



## STATE OF INDIANA

Eric J. Holcomb, Governor

### NOTICE TO BIDDERS

BY STATE OF INDIANA DEPARTMENT OF ADMINISTRATION. PUBLIC WORKS DIVISION FOR A PUBLIC WORKS CONSTRUCTION PROJECT ESTIMATED AT ONE HUNDRED FIFTY THOUSAND DOLLARS OR ABOVE

SEALED BIDS FOR:

**PROJECT NO. ENG2003722634**

**Brown County State Park**

**Repair of Historic Stone Walls**

**Brown County**

will be received from Contractors, holding a current Certificate of Qualification, at the Bid Desk, Department of Administration, Public Works Division, 402 W. Washington St., Room W467, Indianapolis, Indiana, 46204 until 1:31 P.M. (Indianapolis Time), September 23, 2020, after which all bids will be publicly opened and read in the appropriate bid room.

State Certified Minority and Women-Owned firms are encouraged to submit bids on this project as a prime contractor or through a prime contractor.

Copies of the detailed Instructions to Bidders and Drawings and/or Specifications dated August 2018, may be obtained from: Department of Natural Resources Division of Engineering Website <http://www.in.gov/dnr/engineer/2908.htm> for a non-refundable fee of \$0.00. Contractors are responsible for checking this website for additional documents or addenda that may be added before the bid opening date.

Bids shall be taken from Prime Contractors pre-qualified by the Public Works Certification Board in the following classification/s: **1542.01 Institutional Buildings (Hospitals, Schools, Prisons) or 1741.04 Stone Work.**

The Specified construction period is **190 calendar days.** The State of Indiana reserves the right to reject any and all bids.

A goal of 7% MBE and 5% WBE has been set for this project.

**Project Manager:**

Matt Pore (317) 234-0176  
mpore@dnr.IN.gov

Dated: August 24, 2020

**Director of Public Works:**

Robert Grossman, Director

**Pre-Bid Information:**

**Pre-Bid Meeting is**

September 9, 2020 @ 10:30 a.m. Eastern Time at the Upper Shelter, Brown County State Park, Nashville, IN

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## INSTRUCTIONS TO BIDDERS

### PROJECT ESTIMATED BY DEPARTMENT OF ADMINISTRATION, PUBLIC WORKS DIVISION TO BE BID AT ONE HUNDRED FIFTY THOUSAND DOLLARS (\$150,000) AND ABOVE

#### 01 GENERAL

- A. This project is estimated by the Public Works Division, Indiana Department of Administration (the Owner), as stated in the Notice to Bidders, at One Hundred Fifty Thousand Dollars (\$150,000) and above.
- B. QUALIFICATION BY THE CERTIFICATION BOARD IS REQUIRED FOR THIS PROJECT PRIOR TO BID OPENING DATE. For information and procedure contact Executive Secretary, Certification Board, Indiana Department of Administration, 402 W. Washington St., Room W467, Indianapolis, Indiana 46204 or phone (317) 232-3005.

#### 02 PROJECT NUMBER, DESCRIPTION AND LOCATION is as stated in the Notice to Bidders.

#### 03 TITLE AND DEFINITIONS

Said building and/or land upon which it stands is the property of the State of Indiana. All references to the title owner of said property hereinafter will be by the term "State" and all references to the person, firm, or corporation awarded the contract for the project will be by the term "Contractor". All references to Designer shall refer to the consulting person or firm employed to contract with the Public Works Division, Indiana Department of Administration to provide architectural, engineering or other consulting services for the project, or to the Public Works Division. The preparation and issuance of contracts for this project are the responsibility of the Commissioner of the Indiana Department of Administration acting with approval of the Governor.

Contract: A written agreement between two or more parties enforceable by law.

Contractor: A person who has entered into or seeks to enter into a contract with Public Works Division.

Prime Contractor: A person or business which is primarily responsible for providing goods and service or performing a specific service, etc. under contract. A prime contractor can also be a Minority Business Enterprise.

Subcontractor: A person or a business who has a direct contract with a prime contractor who is under contract to provide goods and services or perform a specific service.

Joint Venture: An association of two or more businesses to carry out a single business enterprise for profit for which purpose they combine their property, capital, efforts, skills and knowledge.

Manufacturer: A supplier that produces goods from raw materials or substantially alters them before resale.

Minority or Women Business Enterprise (M/WBE): A business concern which is certified as at least fifty-one percent (51%) owned and controlled by a woman or women or, one or more of the individuals classified as a minority group which includes: African Americans, Hispanic Americans, Asian Americans, and other racial minorities.

Supplier: Any person or entity engaged to furnish goods, materials and/or equipment, but no on-site labor, is capable of furnishing such goods, materials and/or equipment either directly from its own stock or by ordering materials and/or equipment directly from a manufacturer, and is engaged to furnish such goods, materials and/or equipment directly to a prime contractor or one of its subcontractors.

#### 04 PRE-BIDDING, BIDDING AND POST BIDDING REQUIREMENTS

- A. The Director, Public Works Division will authorize the Designer to issue bidding documents, construction documents and addenda to bidders.
- B. It is recommended that all Bidders visit the site prior to submitting bid, and become thoroughly familiar with the existing site conditions and work to be performed, as indicated in the bidding documents, construction documents and addenda. Extra compensation or extension of time will not be allowed for failure to examine the site prior to bidding.
- C. During the bidding period, should questions arise as to the meaning of any part of the bidding documents, construction documents or addenda that may affect the Bidder, the Bidder shall contact the Designer and/or Public Works Division and submit a written request for clarification. The Designer and/or Public Works Division will make such clarification only by written Addendum that will be mailed to each document holder or may be obtained at the office of the Designer and/or Public Works Division. By submitting a bid, the Bidder acknowledges procurement of all Addenda. No written request for clarification will be accepted by the Designer and/or Public Works Division later than fourteen (14) calendar days prior to the scheduled bid date.

- D. Bid as described in Contractor's Bid (DAPW 13) shall include Base Bid (in figures and in words) and Alternates as specified in Section entitled Alternates. In verifying bids, word amounts shall have precedence over figure amounts.
- E. Alternate amount(s) shall be listed where indicated. Add Alternates are not to be included in the Base Bid Scope of Work. Deduct Alternates are to be included in the Base Bid Scope of Work. The bid form must be signed. Note that by signing the bid document, the Bidder is acknowledging the procurement of all addenda and is certifying that the bid recognizes all items in all addenda.
- F. A bid by a corporation shall be in the legal name of the corporation followed by the word "by" and the signature of the president. The secretary of the corporation shall sign indicating his/her authority to sign. A Certificate of Corporate Resolution (DAPW 41) is required with and as a part of the bid if anyone other than the president of the corporation is signing bid documents.
- G. *The Form 96A-Questionnaire and Financial Statement is no longer required to be submitted.* The Director, Public Works Division reserves the right to request additional financial information or contractor experience as a basis for rejection of bid or award of contract.
- H. Each Bidder must file with his bid a Non-Collusion Statement (DAPW-121) signed by the same authorized person(s) who signed the bid.
- I. Each Bidder must file with his bid a completely filled in and executed Bid Bond (DAPW 15A) in accordance with IC 4-13.6-7-5. The bid bond penal sum shall be the minimum amount of five percent (5%) of the bid including all additive alternates.
- J. Each Bidder must file with his bid a completed M/WBE Participation Plan and Good Faith Effort Work Sheet (DAPW 26SUP2). Refer to the Supplement to the General Conditions for M/WBE Participation Policy (DAPW 26SUP1) for specific requirements.
- K. Each Bidder must file with his bid, the completed Contractor's Affidavit of Subcontractors Employed (DAPW 12) only if he proposes to perform any work with a subcontract amount of \$150,000.00 or more.
- L. Each bidder must file with his bid an Employee Drug Testing Plan (DAPW 150A) in accordance with IC 4-13-18 (P.L. 160-2006), or evidence that the contractor is subject to a collective bargaining agreement containing drug testing requirements that comply with IC 4-13-18.
- M. Each Bidder must include his Federal ID number or Social Security number on page 1 of 3 of the Bid Form (DAPW 13). All required bid documents must contain original hand written signatures.
- N. All documents required by statute, rule or these instructions to be included in the bid, must be submitted together in a single sealed envelope, plainly marked with the Name of Bidder, Project Identification, Project Number, Bid Time and Bid Date. Bids shall be rejected if all required documents are not in the single sealed envelope.
- O. A Bidder with proper identification may withdraw his bid at any time prior to the scheduled time for receipt of the bids; however, no bid may be withdrawn without written consent of the Director, Public Works Division for a *period of sixty (60) days after the date of the bid opening*, or unless extended in accordance with IC 4-13.6-6-4. Bids received after the designated due time for any reason, shall be rejected and returned unopened to the Bidder. The Director, Public Works Division reserves the right to reject any or all bids.
- P. Subcontractors whose work will equal or exceed One Hundred Fifty Thousand Dollars (\$150,000.00) must attain a Certificate of Qualification by the Certification Board before commencing any work on this project. Note paragraph 01. (B) above.
- Q. All Bidders (corporations) must be in good standing with the Indiana Secretary of State.

05 SIGNATURE AFFIDAVIT

- A. A Signature Affidavit (DAPW-14) containing the Bidder's authorized signature(s), properly notarized, may be submitted as a signature supplement to all other bid documents, except the bid bond, including:
  1. Contractor's Bid (DAPW 13)
  2. Non-Collusion Statement (DAPW-121)
  3. Contractor's Affidavit of Subs Employed (DAPW 12)
  4. M/WBE Participation Plan and Good Faith Effort Work Sheet (DAPW 26 SUP 2)
- B. All documents herein before required with the bid may be unsigned if the signature affidavit is submitted, except for the BID BOND. BIDDER MUST SIGN THE BID BOND.



NOTE: SIGNING THE SIGNATURE AFFIDAVIT OR BID FORM IS ACKNOWLEDGMENT OF PROCUREMENT OF ALL ADDENDA AND CERTIFICATION BY BIDDER THAT THE BID RECOGNIZES ALL ITEMS IN ALL ADDENDA.

06      WORK BY CONTRACTOR

The Contractor shall perform a minimum of 15% of the value of work (measured in dollars of the total contract price) with his own forces, and not more than 85% of the value of work is to be subcontracted.

