfaces.
- F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.

3.9 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
 - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days.
 - 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 - 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall

within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

- a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer.
4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.10 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

3.11 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage a qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

END OF SECTION 033000

SECTION 311000 - SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Clearing and grubbing.
4. Stripping and stockpiling topsoil.
5. Removing above- and below-grade site improvements.
6. Temporary erosion and sedimentation control.

1.2 PREINSTALLATION MEETINGS

- ##### A. Preinstallation Conference: Conduct conference at Project site.

1.3 MATERIAL OWNERSHIP

- ##### A. Except for materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.4 FIELD CONDITIONS

- ##### A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 2. Provide alternate routes around closed or obstructed trafficways if required by Owner or authorities having jurisdiction.
- ##### B. Salvageable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises as directed by staff.
- ##### C. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.
- ##### D. Do not commence site clearing operations until temporary erosion- and sedimentation-control and plant-protection measures are in place.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Section 312000 "Earth Moving."
 - 1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Verify that trees, shrubs, and other vegetation to remain or to be relocated have been flagged and that protection zones have been identified and enclosed according to requirements in plans.
- C. Protect existing site improvements to remain from damage during construction.
 - 1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- A. Provide temporary erosion- and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings and requirements of authorities having jurisdiction.
- B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
- C. Inspect, maintain, and repair erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
- D. Remove erosion and sedimentation controls, and restore and stabilize areas disturbed during removal.

3.3 TREE AND PLANT PROTECTION

- A. Protect trees and plants remaining on-site according to requirements in plans.

3.4 EXISTING UTILITIES

- A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.
 - 1. Arrange with utility companies to shut off indicated utilities.
- B. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others, unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 - 1. Notify Architect not less than two days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without Architect's written permission.

3.5 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.
 - 1. Grind down stumps and remove roots larger than 3 inches in diameter, obstructions, and debris to a depth of 18 inches below exposed subgrade.
 - 2. Use only hand methods or air spade for grubbing within protection zones.
- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
 - 1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to adjacent original ground.

3.6 TOPSOIL STRIPPING

- A. Remove sod and grass before stripping topsoil.
- B. Strip topsoil to depth of 6 inches in a manner to prevent intermingling with underlying subsoil or other waste materials.
- C. Stockpile topsoil away from edge of excavations without intermixing with subsoil or other materials. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.

3.7 SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.

3.8 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.
- B. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials, and transport them to recycling facilities. Do not interfere with other Project work.

END OF SECTION 311000

SECTION 312000 - EARTH MOVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Excavating and filling for rough grading the Site.
2. Preparing subgrades for walks, turf and grasses.
3. Drainage course for concrete slabs-on-grade.
4. Subbase course for concrete pavements.
5. Excavating and backfilling trenches for utilities and pits for buried utility structures.

1.2 DEFINITIONS

A. Backfill: Soil material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.

C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.

F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
2. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation.

G. Fill: Soil materials used to raise existing grades.

- H. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- I. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.
- J. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.
- K. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct pre-excavation conference at Project site.

1.4 INFORMATIONAL SUBMITTALS

- A. Material test reports.

1.5 FIELD CONDITIONS

- A. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth-moving operations.
- B. Do not commence earth-moving operations until plant-protection measures specified on drawings.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D 2487 or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487 or a combination of these groups.
 - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

- D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940/D 2940M; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 294/D 2940M 0; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.
- F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940/D 2940M; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940/D 2940M; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.
- H. Drainage Course: Narrowly graded mixture of crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and zero to 5 percent passing a No. 8 sieve.

2.2 ACCESSORIES

- A. Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility; colored to comply with local practice or requirements of authorities having jurisdiction.
- B. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored to comply with local practice or requirements of authorities having jurisdiction.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations.
- B. Protect and maintain erosion and sedimentation controls during earth-moving operations.
- C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.
 - 1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

3.3 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.
 - 1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
- B. Excavations at Edges of Tree- and Plant-Protection Zones:
 - 1. Excavate by hand or with an air spade to indicated lines, cross sections, elevations, and subgrades. If excavating by hand, use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.

3.4 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.5 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.
- B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.
 - 1. Clearance: 12 inches each side of pipe or conduit.
- C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

1. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

3.6 SUBGRADE INSPECTION

- A. Proof-roll subgrade below pavements with a pneumatic-tired dump truck to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades. Contractor's geotechnical inspector, owner, and owner's representative to be present for proof-roll.
- B. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

3.7 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Architect.
 1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Architect.

3.8 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.9 UTILITY TRENCH BACKFILL

- A. Place backfill on subgrades free of mud, frost, snow, or ice.
- B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- C. Trenches under Footings: Backfill trenches excavated under footings and within 18 inches of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings. Concrete is specified in Section 033000 "Cast-in-Place Concrete."
- D. Initial Backfill: Place and compact initial backfill of satisfactory soil, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the pipe or conduit.