07      SUBSTITUTIONS

The materials, products, systems and equipment described in the bidding documents, construction documents and addenda establish a standard or required function, dimension, appearance and quality that shall also be met by any proposed substitution. No substitution by manufacturer, or trade name of product named, or of a quality specified will be considered unless written request for approval has been submitted by the Bidder and has been received by the Designer and/or Public Works Division at least fourteen (14) calendar days prior to the date for receipt of bids. Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including drawings, cuts, performance and test data and any other information necessary for an evaluation. A statement setting forth any changes in other materials, equipment or work that incorporation of the substitute would require shall be included. The burden of proof of the merit of the proposed substitute is upon the proposer. The Designer and/or Public Works Division decision of approval or disapproval of the proposed substitution shall be final. Products, materials or systems not specified or approved prior to bidding, shall not be accepted for use in this project. All such substitutions accepted shall be acknowledged by addendum. See paragraph. 04 (C).

08      NONDISCRIMINATION

Pursuant to IC 22-9-1-10, the Contractor and subcontractors, if any, shall not discriminate against any employee or applicant for employment, to be employed in the performance of this contract, with respect to his hire, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to employment, because of his race, religion, color, sex, disability, national origin, or ancestry. Breach of this covenant may be regarded as a material breach of the contract. Pursuant to IC 5-16-6-1, the contractor agrees:

- A. that in the hiring of employees for the performance of work under this contract or any subcontract hereunder, no contractor, or subcontractor, nor any person acting on behalf of such contractor or subcontractor shall, by reason of race, religion, color, sex, disability, national origin or ancestry, discriminate against any citizen of the State of Indiana who is qualified and available to perform the work to which the employment relates; and
- B. that no contractor, subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee hired for the performance of work under this contract on account of race, religion, color, sex, national origin or ancestry; and
- C. that there may be deducted from the amount payable to the contractor by the State of Indiana or by any municipal corporation thereof, under this contract, a penalty of five dollars (\$5.00) for each person for each calendar day during which such person was discriminated against or intimidated in violation of the provisions of the contract; and
- D. that this contract may be canceled or terminated by the State of Indiana or by any municipal corporation thereof, and all money due or to become due hereunder may be forfeited, for a second or any subsequent violation of the terms or conditions of this section of the contract.

09      EMPLOYMENT ELIGIBILITY VERIFICATION

The Contractor affirms under the penalties of perjury that he/she/it does not knowingly employ an unauthorized alien.

The Contractor shall enroll in and verify the work eligibility status of all his/her/its newly hired employees through the E-Verify program as defined in IC 22-5-1.7-3. The Contractor is not required to participate should the E-Verify program cease to exist. Additionally, the Contractor is not required to participate if the Contractor is self-employed and does not employ any employees.

The Contractor shall not knowingly employ or contract with an unauthorized alien. The Contractor shall not retain an employee or contract with a person that the Contractor subsequently learns is an unauthorized alien.

The Contractor shall require his/her/its subcontractors, who perform work under this contract, to certify to the Contractor that the subcontractor does not knowingly employ or contract with an unauthorized alien and that the subcontractor has enrolled and is participating in the E-Verify program. The Contractor agrees to maintain this certification throughout the duration of the term of a contract with a subcontractor.

The State may terminate for default if the Contractor fails to cure a breach of this provision no later than thirty (30) days after being notified by the State.

The contractor shall submit, before work begins the E-Verify case verification number for each individual who is required to be verified under IC 22-5-17. An individual who is required to be verified under IC 22-5-17 whose final case result is final nonconfirmation may not be employed on the public works project.

A contractor may not pay cash to any individual employed by the contractor for work done by the individual on the public works project.

A contractor 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. A contractor must be in compliance with IC 22-3-5-1 and IC 22-3-7-34. A contractor must be in compliance with IC 22-4-1 through IC 22-4-395. A contractor must be in compliance with IC 4-13-18-1 through IC 4-13-18-7.

## 10 NOTICE OF AWARD

- A. Prior to execution of the Contract, in accordance with IC 4-13.6-5-2, the Director of Public Works may require additional submittals from Bidder/s to clarify contractor's experience and plans for performing the proposed work. Submittals which may be required include a critical path construction schedule which coordinates all significant tasks sequences and durations; schedule of values, and documentation of efforts to include minority and woman owned businesses in the proposed work. The Director may require Bidder/s to provide a comprehensive list of subcontractors and suppliers within 24 hours of receipt of bids.
- B. Prior to execution of the Contract, the successful Bidder shall furnish a completed Domestic Steel Affidavit (DAPW-11) to Public Works Division, Indiana Department of Administration as part of the contract. The Domestic Steel Affidavit is included for Bidder's review but need not be submitted at the time of the bid opening. Definition of Steel Products:
- "Steel products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated, or otherwise similarly processed, or processed by a combination of two (2) or more of such operations, from steel made in the United States by the open hearth, basic oxygen, electric furnace, Bessemer or other steel making process.
- C. Prior to execution of the Contract, the successful Bidder shall furnish a completed Contractor's Bond for Construction (DAPW 15) (combined performance and payment bond) to Public Works Division, Department of Administration as part of the contract. The Bond form is included for Bidder's review but need not be submitted at the time of the bid opening.
- D. Prior to execution of the Contract, the successful Bidder shall furnish a completed Contractor's Certificate of Insurance (DAPW 16) to Public Works Division, Department of Administration as part of the contract. The Insurance form is included for Bidder's review but need not be submitted at the time of the bid opening.
- E. Prior to execution of the Contract, the State of Indiana will issue to the successful Bidder a letter stating that his bid was the lowest responsible and responsive bid and that the enclosed contract document is submitted to him for his consideration. If he finds it in accordance with the bid documents, it is to be returned to Public Works Division by certified mail or in person within ten (10) calendar days after receipt for further execution and with the caution that a contract will not exist until it is signed by all signatories required. Failure to execute the proper contract and furnish the ancillary documents shall constitute reason to surrender the bid bond.
- F. Concurrent with execution of the Contract, the successful Bidder may be required to furnish executed copies of Contractor-Subcontractor agreements as required in Article 5 of the General Conditions.

11 SUMMARY

All required bid documents must contain original hand written signatures. Complete documents to be submitted with this bid:

- A. The Bid Bond (DAPW-15A) must be signed by both the Bidder and Bonding Company. The Bonding Company must also attach a Power of Attorney. Bid bond information, may be on the Bonding Company's standard form.
- B. The Contractor's Bid (DAPW-13)
  - Page 1: State the amount of the bid in figures and words.
  - Page 2: State the amount of the alternate(s), indicate add, deduct or no change (READ CAREFULLY).
  - Page 3: Authorized signature of the Company. If the signature affidavit is completed and submitted with the bid, this page must be submitted but need not be signed or notarized.
- C. The Signature Affidavit (DAPW-14) must contain the completed authorized signatures properly notarized and submitted with the bid as a supplement.

This Signature Affidavit shall fulfill all of the signature requirements. NOTE: The Signature Affidavit does not apply to the Bid Bond (DAPW 15A). The Bid Bond document must be fully completed with all required signatures and submitted with the bid.
- D. The Non-Collusion Statement (DAPW-121) must be signed by the same authorized person(s) who signed the bid documents. If the signature affidavit is completed and submitted with bid, this form shall be submitted, but need not be signed.
- E. For corporations, if anyone other than the president of the corporation signs, a Certificate of Corporate Resolution (DAPW 41) giving signature authority for the signer must be included.
- F. M/WBE Participation Plan and M/WBE Good Faith Effort Work Sheet (DAPW 26SUP2) must be completed and signed by the same authorized person who signed the bid documents.
- G. The completed Contractor's Affidavit of Subcontractors Employed (DAPW-12) whose subcontract amount will be \$150,000.00 or more.
- H. The completed plan for Contractor's Employee Drug Testing Plan (or statement of collective bargaining agreement).
- I. One copy only of the Bid Documents is required. Bidders may remove and use the Documents included in the project specifications or use reproductions of the Documents.

12 INDIVIDUAL BIDS SHALL BE REJECTED BY THE DIRECTOR, PUBLIC WORKS DIVISION FOR THE FOLLOWING REASONS (IC 4-13.6-5-2; IC 4-13.6-6-1; 25 IAC 2-6-5)

- A. If the bid envelope is not sealed at the time of submission; if the envelope does not clearly identify the project number and description; if the name of the Bidder is not clearly indicated on the outside of the envelope and/or if the envelope is not date and time stamped by Public Works Division prior to the stated time for receipt of bids.
- B. If the estimated base bid cost exceeds \$150,000.00 and the bidding contractor is not certified by Public Works Certification Board to offer bids in one of the specified categories.
- C. If the bidding contractor is under suspension by the Director of Public Works or by the Public Works Certification Board.
- D. If the bidding contractor is a trust and does not identify all beneficiaries and empowered settlors of the trust.
- E. If the contractor's drug plan is not included in the bid documents pursuant to and complies with IC 4-13-18

13 INDIVIDUAL BIDS MAY BE REJECTED BY THE DIRECTOR, PUBLIC WORKS DIVISION FOR THE FOLLOWING REASONS (25 IAC 2-6-5)

- A. If the Contractor's Bid (DAPW 13) Non-Collusion Statement (DAPW 121) and/or Bid Bond (DAPW 15A) are not signed and notarized as required by these instructions, or the Signature Affidavit (DAPW 14) and the Bid Bond (DAPW 15A) are not signed and notarized as allowed as an alternative.
- B. If all required bid or alternate(s) amounts, or unit prices are not submitted with the bid when specifically called for by the specifications issued for the project.

- C. When the Bidder adds any provision reserving the right to accept or reject the award, or if the Bidder adds conditions or alternates to his bid not requested (voluntary alternates), or if there are unauthorized additions or irregularities of any kind which tend to make the proposal incomplete, indefinite or ambiguous as to its meaning or amount.
- D. When no bids received are under or within funds that can be appropriated, or within the Designer's estimate or when situations develop which make it impossible or not practical to proceed with the proposed work.
- E. If, subsequent to the opening of the bids, facts exist which would disqualify the Bidder, or that such Bidder is not deemed by the Director, Public Works Division to be responsive or responsible.
- F. If an out-of-state contractor is not registered with the Indiana Secretary of State or if any bidding contractor is not in good standing with the Secretary of State.



GENERAL BID FOR PUBLIC WORKS

CONTRACTOR'S BID

For \_\_\_\_\_  
(Insert class of work)

Project Number \_\_\_\_\_

Project Description (Title) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date \_\_\_\_\_

To: Department of Administration, Public Works Division  
Room W467  
402 West Washington Street  
Indianapolis, Indiana 46204

Pursuant to notices given, the undersigned proposes to furnish and install work  
in accordance with the construction documents prepared by:

\_\_\_\_\_  
(Designer Name, Address, Telephone)

-----

for the sum of \_\_\_\_\_  
(State amount in words)

\_\_\_\_\_ \$ \_\_\_\_\_  
(State amount in figures)

If required add attachment for all unit prices called for in the Specifications.

\_\_\_\_\_ Federal I.D. Number or Social Security Number

Contractor's Email address \_\_\_\_\_  
(Contract and Purchase Order will be sent to email address provided)

Bidder ID Number \_\_\_\_\_

(If you do not have an Indiana Department of Administration Bidder ID Number, please obtain one online at:  
<http://www.in.gov/idoa/2464.htm> )

ALTERNATE BIDS

Add Alternates Are Not to be included as part of the Base Bid Scope of Work.

Deduct Alternates are items of work that Are to be included in the Base Bid Scope of Work, and deducted from the project as described herein.

The work shall be as described in Section, ALTERNATES.

Bidder shall provide a response to each alternate specified. Response must indicate the amount to be ADDED to the base bid, DEDUCTED from the base bid, or that there is NO CHANGE.

Failure to respond to all alternates may cause the bid to be rejected.

BIDDER SHALL CHECK APPLICABLE BOX for each listed alternate.

Alternate No. \_\_\_ ADD \_\_\_ DEDUCT \_\_\_ NO CHANGE \_\_\_ AMOUNT \$ \_\_\_\_\_

Alternate No. \_\_\_ ADD \_\_\_ DEDUCT \_\_\_ NO CHANGE \_\_\_ AMOUNT \$ \_\_\_\_\_

Alternate No. \_\_\_ ADD \_\_\_ DEDUCT \_\_\_ NO CHANGE \_\_\_ AMOUNT \$ \_\_\_\_\_

Alternate No. \_\_\_ ADD \_\_\_ DEDUCT \_\_\_ NO CHANGE \_\_\_ AMOUNT \$ \_\_\_\_\_

Alternate No. \_\_\_ ADD \_\_\_ DEDUCT \_\_\_ NO CHANGE \_\_\_ AMOUNT \$ \_\_\_\_\_

Alternate No. \_\_\_ ADD \_\_\_ DEDUCT \_\_\_ NO CHANGE \_\_\_ AMOUNT \$ \_\_\_\_\_

Ethics Compliance. The Contractor and its agents shall abide by all ethical requirements that apply to persons who have a business relationship with the State, as set forth in Indiana Code § 4-2-6 et seq., the regulations promulgated there under, and Executive Order 04-08, dated April 27, 2004. If the Contractor is not familiar with these ethical requirements, the Contractor should refer any questions to the Indiana State Ethics Commission, or visit the Indiana State Ethics Commission website at [<<<http://www.in.gov/ethics/>>>](http://www.in.gov/ethics/). If the Contractor or its agents violate any applicable ethical standards, the State may, in its sole discretion, terminate this contract immediately upon notice to the Contractor. In addition, the Contractor may be subject to penalties under Indiana Code § 4-2-6-12.

Pursuant to IC 22-9-1-10, the Contractor and subcontractors, if any, shall not discriminate against any employee or applicant for employment, to be employed in the performance of this contract, with respect to his hire, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to employment, because of his race, religion, color, sex, disability, national origin, or ancestry. Breach of this covenant may be regarded as a material breach of the contract.

-----  
IN TESTIMONY WHEREOF, the Bidder (a sole proprietor) has hereunto set his hand  
this \_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Proprietorship (Company Name)

(INDIVIDUAL)

\_\_\_\_\_  
Bidder (Owner)

-----  
IN TESTIMONY WHEREOF, the Bidder (a partnership) has hereunto set their hands  
this \_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Partner

\_\_\_\_\_  
Partner

-----  
IN TESTIMONY WHEREOF, the Bidder (a corporation) has caused this proposal to be signed by its  
President or other authorized signatory and Secretary this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Corporation Name

\_\_\_\_\_  
By President or Other Authorized Signatory

\_\_\_\_\_  
Secretary

If the bid is signed by other than the President, a Corporation Resolution designating other authorized signatory shall be submitted with this bid unless already on file with the Certification Board of the Public Works Division.

-----  
BY SIGNING THIS BID THE BIDDER ACKNOWLEDGES PROCUREMENT OF ALL ADDENDA AND  
CERTIFIES THAT THIS BID RECOGNIZES ALL ITEMS IN ALL ADDENDA.



**SIGNATURE AFFIDAVIT**

PROJECT NO: \_\_\_\_\_

STATE OF \_\_\_\_\_ }  
 } SS:  
 COUNTY OF \_\_\_\_\_ }

Before me, the undersigned notary public, appeared \_\_\_\_\_ and being duly  
 (name of bidder)

sworn, on his oath says that he/she is \_\_\_\_\_  
 (president, general partner, owner)

of \_\_\_\_\_, bidder on Project No. \_\_\_\_\_, and  
 (name of company)

**Affirmed that:**

1. This bid is submitted in good faith in the amount stated herein, and will be fulfilled according to the Contract Documents (contract, general and supplemental conditions, technical specification, drawings and addenda thereto), if his bid is accepted; and
2. The statements are true contained in the Non-Collusion Statement, and as applicable, the Contractor's Affidavit of Subs Employed, the M/WBE Participation Plan and the M/WBE Good Faith Effort Work Sheet.

By: \_\_\_\_\_  
 (Signature)

\_\_\_\_\_  
 (Printed name)

\_\_\_\_\_  
 (Printed or typed name of company)

(must be signed by principal of organization)

STATE OF \_\_\_\_\_ }  
 } SS:  
 COUNTY OF \_\_\_\_\_ }

\_\_\_\_\_ personally appeared before me, a Notary Public, in and for said County and State, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_, after being duly sworn upon his oath, says that the facts alleged in the foregoing affidavit are true.

My Commission Expires:

\_\_\_\_\_  
 NOTARY PUBLIC – SIGNATURE

\_\_\_\_\_  
 NOTARY PUBLIC PRINTED NAME

(SEAL)

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we \_\_\_\_\_  
(Contractor's Name and Address)

as Principal, hereinafter called the Principal, and the \_\_\_\_\_  
(Bonding Company Name)

a corporation duly organized under the laws of the State of \_\_\_\_\_  
as Surety, hereinafter called the Surety, are held and firmly bound unto Public Works Division/Department of  
Administration, State of Indiana, as Obligee, hereinafter called the Obligee,

in the sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_ )  
for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our  
heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for: (insert State Project Number, Description and Location)

Project No. \_\_\_\_\_

Project Description: \_\_\_\_\_

Project Location: \_\_\_\_\_

NOW THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a contract  
with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the  
bidding or contract documents with good and sufficient surety for the faithful performance of such contract and for  
the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the  
Principal to enter such contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference  
not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the  
Obligee may in good faith contract with another party to perform the work covered by said bid, then this obligation  
shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
(Witness)

\_\_\_\_\_  
(Principal)

By: \_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Surety)

\_\_\_\_\_  
Witness)

\_\_\_\_\_  
(Attorney-in-fact)

**I. MINORITY AND WOMEN'S BUSINESS ENTERPRISES PARTICIPATION PLAN**

A Respondent is expected to submit in each response a Minority and Women's Business Enterprises Participation Plan in accordance with IC 4-13-16.5 and 25 IAC 5. The Plan must show that there are, participating in the proposed contract, Minority Business Enterprises (MBE) and Women Business Enterprises (WBE) listed in the Minority and Women's Business Enterprises Division (MWBD) directory of certified firms. Respondents must indicate the name of the MBE and WBE with which it will work, the contact name and phone number at the firm(s), the service supplied by the firm(s), the specific dollar amount from this contract that will be directed toward each firm, and the approximate date these products and/or services will be utilized. If participation is met through use of vendors who supply products and/or services, the Respondent must also indicate the vendor's tax ID number as well as provide a description of products and/or services provided to the Respondent that are directly related to this proposal and the cost of direct supplies for this proposal. All prime contractors, including MBE and WBE prime contractors, must meet the contract goals through use of subcontractors. MBE and WBE prime contractors will get no credit toward the contract goal for the use of its own workforce. The State does not accept national plans.

Failure to meet these requirements will affect the evaluation of your Proposal. The Department reserves the right to verify all information included in the Plan.

Respondents are encouraged to contact and work with MWBD to design a plan to meet established goals. MWBD's website address is [www.IN.gov/idoa/minority/](http://www.IN.gov/idoa/minority/) and contains a complete list of all the Department's certified MBE's and WBE's.

**Minority & Women's Business Enterprises Participation  
Letter of Commitment**

A signed letter(s), on company letterhead, from the MBE and/or WBE must accompany the Plan. This letter(s) shall state and will serve as acknowledgement from the MBE and/or WBE of its amount of participation, the scope of products and/or services, and approximate date these products and/or services will be utilized.

By submission of the Proposal, the Respondent acknowledges and agrees to be bound by the regulatory processes involving the State's M/WBE Program. Questions involving the regulations governing the Plan should be directed to MWBD's Compliance Unit at 317/232-3061

**MBE/WBE PARTICIPATION PLAN**

RFP # / Bid # / Quote # \_\_\_\_\_ DUE DATE \_\_\_\_\_

(Circle One)

RFP / BID / QUOTE NAME \_\_\_\_\_

(Circle One)

RESPONDENT \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY/STATE/ZIP \_\_\_\_\_

PHONE ( ) \_\_\_\_\_

The following MBE and/or WBE's listed in the MWBD directory will be participating in the contract:

<u>MBE/WBE</u>	<u>P HONE</u>	<u>COMPANY NAME</u>	<u>SCOPE OF PRODUCTS/SERVICES</u>	<u>UTILIZATION DATE</u>	<u>AMOUNT</u>

**\*If additional room is necessary, indicate here \_\_\_\_\_. Please attach a separate page.**

**THIS DOCUMENT MUST BE INCLUDED IN YOUR RESPONSE**

**Indiana Department of Administration  
Public Works and State Office Building Commission  
GOOD FAITH EFFORTS WORKSHEET**

BIDDER \_\_\_\_\_

BID/PROJECT NUMBER \_\_\_\_\_

CONTRACT GOALS    7% MBE        5% WBE

List the M/WBEs contacted and complete the following information for each. Copies of all communications to and from each vendor should be maintained.