1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.
- E. Final Backfill: Place and compact final backfill of satisfactory soil to final subgrade elevation.
- F. Warning Tape: Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

3.10 SOIL FILL

- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers to required elevations as follows:
 1. Under grass and planted areas, use satisfactory soil material.
 2. Under walks and pavements, use satisfactory soil material.
 3. Under steps and ramps, use engineered fill.
 4. Under building slabs, use engineered fill.
 5. Under footings and foundations, use engineered fill.

3.11 SOIL MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
 1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
 2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.12 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations and uniformly along the full length of each structure.
- C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698:

1. Under structures, building slabs, steps, playground surfacing, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.
2. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 92 percent.
3. Under turf or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent.
4. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

3.13 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
- B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:
 1. Turf or Unpaved Areas: Plus or minus 1 inch.
 2. Walks: Plus or minus 1 inch.
 3. Pavements: Plus or minus 1/2 inch.

3.14 SUBBASE AND BASE COURSES UNDER PAVEMENTS, PLAYGROUND SURFACING, AND WALKS

- A. Place subbase course and base course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place subbase course and base course under pavements and walks as follows:
 1. Shape subbase course and base course to required crown elevations and cross-slope grades.
 2. Place subbase course and base course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
 3. Compact subbase course and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

3.15 FIELD QUALITY CONTROL

- A. Testing Agency: Contractor shall engage a qualified geotechnical engineering testing agency to perform tests and inspections.

- B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.
- C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Architect.
- D. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.16 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
 - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.17 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 312000

SECTION 321313 - CONCRETE PAVING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes Concrete Paving .
 - 1. Walks.
 - 2. Curbs.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each type of product, ingredient, or admixture requiring color selection.
- C. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.3 QUALITY ASSURANCE

- A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities" (Quality Control Manual - Section 3, "Plant Certification Checklist").

1.4 PRECONSTRUCTION TESTING

- A. Preconstruction Testing Service: Engage a qualified independent testing agency to perform preconstruction testing on concrete paving mixtures.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

- A. ACI Publications: Comply with ACI 301 unless otherwise indicated.

2.2 STEEL REINFORCEMENT

- A. Plain-Steel Welded-Wire Reinforcement: ASTM A 1064/A 1064M, fabricated from as-drawn steel wire into flat sheets.
- B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded-wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified.

2.3 CONCRETE MATERIALS

- A. Cementitious Materials: Use the following cementitious materials, of same type, brand, and source throughout Project:
 - 1. Portland Cement: ASTM C 150/C 150M, gray portland cement Type I.
 - 2. Fly Ash: ASTM C 618, Class C or Class F.
 - 3. Slag Cement: ASTM C 989/C 989M, Grade 100 or 120.
 - 4. Blended Hydraulic Cement: ASTM C 595/C 595M, Type IS, portland blast-furnace slag cement.
- B. Normal-Weight Aggregates: ASTM C 33/C 33M, Class 4S, uniformly graded. Provide aggregates from a single source.
- C. Air-Entraining Admixture: ASTM C 260/C 260M.
- D. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.
- E. Water: Potable and complying with ASTM C 94/C 94M.

2.4 CURING MATERIALS

- A. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry or cotton mats.
- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.
- D. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

- a. BASF Corp. - Construction Chemicals.
 - b. Euclid Chemical Company (The); an RPM company.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Dayton Superior.
 - b. Euclid Chemical Company (The); an RPM company.
 - c. Kaufman Products, Inc.
- F. White, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 2, Class B, dissipating.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Dayton Superior.
 - b. Euclid Chemical Company (The); an RPM company.
 - c. Kaufman Products, Inc.

2.5 RELATED MATERIALS

- A. Joint Fillers: ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self-expanding cork in preformed strips.
- B. Slip-Resistive Aggregate Finish: Factory-graded, packaged, rustproof, nonglazing, abrasive aggregate of fused aluminum-oxide granules or crushed emery aggregate containing not less than 50 percent aluminum oxide and not less than 20 percent ferric oxide; unaffected by freezing, moisture, and cleaning materials.

2.6 CONCRETE MIXTURES

- A. Prepare design mixtures, proportioned according to ACI 301 (ACI 301M), for each type and strength of normal-weight concrete, and as determined by either laboratory trial mixtures or field experience.
- B. Cementitious Materials: Use fly ash, pozzolan, slag cement, and silica fume as needed to reduce the total amount of portland cement, which would otherwise be used, by not less than 40 percent.
 1. Fly Ash or Pozzolan: 25 percent.
 2. Slag Cement: 50 percent.