Company Name and Address	MBE	WBE	Type of Contact	Date of Contact	Date Response Due	Goods Or Services Requested	Result (Include Price Quote)

Indicate **Good Faith Efforts** made to utilize MWBEs. Check and explain all that apply or should be considered. Please provide evidence of the efforts that you want to be considered. A complete description of each criteria may be found in the **Indiana Department of Administration Public Works and State Office Building Commission MWBE Participation Policy**.

<b>MBE and WBE Barrier Assistance</b>	Describe
<b>Advertisement</b>	Describe
<b>Agency Assistance</b>	Describe
<b>Other Criteria</b>	Describe

CERTIFICATE OF CORPORATE RESOLUTION

I, \_\_\_\_\_, do hereby certify that I am the Secretary  
Type Name  
of \_\_\_\_\_, a corporation duly organized and  
existing under and by virtue of the Laws of the State of Indiana;

I further certify that a regular/special meeting of the members of the Board of Directors of said corporation, duly called held and convened in conformity with the Charter and By Laws of said corporation, on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_, a quorum being present and voting thereon, the following resolution was duly adopted, to-wit:

I further certify that the foregoing resolution is a full, true, and complete copy as the same appears on record in the Minute Record Book of said corporation of which I am the legal custodian; that the same has not been altered, amended or repealed and is now in full force and effect.

In Witness Whereof, I have hereunto set my hand for said corporation this \_\_\_\_\_ day  
of \_\_\_\_\_, 20\_\_\_\_\_.

By: \_\_\_\_\_  
(Signature)

(must be signed by principal of organization)

STATE OF                                    }  
  } SS:  
COUNTY OF                               }

personally appeared before me, a Notary Public, in and for said County and State, this day of \_\_\_\_\_, 20\_\_\_\_\_, after being duly sworn upon his oath, says that the facts alleged in the foregoing affidavit are true.

My Commission Expires:

\_\_\_\_\_

\_\_\_\_\_  
NOTARY PUBLIC - SIGNATURE

(SEAL)

\_\_\_\_\_  
NOTARY PUBLIC PRINTED NAME

NON-COLLUSION STATEMENT

The undersigned attests, subject to the penalties for perjury, that the undersigned is the Contractor, or that the undersigned is the properly authorized representative, agent, member or officer of the Contractor. Further, to the undersigned's knowledge, neither the undersigned nor any other member, employee, representative, agent or officer of the Contractor, directly or indirectly, has entered into or been offered any sum of money or other consideration for the execution of this Contract other than that which appears upon the face hereof. **Furthermore, if the undersigned has knowledge that a state officer, employee, or special state appointee, as those terms are defined in IC 4-2-6-1, has a financial interest in the Contract, the Contractor attests to compliance with the disclosure requirements in IC 4-2-6-10.5.**

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Title

\_\_\_\_\_  
Company



**CONTRACTOR'S BOND FOR CONSTRUCTION**

KNOW ALL MEN BY THESE PRESENT, that \_\_\_\_\_  
(Contractor)

\_\_\_\_\_ of \_\_\_\_\_  
(Address) (City, State)

as principal and \_\_\_\_\_  
(Bonding Company)

\_\_\_\_\_  
(Address) (City, State) (Zip Code)

as surety, are firmly bound unto the State of Indiana in the penal sum of \$\_\_\_\_\_ Dollars, for the payment of which, well and truly to be made, we bind ourselves, jointly and severally, and our joint and several heirs, executors, administrators and assigns, firmly by these present, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

THE CONDITIONS OF THE ABOVE OBLIGATION ARE SURE, THAT, WHEREAS the State of Indiana acting by and through the Commissioner, Department of Administration, has entered into a certain written contract dated \_\_\_\_\_ of \_\_\_\_\_

\_\_\_\_\_  
(Project Number and Description)

\_\_\_\_\_ situated in \_\_\_\_\_  
Indiana, in accordance with the construction documents approved and adopted by said Commissioner, Department of Administration, which are made a part of this bond.

NOW THEREFORE, if the said \_\_\_\_\_  
(Contractor)  
\_\_\_\_\_, shall well and faithfully do and perform the same in all respects according to the plans and specifications adopted by said Commissioner, Department of Administration, and according to the time, terms and conditions specified in said contract and incurred by him or any subcontractor in the prosecution of said work, including labor, service and materials furnished, then this obligation shall be void; otherwise to remain in full force, virtue and effect. This bond shall adhere to the requirements of IC 4-13.6-7-6 and IC 4-13.6-7-7.

IN WITNESS WHEREOF, we hereunto set our hands and seals this \_\_\_\_\_ day  
of \_\_\_\_\_, 20\_\_\_\_\_.

By: \_\_\_\_\_ (Seal)  
(Contractor)

By: \_\_\_\_\_ (Seal)  
(Bonding Company)

By: \_\_\_\_\_  
(Attorney-in-fact)



# CONTRACTOR'S CERTIFICATE OF INSURANCE

This certifies to the addressee shown below that the following described policies, subject to their terms, conditions, and exclusions, have been issued to:

NAME AND ADDRESS OF INSURED: \_\_\_\_\_

COVERING (show State project number, name and location) \_\_\_\_\_

ADDRESSEE: **PUBLIC WORKS DIVISION/DEPARTMENT OF ADMINISTRATION** DATE: \_\_\_\_\_

TYPE OF INSURANCE	POLICY NUMBER	EFFECTIVE DATE	EXPIRATION DATE	LIMITS	
1. General Liability a. Bodily Injury Including Personal Injury				Each Person - Premises and Operations	\$ _____
				Each Person – Elevators	\$ _____
				Each Person – Independent Contractor	\$ _____
				Each Person - Products Completed Including Operations	\$ _____
				Each Person – Contractual	\$ _____
				Each Occurrence -	\$ _____
				Aggregate - Products Completed Including Operations	\$ _____
b. Property Damage				Each Occurrence – Premises and Operations	\$ _____
				Each Occurrence – Elevators	\$ _____
				Each Occurrence – Independent Contractor	\$ _____
				Each Occurrence – Products Completed Including Operations	\$ _____
				Each Occurrence – Contractual	\$ _____
				Aggregate -	\$ _____
				Aggregate - Operations Protective Products and Contractual	\$ _____
2. Automobile Liability a. Bodily Injury b. Property Damage				Each Person	\$ _____
				Each Occurrence	\$ _____
				Each Accident	\$ _____
3. Excess Liability Umbrella					\$ _____
4. a. Workmen's Compensation b. Employer's Liability				Statutory Workmen's Compensation	\$ _____
				One Accident And Aggregate Disease	\$ _____
5. Builder's Risk					\$ _____

UNDER GENERAL LIABILITY POLICY OR POLICIES	YES	NO
1. Does Property Damage Liability Insurance shown include coverage for <b>XC</b> and <b>U</b> hazards? .....	_____	_____
2. Is Occurrence Basis Coverage provided under Property Damage Liability? _____	_____	_____
3. Is Broad Form Property Damage Coverage provided for this Project?.....	_____	_____
4. Is Personal Injury Coverage included? ... ..	_____	_____
5. Is coverage provided for Contractual Liability (including <u>indemnification provision</u> ) assumed by insured? .....	_____	_____
UNDER AUTOMOBILE LIABILITY POLICY OR POLICIES.....	_____	_____
1. Does coverage shown above apply to non-owned and hired automobiles? .. ..	_____	_____
2. Is Occurrence Basis Coverage provided under Property Damage Liability? _____	_____	_____

In the event of cancellation, fifteen (15) days written notice shall be given to the party to whom this certificate is addressed.

\_\_\_\_\_  
NAME OF INSURANCE COMPANY

\_\_\_\_\_  
ADDRESS

\_\_\_\_\_  
SIGNATURE OF AUTHORIZED REPRESENTATIVE

## CONTRACTOR'S EMPLOYEE DRUG TESTING

IC 4-13-18 IS ADDED TO THE INDIANA CODE AS A NEW CHAPTER TO READ AS FOLLOWS [EFFECTIVE JULY 1, 2006]:

### Chapter 18. Drug Testing of Employees of Public Works Contractors

Sec. 1. This chapter applies only to a public works contract awarded after June 30, 2006.

Sec. 2. As used in this chapter, "bid" includes a quotation.

Sec. 3. (a) As used in this chapter, "contractor" refers to a person who:

- (1) submits a bid to do work under a public works contract; or
- (2) does any work under a public works contract.

(b) The term includes a subcontractor of a contractor.

Sec. 4. As used in this chapter, "public works contract" refers to:

- (1) a public works contract covered by IC 4-13.6;
- (2) a public works contract covered by IC 5-16 and entered into by a state agency; or
- (3) a state highway contract covered by IC 8-23-9;

when the estimated cost of the public works project is one hundred fifty thousand dollars (\$150,000) or more.

Sec. 5. (a) A solicitation for a public works contract must require each contractor that submits a bid for the work to submit with the bid a written plan for a program to test the contractor's employees for drugs.

(b) A public works contract may not be awarded to a contractor whose bid does not include a written plan for an employee drug testing program that complies with this chapter.

(c) A contractor that is subject to a collective bargaining agreement shall be treated as having an employee drug testing program that complies with this chapter if the collective bargaining agreement establishes an employee drug testing program that includes the following:

- (1) The program provides for the random testing of the contractor's employees.
- (2) The program contains a five (5) drug panel that tests for the substances identified in section 6(a)(3) of this chapter.

(3) The program imposes disciplinary measures on an employee who fails a drug test. The disciplinary measures must include at a minimum, all 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) drug 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.

(D) The employee successfully completes a rehabilitation program recommended by a substance abuse professional if the employee fails more than one (1) drug test.

A copy of the relevant part of the collective bargaining agreement constitutes a written plan under this section.

Sec. 6. (a) A contractor's employee drug testing program must satisfy all of the following:

(1) Each of the contractor's employees must be subject to a drug test at least one (1) time each year.