3. Combined Fly Ash or Pozzolan, and Slag Cement: 50 percent, with fly ash or pozzolan not exceeding 25 percent.
- C. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:
 1. Air Content: 6 percent plus or minus 1-1/2 percent.
- D. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.
- E. Synthetic Fiber: Uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than 1.0 lb/cu. yd..
- F. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup.
- G. Concrete Mixtures: Normal-weight concrete.
 1. Compressive Strength (28 Days): 4000 psi.
 2. Maximum W/C Ratio at Point of Placement: 0.45.
 3. Slump Limit: 4 inches, plus or minus 1 inch.

2.7 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Furnish batch certificates for each batch discharged and used in the Work.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Proof-roll prepared subbase surface below concrete paving to identify soft pockets and areas of excess yielding.

3.2 PREPARATION

- A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

- B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 STEEL REINFORCEMENT INSTALLATION

- A. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

3.5 JOINTS

- A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.
- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.
- D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, to match jointing of existing adjacent concrete paving:
- E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

3.6 CONCRETE PLACEMENT

- A. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- B. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.
- C. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- D. Screed paving surface with a straightedge and strike off.
- E. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleedwater appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

3.7 FLOAT FINISHING

- A. General: Do not add water to concrete surfaces during finishing operations.
- B. Float Finish: Begin the second floating operation when bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.
 - 1. Burlap Finish: Drag a seamless strip of damp burlap across float-finished concrete, perpendicular to line of traffic, to provide a uniform, gritty texture.
 - 2. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface, perpendicular to line of traffic, to provide a uniform, fine-line texture.
 - 3. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by striating float-finished concrete surface 1/16 to 1/8 inch deep with a stiff-bristled broom, perpendicular to line of traffic.
- C. Slip-Resistive Aggregate Finish: Before final floating, spread slip-resistive aggregate finish on paving surface according to manufacturer's written instructions.
 - 1. Cure concrete with curing compound recommended by slip-resistive aggregate manufacturer. Apply curing compound immediately after final finishing.
 - 2. After curing, lightly work surface with a steel-wire brush or abrasive stone and water to expose nonslip aggregate.

3.8 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with ACI 306.1 for cold-weather protection.
- C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.
- D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- E. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound, or a combination of these.

3.9 PAVING TOLERANCES

- A. Comply with tolerances in ACI 117 (ACI 117M) and as follows:

1. Elevation: 3/4 inch (19 mm).
2. Thickness: Plus 3/8 inch (10 mm), minus 1/4 inch (6 mm).
3. Surface: Gap below 10-feet- (3-m-) long; unlevelled straightedge not to exceed 1/2 inch (13 mm).
4. Joint Spacing: 3 inches (75 mm).
5. Contraction Joint Depth: Plus 1/4 inch (6 mm), no minus.
6. Joint Width: Plus 1/8 inch (3 mm), no minus.

3.10 REPAIR AND PROTECTION

- A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.
- B. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- C. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 321313

SECTION 321373 - CONCRETE PAVING JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Cold-applied joint sealants.
 2. Hot-applied joint sealants.
 3. Joint-sealant backer materials.
 4. Primers.

1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each kind and color of joint sealant required.
- C. Paving-Joint-Sealant Schedule: Include the following information:
1. Joint-sealant application, joint location, and designation.
 2. Joint-sealant manufacturer and product name.
 3. Joint-sealant formulation.
 4. Joint-sealant color.

1.4 INFORMATIONAL SUBMITTALS

- A. Product certificates.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backing materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

2.2 COLD-APPLIED JOINT SEALANTS

- A. Single-Component, Nonsag, Silicone Joint Sealant: ASTM D 5893/D 5893M, Type NS.
- B. Single-Component, Self-Leveling, Silicone Joint Sealant: ASTM D 5893/D 5893M, Type SL.

2.3 JOINT-SEALANT BACKER MATERIALS

- A. Round Backer Rods for Cold- and Hot-Applied Joint Sealants: ASTM D 5249, Type 1, of diameter and density required to control sealant depth and prevent bottom-side adhesion of sealant.
- B. Round Backer Rods for Cold-Applied Joint Sealants: ASTM D 5249, Type 3, of diameter and density required to control joint-sealant depth and prevent bottom-side adhesion of sealant.
- C. Backer Strips for Cold- and Hot-Applied Joint Sealants: ASTM D 5249; Type 2; of thickness and width required to control joint-sealant depth, prevent bottom-side adhesion of sealant, and fill remainder of joint opening under sealant.

2.4 PRIMERS

- A. Primers: Product recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated.

PART 3 - EXECUTION

3.1 INSTALLATION OF JOINT SEALANTS

- A. Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated unless more stringent requirements apply.
- B. Cleaning of Joints: Clean out joints immediately to comply with joint-sealant manufacturer's written instructions.
- C. Joint Priming: Prime joint substrates where indicated or where recommended in writing by joint-sealant manufacturer.
- D. Joint-Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions.
- E. Install joint-sealant backings to support joint sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of joint-sealant backings.
 - 2. Do not stretch, twist, puncture, or tear joint-sealant backings.