(2) Subject to subdivision (1), the contractor's employees must be tested randomly. At least two

percent (2%) of the contractor's employees must be randomly selected each month for testing.

(3) The program must contain at least a five (5) drug panel that tests for the following:

- (A) Amphetamines.
- (B) Cocaine.
- (C) Opiates (2000 ng/ml).
- (D) PCP.
- (E) THC.

(4) The program must impose progressive discipline on an employee who fails a drug test. The discipline must have at least the following progression:

(A) After the first positive test, an employee must be:

- (i) suspended from work for thirty (30) days;
- (ii) directed to a program of treatment or rehabilitation; and
- (iii) subject to unannounced drug testing for one (1) year, beginning the day the employee returns to work.

(B) After a second positive test, an employee must be:

- (i) suspended from work for ninety (90) days;
- (ii) directed to a program of treatment or rehabilitation; and
- (iii) subject to unannounced drug testing for one (1) year, beginning 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, beginning 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 is described in this subdivision.

(b) An employer complies with the requirement of subsection (a) to direct an employee to a program of treatment or rehabilitation if the employer does either of the following:

(1) Advises the employee of any program of treatment or rehabilitation covered by insurance provided by the employer.

(2) If the employer does not provide insurance that covers drug treatment or rehabilitation programs, the employer advises the employee of agencies known to the employer that provide drug treatment or rehabilitation programs.

Sec. 7. (a) The public works contract must provide for the following:

(1) That the contractor implement the employee drug testing program described in the contractor's plan.

(2) Cancellation of the contract by the agency awarding the contract if the contractor:

- (A) fails to implement its employee drug testing program during the term of the contract;
- (B) fails to provide information regarding implementation of the contractor's employee drug testing program at the request of the agency; or
- (C) provides to the agency false information regarding the contractor's employee drug testing program.

(b) The provisions of the public works contract relating to cancellation of the contract by the agency awarding the contract apply to cancellation of the public works contract under this section.

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STATE OF INDIANA  
GENERAL CONDITIONS

ARTICLE 1 CONTRACT DOCUMENTS

1.1 Definitions

1.1.1 The Contract Documents

The Contract Documents consist of the Agreement, the Instructions to Bidders, the Contractor's Proposal (Bid), the Conditions of the Contract (General and Supplementary), Drawings, Specifications, and Addenda issued prior to bidding, Change Orders, any written interpretation issued as a field order by the Designer pursuant to Article 1.2, and all field orders for minor changes in the Work by the Designer pursuant to Article 12.3.

1.1.2 The Contract

The Contract Documents form the Contract for construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes all prior negotiations, representations, or agreements, either written or oral.

1.1.3 The Work

All labor, material, equipment, systems and services necessary to produce the result called for in the Contract Documents.

1.1.4 The Project

The Project is the total construction designed by the Designer of which the Work performed under the Contract Documents may be the whole or a part.

1.2 Execution, Correlation, Intent and Interpretations

1.2.1 The Contract Documents shall be signed by the Owner and the Contractor. The signature process may be done electronically at the discretion of the Owner.

1.2.2 By executing the Contract the Contractor represents that he has visited the site and correlated his observations with the requirements of the Contract Documents, and has no major question pertaining thereto.

1.2.3 The Contract Documents are complementary, and what is called for by any one shall be as binding as if called for by all. The intention of the Documents is to include all labor, equipment, supervision and materials, for the proper execution and completion of the Work, and also to include those things that may be reasonably inferable from the Contract Documents as being necessary to produce the intended results. Words that have a well-known technical or trade meaning are used herein, in accordance with such recognized meaning.

1.2.4 Written interpretations necessary for the proper execution of the Work, in the form of drawings or otherwise will be issued with reasonable promptness by the Designer. Such interpretations shall be consistent with and reasonably inferable from the Contract Documents, and may be issued by field order subject to Owner's approval.

1.3 Copies Furnished and Ownership

1.3.1 The Contractor will be furnished 5 copies of drawings and specifications and any other information necessary for the execution of the Work.

1.3.2 All drawings, specifications, and copies thereof furnished by the Designer are his property. They are not to be used on any other Project, and, with the exception of one Contract set for each party to the Contract, are to be returned on request to the Designer at the completion of the Work.

ARTICLE 2 DESIGNER

2.1 Definition

2.1.1 The Designer is the person or organization identified as Designer of the Project, and is referred to throughout the Contract Documents as if singular in number and masculine in gender. The terms Designer, Engineer, Architect, (and in certain projects Director, Public Works Division or his authorized representative), shall mean the Designer.

## 2.2 Administration of the Contract

2.2.1 The Designer will provide general administration of the Contract, including the functions hereinafter described.

2.2.2 Unless stated otherwise, the Designer shall be the Owner's representative during the construction phase. He shall have authority to act on behalf of the Owner only to the extent expressly provided in the Contract Documents or otherwise in writing, which will be shown to the Contractor. The Designer will advise and consult with the Owner and all of the Owner's instructions to the Contractor shall be issued through the Designer.

2.2.3 The Designer shall have access to the Work at all times wherever it is in storage, preparation and progress. The Contractor shall provide facilities for such access so that the Designer and Owner's Site Representative may perform their functions under the Contract Documents.

2.2.4 The Designer will make no less than weekly visits to the site when work is in progress to familiarize himself generally with the progress and quality of the Work and to determine in general if the Work is proceeding in accordance with the Contract Documents. He will not be required to make exhaustive or continuous on-site inspection to check the quality or quantity of the Work. On the basis of his on-site observations as Designer, he will keep the Owner informed of the progress of the Work, and will endeavor to guard the Owner against defects and deficiencies in the Work of the Contractor.

2.2.5 Based on such observation and the Contractor's applications for payment, the Designer will determine the amount owed to the Contractor and will issue Certificates for Payment in such amounts.

2.2.6 The Designer will be, in the first instance, the interpreter of the requirements of the Contract Documents and the judge of the performance thereunder. He will promptly render such interpretations as he may deem necessary for the proper execution or progress of the Work.

2.2.7 All interpretations and decisions of the Designer will be consistent with the intent of the Contract Documents. He will exercise his best efforts to insure faithful performance by the Contractor.

2.2.8 Claims, disputes and other matters in question relating to the execution or progress of the Work or interpretation of the Contract Documents shall be referred initially to the Designer for decision and be subject to written appeal within fifteen (15) days by the Contractor. The Designer shall submit his decision promptly in writing to the Director, Public Works Division, who shall have full authority to render the final and binding decision.

2.2.9 The Designer will have responsibility to recommend to the Owner the rejection of work that does not conform to the Contract Documents. Whenever the Designer considers it necessary or advisable, he shall recommend to the Owner the stoppage of the Work or any portion thereof, and to recommend special examination or testing of the Work (whether or not fabricated, installed, or completed).

2.2.10 The Designer will review and approve or take other appropriate action upon the Contractor's submittals such as shop drawings, product data and samples, but only for conformance with the design concept of the Work and with the information given in the Contract Documents. Such action shall be taken with reasonable promptness so as to cause no delay. The Designer's approval of a specific item shall not indicate approval of all assembly of which the item is a component.

2.2.11 The Designer will prepare change orders in accordance with Article 12.

2.2.12 The Designer will conduct reviews to determine the dates of Substantial Completion and Final Completion, will receive and forward to the Owner for the Owner's review written warranties and related documents required by the Contract and assembled by the Contractor, and will issue a final Certificate for Payment upon compliance with the requirements of Article 9.7.

2.2.13 The Designer, together with representatives from the Contractor and the Owner will conduct a review of the Work nine (9) months after the date of substantial completion to determine any work not in compliance with the Contract Documents at that time. A list of items to be corrected or completed will be forwarded to the Contractor for corrective action prior to the expiration of the one year warranty period.

2.2.14 The duties, responsibilities and limitations of authority of the Designer as the Owner's representative during construction as set forth in Articles 1 through 14 of these General Conditions shall not be modified or extended without written consent of the Owner.

2.2.15 The Designer will not be responsible for the acts or omissions of the Contractor, Subcontractor, or any of their superintendents, supervisory staffs, agents or employees, or any other persons performing any of the Work.

2.2.16 In case of the termination of the employment of the Designer, the Owner shall appoint a Designer against whom the Contractor makes no reasonable objections, whose status under the Contract shall be that of Designer.

## ARTICLE 3 OWNER

### 3.1 Definition

3.1.1 The Owner is the State of Indiana, represented by the Commissioner; Department of Administration acting through the Director, Public Works Division and the Director's designated project manager.

### 3.2 Information and Service Required of the Owner

3.2.1 The Owner will furnish, through the Designer, surveys, describing known physical characteristics, legal limits and utility locations for the property on which the Project is to be erected, if in the Owner's possession.

3.2.2 Information or services under the Owner's control shall be furnished by the Owner with promptness to avoid delay in the orderly progress of the Work.

3.2.3 The Owner shall issue all instructions to the Contractor through the Designer unless specified elsewhere in these documents.

3.2.4 If the Contractor fails to correct defective work as required by Article 13 or persistently fails to carry out the Work in accordance with the Contract Documents, the Owner, by a written order may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of the Owner to stop the Work shall not give rise to any duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Article 6.1.

### 3.3 Owner's Site Representative

3.3.1 Notwithstanding the obligations of the Designer as Owner's representative during construction, the Owner may employ an on-site representative to observe the progress of the Work.

3.3.2 The Owner's Site Representative shall function as an observer only. He shall report his findings to the Designer for review and any required further action. The Owner's Site Representative is not authorized to make changes in the Work or to interpret the Contract Documents.

3.3.3 The Owner's Site Representative shall have at all times access to the Work wherever it is in storage, preparation and progress. He may attend meetings at the site and he may review and approve the Contractor payment requests.

## ARTICLE 4 CONTRACTOR

### 4.1 Definition

4.1.1 The Contractor is the person or organization identified as such in the Agreement. He is referred to throughout the Contract Documents as if singular in number and masculine in gender. The term Contractor means the Contractor or his authorized representative.

### 4.2 Review of Contract Documents

4.2.1 The Contractor shall carefully study and compare the Contract Documents and shall at once report to the Designer and the Owner any error, inconsistency or omission he may discover. The Contractor shall perform no portion of the Work at any time without Contract Documents or, where required, approved shop drawings, product data or samples for such portion of the Work.

### 4.3 Supervision and Construction Procedures

4.3.1 The Contractor shall supervise and direct the Work, using his best skill and attention. He shall be solely responsible for the quality of the Work and for all construction techniques, sequences, and procedures, and for coordinating all portions of the Work.

4.3.2 The Contractor shall not be relieved from his obligations to perform the Work in accordance with the Contract Documents either by the activities or duties of the Designer in administration of the Contract, or by inspections, tests or approvals required or performed under Paragraph 7.9 by persons other than the Contractor.

### 4.4 Labor and Materials

4.4.1 Unless otherwise specified in Division 1, the Contractor shall provide and pay for all labor, material, equipment, tools, construction equipment, machinery, transportation, and other facilities and services necessary for the proper execution of the Work.

4.4.2 Unless otherwise specified in Division 1, the Contractor shall provide and pay for all electric current, water, heat, and telephone services and shall maintain necessary discipline to prevent waste.

4.4.3 If any item of work shall be the subject of a jurisdictional dispute as to the craft to be used for said work, the Contractor shall aid in such inter-craft resolution and if arbitrated, abide by the decision, holding the Owner free of involvement in the dispute, and if time is lost by the dispute, extra work days will only be considered through the provisions of Article 12.2. He will do whatever he can to eliminate any embarrassment to the Owner caused by picketing, etc.

4.4.4 The Contractor shall at all times enforce strict discipline and good order among his employees, and shall not employ on the Work any unfit person or any one employee unskilled in the Work assigned to him or unqualified as a tradesman in the trade involved.

#### 4.5 Warranty and Guarantee

4.5.1 The Contractor warrants and guarantees that all materials and equipment incorporated in the Project shall be new unless otherwise specified, and all work will be of the highest quality, free from faults and defects, and in strict conformance with the Contract Documents for a period of one year from the date of substantial completion. All work not so conforming to the Contract Documents may be considered defective. If required by the Designer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. The warranties and guarantees provided in this Article and elsewhere in the Contract Documents shall be in addition to and not in limitation of any other warranty or guarantee or remedy called for the Contract Documents or otherwise prescribed by law. The Contractor, together with the Designer and representatives from the Owner, shall review the Work nine (9) months after the date of substantial completion to determine any work not in compliance with the Contract Documents. The Contractor shall correct such non-complying work prior to the expiration of the one year warranty.

#### 4.6 Permits, Fees and Notices

4.6.1 The Contractor shall secure and pay for all permits, fees and licenses necessary for the execution of the Work.

4.6.2 The Contractor and Subcontractors must submit an "Exemption Certificate for Construction Contractors" (Form ST-105) to each supplier in order to obtain exemption from the Indiana Gross Tax (i.e., sales and use tax).

4.6.3 The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations, and orders of any public authority bearing on the conduct of the Work. If he observes that any of the Contract Documents are at variance therewith in any respect, he shall promptly notify the Designer in writing, and any necessary changes shall be adjusted by change order. If he performs any work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the Designer, he shall bear all cost arising from such non-conformance.

#### 4.7 Cash Allowances

4.7.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. These allowances cover the net cost of the materials and equipment delivered and unloaded at the site which cost shall be determined by the Owner through proper procedures for receiving quotes or bids as required by law. The Contractor's handling costs on the site, labor, installation costs, overhead, profit, and other expenses shall be included in the Contract sum and not in the allowance. The Contractor shall cause the Work required by these allowances to be performed by such persons as the Designer may direct, but he will not be required to employ persons against whom he has a reasonable objection. If the net cost above, when determined, is more than or less than the allowance, the Contract Sum will be adjusted accordingly by change order.

#### 4.8 Superintendent

4.8.1 The Contractor shall keep on the Project, during the entire contract time, a competent superintendent and necessary assistants, all satisfactory to the Designer and the superintendent shall not be changed, except with the consent of the Owner, unless the superintendent proves to be unsatisfactory to the Contractor and ceases to be in his employ. The superintendent shall represent the Contractor and shall have full authority to act on his behalf. All communications given the superintendent shall be as binding as if given by the Contractor. Important communications shall be confirmed in writing.

#### 4.9 Responsibility for Those Performing the Work

4.9.1 The Contractor shall be responsible for the quality of the Work, for acts and omissions of all the Subcontractors, their superintendents, their supervisory staffs, agents, or employees and of all other persons performing any of the Work under a Contract with the Contractor.



#### 4.10 Progress Schedule

4.10.1 Unless otherwise indicated in Division 1, the Contractor, immediately after being awarded the Contract, shall prepare and submit for the Designer's approval a progress schedule for the Work in relation to the entire Project. This schedule in bar graph form, or other form approved by the Owner, shall indicate the dates for the starting and completion of the various stages of construction, and in addition, will state the contractual completion date. The contract completion date, based on the construction period stated in the notice to bidders, shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by change order. A more detailed schedule may be required elsewhere in the documents.

#### 4.11 Record Documents at the Site

4.11.1 The Contractor shall maintain for the Owner as part of the Contract one record copy of all drawings, specifications, addenda, shop drawings, change orders and other modifications at the site in good order, and marked to record all changes made during construction. These shall be available to the Designer and the Owner's Site Representative at all times while Work is in progress. All changes made during construction shall be recorded monthly and reviewed by the Designer before approval of each partial progress payment. The record documents shall be submitted to the Designer prior to the Contractor's final payment.

#### 4.12 Shop Drawings and Samples

4.12.1 Shop drawings are all drawings, diagrams, illustrations, schedules, brochures, and other data, which are prepared by the Contractor, or any Subcontractor, manufacturer, supplier, or distributor, and which illustrate the Work.

4.12.2 The Contractor shall submit all shop drawings and samples required by the Contract or by the Designer in a timely manner, allowing sufficient time for the Designer's review so as not to cause any delay in the Work or in work by any other Contractor.

4.12.3 At the time of such submission, the Contractor shall furnish or verify all field measurements, field construction criteria, materials, catalog numbers, and the like and shall individually check, coordinate and stamp with his approval each submission, and shall in writing call the Designer's attention to any deviations in the shop drawings or samples from the requirements of the Contract Documents.

4.12.4 The Designer will check and approve, with reasonable promptness so as to cause no delay, these shop drawings and samples only for conformance with the design concept of the Project, and with the information given in the Contract Documents. The Designer's approval of a separate item will not indicate approval of the assembly in which the item functions.

4.12.5 The Designer's approval of shop drawings or samples shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Contractor has in writing called the Designer's attention to such deviation at the time of submission and the Designer has given written approval to the specific deviation, nor shall this relieve the Contractor from errors or omissions in the shop drawings or samples.

4.12.6 No work requiring a shop drawing or sample submission shall be commenced until the submission has been approved by the Designer. All such work shall be in accordance with approved shop drawings and samples.

#### 4.13 Use of Premises

4.13.1 The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents, and shall not unreasonably encumber the premises with any materials or equipment.

#### 4.14 Cutting and Patching

4.14.1 The Contractor shall do all cutting, fitting or patching of his work that may be required to make its several parts come together properly and shall not endanger any work by cutting, excavating, or otherwise altering the Work or any part of it. Costs caused by defective or ill-timed work shall be borne by the party responsible therefore.

#### 4.15 Cleaning Up

4.15.1 The Contractor shall at all times keep the premises free from accumulation of waste materials or rubbish caused by his operations. At the completion of the Work, he shall remove all waste material and rubbish from and about the building as well as all his tools, scaffolding and surplus materials. Contractor shall clean all glass surfaces, lights and fixtures, ceilings, walls and shall leave the Work dusted, swept and wet mopped clean, unless more exactly specified.

4.15.2 In case of dispute the Owner may remove the rubbish and charge the cost to the several Contractors as the Designer shall determine to be just.

## ARTICLE 5 SUBCONTRACTORS

### 5.1 Definition

As used in this article "contractor tier" refers collectively to the following classes of contractors on a public works project:

- (1) "Tier 1 contractor" includes each person that has a contract with the public agency to perform some part of the work on, supply some of the materials for, or supply a service for, a public works project. A person included in this tier is also known as a "prime contractor" or a "general contractor".
- (2) "Tier 2 contractor" includes each person that has a contract with a tier 1 contractor to perform some part of the work on, supply some of the materials for, or supply a service for, a public works project. A person included in this tier is also known as a "subcontractor".
- (3) "Tier 3 contractor" includes each person that has a contract with a tier 2 contractor to perform some part of the work on, supply some of the materials for, or supply a service for, a public works project. A person included in this tier is also known as a "sub-subcontractor".
- (4) "Lower tier contractor" includes each person that has a contract with a tier 3 contractor or lower tier contractor to perform some part of the work on, supply some of the materials for, or supply a service for, a public works project. A person included in this tier is also known as a "lower tier subcontractor".

A Subcontractor is a person or entity who has a direct Contract with the Contractor to perform any of the Work at the site. The term Subcontractor is referred to throughout the Contract Documents as if singular in number and masculine in gender and means a Subcontractor or his authorized representative. The term Subcontractor does not include any separate Contractor or his Subcontractors.

### 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

5.2.1 Unless otherwise required by the Contract, the Contractor shall furnish to the Owner, with his bid on the prescribed form, the names of all persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each of the principal portions of the Work with an installed value of \$150,000.00 or more. The Designer will promptly reply to the Contractor in writing stating whether or not the Owner or the Designer, after due investigation, has reasonable objection to any such proposed person or entity. Failure of the Owner or Designer to reply within fourteen (14) days shall constitute notice of no reasonable objection.

5.2.2 The Contractor shall not subcontract with any such proposed person or entity to which the Owner or the Designer has made reasonable objection. The Contractor shall not be required to subcontract with anyone to whom he has a reasonable objection.

5.2.4 If the Owner or the Designer has reasonable objection to any such proposed person or entity, the Contractor shall submit a substitute to whom the Owner or the Designer has no reasonable objection.

5.2.5 The Contractor shall make no substitution of any Subcontractor, person or entity previously selected, if the Owner or Designer makes reasonable objection to such substitution.

5.2.3 The Contractor and his subcontractors shall employ only licensed plumbers and shall provide to the Owner the names and license numbers of all plumbers engaged in the Work. The Contractor shall submit this documentation with any monthly progress payment request that includes plumbing labor.