3. Remove absorbent joint-sealant backings that have become wet before sealant application and replace them with dry materials.
- F. Install joint sealants immediately following backing installation, using proven techniques that comply with the following:
1. Place joint sealants so they fully contact joint substrates.
 2. Completely fill recesses in each joint configuration.
 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- G. Tooling of Nonsag Joint Sealants: Immediately after joint-sealant application and before skinning or curing begins, tool sealants according to the following requirements to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint:
1. Remove excess joint sealant from surfaces adjacent to joints.
 2. Use tooling agents that are approved in writing by joint-sealant manufacturer and that do not discolor sealants or adjacent surfaces.
- H. Provide joint configuration to comply with joint-sealant manufacturer's written instructions unless otherwise indicated.
- I. Clean off excess joint sealant as the Work progresses, by methods and with cleaning materials approved in writing by joint-sealant manufacturers.

END OF SECTION 321373

SECTION 329200 - TURF AND GRASSES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Seeding.

1.2 DEFINITIONS

- A. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- B. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.4 INFORMATIONAL SUBMITTALS

- A. Certification of grass seed.
1. Certification of each seed mixture for turfgrass sod.
- B. Product certificates.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful turf establishment.
1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 2. Personnel Certifications: Installer's field supervisor shall have certification in one of the following categories from the Professional Landcare Network:
 - a. Landscape Industry Certified Technician - Exterior.
 - b. Landscape Industry Certified Lawncare Manager.

- c. Landscape Industry Certified Lawncare Technician.
- 3. Pesticide Applicator: State licensed, commercial.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable.

PART 2 - PRODUCTS

2.1 SEED

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Rules for Testing Seeds" for purity and germination tolerances.
- B. Seed Species:
 - 1. Quality: State-certified seed of grass species as listed below for solar exposure.
 - 2. Quality: Seed of grass species as listed below for solar exposure, with not less than 85 percent germination, not less than 95 percent pure seed, and not more than 0.5 percent weed seed:
 - 3. Full Sun: See drawings.
- C. Grass-Seed Mix: Proprietary seed mix as follows:
 - 1. Products: Subject to compliance with requirements, provide seed mix in drawings.
- D. Native Seed Mix: Proprietary seed mix as follows:
 - 1. Products: Subject to compliance with requirements, provide seed mix in drawings, Available from Spence Restoration Nursery, or approved equal.

2.2 FERTILIZERS

- A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
 - 1. Composition: 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
- B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.

2.3 MULCHES

- A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.
- B. Sphagnum Peat Mulch: Partially decomposed sphagnum peat moss, finely divided or of granular texture, and with a pH range of 3.4 to 4.8.
- C. Muck Peat Mulch: Partially decomposed moss peat, native peat, or reed-sedge peat, finely divided or of granular texture, with a pH range of 6 to 7.5, and having a water-absorbing capacity of 1100 to 2000 percent, and containing no sand.
- D. Compost Mulch: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1-inch sieve; soluble salt content of 2 to 5 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:

2.4 PESTICIDES

- A. General: Pesticide, registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

PART 3 - EXECUTION

3.1 TURF AREA PREPARATION

- A. General: Prepare planting area for soil placement and mix planting soil.
- B. Reduce elevation of planting soil to allow for soil thickness of sod.
- C. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.
- D. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.2 SEEDING

- A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph.

1. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
 2. Do not use wet seed or seed that is moldy or otherwise damaged.
 3. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.
- B. Sow seed at a total rate of 3 to 4 lb/1000 sq. ft..
- C. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray.
- D. Protect seeded areas with slopes not exceeding 1:6 by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/acre to form a continuous blanket 1-1/2 inches in loose thickness over seeded areas.
1. Anchor straw mulch by crimping into soil with suitable mechanical equipment.
- E. Protect seeded areas from hot, dry weather or drying winds by applying compost mulch within 24 hours after completing seeding operations. Soak areas, scatter mulch uniformly to a thickness of 3/16 inch, and roll surface smooth.

3.3 TURF MAINTENANCE

- A. General: Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.
- B. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one-third of grass height. Remove no more than one-third of grass-leaf growth in initial or subsequent mowings. Contractor is responsible for turf maintenance until such time as it is approved as satisfactory (see section below) or Substantial Completion, whichever comes later.

3.4 SATISFACTORY TURF

- A. Turf installations shall meet the following criteria as determined by Architect:
1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches .
- B. Use specified materials to reestablish turf that does not comply with requirements, and continue maintenance until turf is satisfactory.

END OF SECTION 329200