### 5.3 Subcontractual Relations

5.3.1 By an appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by the terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities which the Contractor, by these Documents, assumes toward the Owner. Said agreement shall preserve and protect the rights of the Owner under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor the benefit of all rights, remedies and redress against the Contractor that the Contractor, by these Documents, has against the Owner. Provisions of Article 9 for progress payments, retainage and payment for stored material shall be incorporated without modification in all Contractor-Subcontractor agreements. The Contractor shall require each Subcontractor to enter into similar agreements with his Sub-subcontractors. Prior to execution of the Contractor-Subcontractor agreement, the Contractor shall provide all Subcontractors a complete copy of all proposed Contract Documents for the Project to which the Subcontractor will be bound by this Paragraph 5.3. Each Subcontractor shall similarly make available to his Sub-Subcontractors copies of such Documents. Executed copies of all agreements shall remain on file with the Contractor and be available for review by the Owner at the Owner's discretion.

ARTICLE 6 SEPARATE CONTRACTS

6.1 Owner's Right to Let Separate Contracts

6.1.1 The Owner reserves the right to let other contracts in connection with other portions of the Project under these or similar General Conditions.

6.1.2 When separate contracts are awarded for different portions of the Project, "the Contractor" in the Contract Documents in each case shall be the Contractor who signs each separate contract with the Owner.

6.1.3 When separate contracts are awarded for portions of the Project, the General Construction Contractor shall be responsible for the overall coordination of all separate contracts for the Project.

6.2 Mutual Responsibility of Contractors

6.2.1 The Contractor shall afford each other Contractor reasonable opportunity for the introduction and storage of their materials and equipment and the execution of their work, and each shall properly connect and coordinate his work with all others as coordinated by the General Contractor.

6.2.2 If any part of the Contractor's work depends on proper execution or results upon the work of any other separate Contractor, the Contractor shall inspect and promptly report to the Designer any discrepancies or defects that shall cause his work to fail or be non-conforming. Failure of the Contractor to so inspect and report shall constitute an acceptance of the other Contractor's work as fit and proper for the reception of his work.

6.2.3 Should the Contractor cause damage to any separate Contractor on the Project, the General Contractor agrees, upon due notice, to settle with such other Contractor by agreement, if at all possible without involving the Owner. The Owner will be involved only after evidence is presented that sureties cannot settle the problem.

6.2.4 Any costs caused by defective or ill-timed work shall be borne by the party responsible.

ARTICLE 7 MISCELLANEOUS PROVISIONS

7.1 Delinquent State Taxes (IC. 4-13-2-14.5). The Public Works Division may allow the Department of State Revenue access to the name of each person who is either:

- (1) Bidding on a Contract to be awarded under this chapter; or
- (2) A Contractor or Subcontractor under this chapter.

If the Public Works Division is notified by the Department of State Revenue that a bidder is on the most recent tax warrant list, a Contract may not be awarded to that bidder until the bidder provides a statement from the Department of State Revenue that the Bidder's delinquent tax liability has been satisfied. The Department of State Revenue may notify:

- (1) The Department of Administration; and
- (2) The Auditor of State;

that a Contractor or Subcontractor under this chapter is on the most recent tax warrant list, including the amount owed in delinquent taxes. The Auditor of State shall deduct from the Contractor's or Subcontractor's payment the amount owed in delinquent taxes. The Auditor of State shall remit this amount to the Department of State Revenue and pay the remaining balance to the Contractor or Subcontractor.

7.2 Choice of Law

7.2.1 The Contract shall be governed by the laws of the State of Indiana.

7.3 Assignment

7.3.1 The Contractor shall not assign the Contract or sublet it as a whole without the written consent of the Owner, nor shall the Contractor assign any monies due or to become due to him hereunder, without the previous written consent of the Owner.

7.4 Written Notice

7.4.1 Written notice shall be deemed to have been duly served if delivered in person to the individual or member of the firm or to an officer of the corporation for whom it was intended, or sent by registered or certified mail to the last business address known to him who gives the notice.

## 7.5 Claims for Damages

7.5.1 Should either party to the Contract suffer injury or damage to person or property because of any act or omission of the other party or any of his employees, agents or others for whose acts he is legally liable, claim shall be made in writing to such other party within seven (7) days of the first observance of such injury or damage.

## 7.6 Performance Bond and Labor and Material Payment Bond

7.6.1 For projects advertised with an estimated base bid amount of One Hundred Fifty Thousand Dollars (\$150,000) or more, the Contractor shall furnish and pay for an approved one hundred percent (100%) combination performance and payment bond (Contractor's Bond for Construction, Public Works Division Form DAPW 15). This bond shall adhere to the requirements of IC. 4-13.6-7-6 and IC. 4-13.6-7-7 as amended and shall cover the faithful performance of the Contract and the payment of all obligations arising thereunder, including reimbursement for any stored materials paid for but returned to materialmen, with such sureties as the Owner may approve. The combination bond shall remain in effect throughout the entire construction period and in addition for a period of one year from the date of final acceptance. The Contractor shall deliver the required bonds to the Owner prior to execution of the Contract by the Owner unless authorized to the contrary in writing by the Owner. All bonds must be issued by bonding companies, which are licensed and approved by the Indiana Insurance Commission.

## 7.7 Owner's Right to Carry Out the Work

7.7.1 If the Contractor should default or neglect to carry out the Work properly or fail to perform any provision of the Contract, the Owner may, after giving seven (7) days written notice to the Contractor, without prejudice to any other remedy it may have, make good such deficiencies. In such case, an appropriate change order shall be issued deducting the cost thereof including the cost of the Designer's additional service made necessary by such default, neglect or failure of the Contractor, from the payments then or thereafter due the Contractor, provided, however, that the Designer shall approve both such action and the amount charged to the Contractor. If such payments due to the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner.

## 7.8 Royalties and Patents

7.8.1 The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from liability of any nature or kind including costs and expenses for or on account of any patented or unpatented invention, process, article or appliance manufactured or used in the performance of this Contract, including its use by the Owner.

## 7.9 Tests & Substitution of Materials

7.9.1 If the Contract Documents, laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction require any work to be inspected, tested, or approved, the Contractor will give the Designer timely notice of its readiness and of the date fixed for such inspection, testing, or approval so that the Designer may observe the same. The Contractor shall bear all cost of such inspections, tests, and approvals unless otherwise provided.

7.9.2 If, after the commencement of the Work, the Designer, with approval of the Owner in writing, determines that the Work requires special inspection, testing, or approval for which subparagraph 7.9.1 does not provide, he will, upon written authorization from the Owner, order such special inspection, testing or approval. If such special inspection or test reveals a failure of the Work to fulfill the requirements of the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction, the Contractor shall bear all costs thereof; otherwise the Owner shall bear such costs. An appropriate change order shall be issued.

7.9.3 Required certificates of inspection, testing or approval shall be secured by the Contractor and promptly delivered by him to the Designer.

7.9.4 Observations by the Designer of the inspections, tests, or approvals required by Article 7 will be promptly made, and where practicable at the source of supply at no additional cost to the Owner.

7.9.5 Neither the observations of the Designer in his administration of the Contract, nor inspections, tests or approvals by persons other than the Contractor shall relieve the Contractor from his obligations to perform the Work in accordance with the Contract Documents.

7.9.6 All building construction and work, alterations, repairs, plumbing, mechanical, and electrical installations and appliances connected therewith, shall comply with the Rules and Regulations of the Department of Fire and Building Services, State Board of Health, local ordinances, Rules for Licensure of Building Trades, and other statutory provisions pertaining to this class of work; such rules and regulations and local ordinances to be considered as a part of these specifications.

7.9.7 Where in these specifications, one or more certain materials, trade names, or articles of certain manufacture are mentioned, it is done for the express purpose of establishing a basis of durability and efficiency and not for the purpose of limiting competition. Approval of other acceptable products for those specified may be obtained by requesting to the Designer no later than fourteen (14) days in advance of bid date with all documentation required for the Designer to evaluate any approval. If approval is granted, the subject product will be added by addendum.

7.9.8 Should there be a reason for change of materials after award of the Contract, the following criteria shall apply:

- a. Original material no longer manufactured,
- b. Delivery not possible within time specified for job, and/or
- c. Unavailability due to causes beyond the control of the Contractor.

7.9.9 After agreement by the Designer and the Owner that a change is necessary, the Contractor shall present a request for substitution to the Designer. The burden of proof of the merit of the proposed substitute is upon the proposing party. The decision of the Designer and the Owner regarding the substitution shall be final.

7.10 Certificate of Qualification

7.10.1 In accordance with IC. 4-13.6-4 as amended, all Contractors and Subcontractors performing work for the State of Indiana on projects estimated to be in excess of one hundred fifty thousand dollars (\$150,000.00), must hold a valid Certificate of Qualification issued by the Public Works Certification Board. The Instructions to Bidders define the procedure for certification and bidding.

7.10.2 The Contractor must perform at least fifteen (15) percent of the total Contract Sum of the Work with his own forces. The Contractor shall submit copies of his payroll records, if requested by the Owner, showing the hours, rates and total costs for all personnel on his payroll detailed to the degree to ensure compliance with this paragraph and any Wage Determination provisions.

7.11 Appropriation

7.11.1 The Contract specifically limits payments to be made in accordance with appropriations made and funds made available under laws of the State of Indiana.

7.12 Federal Wage Determination if required

7.12.1 If a Davis-Bacon wage determination is included in the Contract Documents, it shall be used as the minimum wage and benefits to be paid for the trades indicated.

7.12.2 Contractor shall submit a schedule of hourly wages to be paid to each employee (including those of his subcontractors) engaged in work on the site. This submittal shall be on Contractor's letterhead stationery and shall be signed by the Contractor and notarized. A copy of this submittal shall be conspicuously posted at the site.

7.12.3 Said rates shall in no case be less than those set out in the Davis-Bacon wage schedule a copy of which is herein bound or is on file with the Owner if it is required.

7.12.4 The Contractor shall provide (and require each Subcontractor to provide) weekly payroll records listing employees engaged in work on the site for the week and the hourly rates for base pay and benefits paid to each employee listed. The payroll record form shall include a statement by the Contractor/Subcontractor certifying the accuracy and completeness of the information provided. Payroll records shall be maintained by the Contractor during the course of the Work until the end of the required warranty period.

7.13 Out-of-State Contractors

7.13.1 Proof of payment by Out-of-State Contractors of Indiana Gross Income Tax, as provided in IC. 6-2.1-5-1.1 (b) and 6-2.1-5-1.1 (a) (d) as amended shall be submitted before final payment will be approved.

7.13.2 Out-of-State Corporations must be authorized to do business in the State, IC. Title 23 prior to submitting bids. Forms may be obtained by contacting the Secretary of State, State of Indiana, Indianapolis, Indiana.

7.14 Material Delivery

7.14.1 Shipments of material to be used by the Contractor or any Subcontractor under this Contract should be delivered to the job site only during the regular working hours of the Contractor or Subcontractor. If a delivery is made during other than the normal working hours of the Contractor or Subcontractor, his authorized agent must be on duty to receive such material. No employee of the Owner is authorized to receive any shipments designated for the Contractor or Subcontractor.

## 7.15 Weather

7.15.1 The Contractor shall at all times provide protection against weather, rain, wind, storms, frost or heat, so as to maintain all work, materials, apparatus and fixtures free from injury or damage. At the end of the day's work, all new work likely to be damaged shall be covered.

7.15.2 During cold weather, the Contractor shall protect all work from damage. If low temperature makes it impossible to continue operations safely, in spite of cold weather precaution, the Contractor shall cease work and shall so notify the Owner and Designer.

7.15.3 Any work damaged by failure to provide protection above required, shall be removed and replaced with new work at the Contractor's expense.

7.15.4 The Contractor shall provide and maintain on the premises, where directed, watertight storage shed (or sheds) for storage of all materials, which might be damaged by exposure to weather.

## 7.16 Fire Hazards

7.16.1 Wherever and whenever any burning, welding, cutting or soldering operation is in progress, or equipment is in use, or any work involving a fire hazard, is performed, the Contractor responsible for such operation shall have at all times acceptable fire extinguisher or protection within five (5) feet of the operation.

## 7.17 Dismissal

7.17.1 Any foreman or workman employed by the Contractor or by any Subcontractor who, in the opinion of the Director, Public Works Division and/or the Designer, does not perform his work in a proper and skillful manner, or is disrespectful, intemperate, disorderly, intoxicated or otherwise objectionable shall at the written request of either of the above, be forthwith discharged by the Contractor or Subcontractor employing such foreman or workman and he shall not be employed again on any portion of the Work without the written consent of the Director of the Division of Public Works and the Designer. Should the Contractor fail to furnish suitable and sufficient machinery, equipment or personnel for the proper prosecution of the Work, the Owner or Designer may withhold all payments that are or may become due, or may suspend the Work until such orders are upheld.

## ARTICLE 8 TIME

### 8.1 Definitions

8.1.1 Unless otherwise provided, the Contract Time is the period of time allotted in the Contract Documents for Substantial Completion of the Work as defined herein, including authorized adjustments thereto.

8.1.2 The date of commencement of the Work is the date established in a notice to proceed. If there is no notice to proceed, it shall be the date of the Governor's signature on the Owner-Contractor Agreement or such other date as may be established therein.

8.1.3 The Date of Substantial Completion of the Work, or designated portion thereof, is the date certified by the Director, Public Works Division when construction is sufficiently complete, in accordance with the Contract Documents, so the Owner may occupy or utilize the Work, or designated portion thereof, for the use for which it is intended.

8.1.4 The term day as used in the Contract Documents shall mean calendar day unless otherwise specifically designated.

### 8.2 Progress and Completion

8.2.1 All time limits stated in the Documents are of the essence of the Contract.

8.2.2 The Contractor shall begin the Work on the date of commencement as defined herein. He shall carry the Work forward expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

8.2.3 The Owner fully expects the Contractor to employ any and all means necessary to complete the Work within the Contract Time. Conduct of the Owner's affairs, such as unforeseen site conditions or delay in processing change orders, shall not be viewed as justification for delaying the Project unless the Owner can be shown to have breached the Contract. Contractor must employ all reasonable means to execute the Project in a timely manner and in conformance with the Contract Documents even if the Contractor or Designer seeks legal remedy against the Owner for claim of damage.

### 8.3 Delays and Extensions of Time

8.3.1 If the Contractor is delayed at any time in the progress of the Work by any act or neglect of the Owner or the Designer, or by any employee of either, or by any separate Contractor employed by the Owner, or by changes ordered in the Work, or by labor disputes, fire, unusual delay in transportation, adverse weather conditions not reasonable to anticipate, unavoidable casualties, or

any causes beyond the Contractor's control, or by delay authorized by the Owner pending arbitration, or by any other cause which the Designer determines may justify the delay, then the Contract Time shall be extended by a Change Order for such reasonable time as the Designer may determine.

8.3.2 Claims for extension of time shall be made in writing to the Designer. In case of a continuing delay only one claim is necessary. The Contractor shall provide an estimate of the probable effect of such delay on the progress of the Work.

8.3.3 If no agreement is made stating the dates upon which interpretations as provided in Article 2.2 shall be furnished, then no claim for delay shall be allowed on account of failure to furnish such interpretations until fifteen days after written request is made for them, and not unless such claim is reasonable.

8.3.4 This Paragraph 8.3 does not exclude the recovery of damages for delay by either party under other provisions of the Contract Documents.

## ARTICLE 9 PAYMENTS AND COMPLETION

### 9.1 Contract Sum

9.1.1 The Contract Sum is the total amount payable by the Owner for the performance of the Work under the Contract Documents.

### 9.2 Schedule of Values

9.2.1 Before the first application for payment, the Contractor shall submit to the Owner a schedule of various parts of the Work, including quantities if required by the Owner, aggregating the total Contract Sum, divided so as to facilitate payments to Subcontractors in accordance with Article 5.3, made out in such form as the Owner and the Contractor may agree upon, and supported by such data to substantiate its correctness as the Owner may require. Each item in the Schedule of Values shall include its proper share of overhead, profit, and other general charges. This schedule, when approved by the Owner, shall be used as a basis for the Contractor's Applications for Progress and Final Payments.

### 9.3 Progress Payments

9.3.1 Completed work: The Contractor shall submit to the Designer an itemized Application for Payment, supported by such data substantiating the Contractor's right to payment as the Designer may direct. The Owner shall make payments on account of the Contract, upon issuance of Certificates of Payment certified by the Designer and the Owner's Representative, for labor and materials incorporated into the Work at the rate of ninety four (94%) percent of such value until fifty (50%) percent of the value of the Work is completed. After that fifty (50%) percent, no further retainage will be deducted. The Director, Public Works Division has the option to require that three (3%) percent of the value of the Work be retained throughout the duration of the entire Contract. The retainage schedule shall be determined prior to award of Contract. Retainage may be paid with final payment at the discretion of the Director, Public Works Division, but shall not be paid in any event until a minimum of sixty one (61) days after all work is completed.

9.3.2 Materials Stored: Payments may be made on account for materials or equipment not incorporated in the Work, but delivered and suitably stored at the site. With written approval of the Owner, materials may be stored at another location other than the Work site if properly identified as the property of the Owner and properly protected. Storage of material at the place of business of the vendor is not acceptable (25 IAC 2-9-2). Such payments shall be conditional upon the submission by the Contractor of one of the following: 1) receipts marked by the supplier as paid; 2) supplier's final waiver of lien listing specific materials involved; 3) invoice with copy of canceled check showing payment; or 4) such other evidence of payment as the Owner may require in lieu thereof to establish ownership of all items except those listed as miscellaneous materials below. For the aggregate of miscellaneous stored materials for which payment is requested and above proof of payment is not available, a complete list will be provided along with the affidavit of payment. Upon certification by the Owner's representative that the listed materials are suitably stored, payment can be made. Miscellaneous materials are defined as pipe, fittings, wire, conduit, etc., normally stored as stock items in Contractor's warehouse. For materials stored other than at the construction site applicable insurance and transportation to the site shall be provided by the Contractor.

9.3.3 As stored materials are incorporated into the Work, the value shall be removed from the total value of stored materials requested in successive payments. Proof of ownership through one of the above methods will be required for additional materials. When, in the judgment of the Owner, retainage for completed work is not sufficient in relation to excessive amounts requested for stored materials or equipment, the Owner may elect to place the retainage for such materials or equipment in escrow. This retainage shall apply as a credit toward retainage due to be held for completed work on future payments.

9.3.4 The Contractor warrants that title to all work, materials and equipment covered by an Application for Payment will pass to the Owner either by incorporation in the construction or upon the receipt by the Contractor of payment, whichever occurs first, free and clear of all liens, claims, security interest or encumbrances, hereinafter referred to in this Article 9 as "liens"; and that no Work, materials or equipment covered by an Application for Payment will have been acquired by the Contractor, or by any other person performing work at the site or furnishing materials and equipment for the Project, subject to an agreement under which an interest

therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person.

9.3.5 The Contractor shall accompany each application for payment request with a certification that he paid to all Subcontractors (fabricators) within ten (10) days of receipt of payment that pro rata amount of funds he has received from the Owner for the value of work or services (fabricated materials or equipment) performed by the Subcontractor (supplied by fabricator) contained in previous progress payments. The Contractor's inclusion of a value of subcontract work in his progress pay estimate is prima facie evidence of acceptance of work having such a value; therefore, if the Owner receives a certification from a Subcontractor that he has not been paid such amounts as were included in the Contractor's partial billing and subsequently paid to the Contractor by the Owner, then the Owner will hold all subsequent partial payment requests until satisfactory evidence is received from the Subcontractor that he has been paid such amounts presented to the Owner by the Contractor, paid to the Contractor by the Owner, and not distributed by the Contractor to the Subcontractor. The making of an incorrect certification of either partial payment or final payment may be considered by the Owner to be a breach of contract, and it may exercise all of its prerogatives set out in the Contract in addition to the remedies for falsifying an affidavit. Such an action could result in a suspension of qualification with the State Certification Board for a period of up to two (2) years.

#### 9.4 Certificates for Payment

9.4.1 When the Contractor has made application for payment as above, the Designer will issue a Certificate of Payment to the Owner for such amount as he determines to be properly due, or state in writing his reasons for withholding a certificate as provided in Articles 9.5.1.

9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Designer to the Owner, based on the Designer's observations at the site as provided in Article 2.2.4 and the data comprising the Application for Payment, that the Work has progressed to the point indicated, and that, to the best of his knowledge, information and belief, the quality of work is in accordance with the Contract Documents subject to an evaluation of the Work as a functioning whole upon substantial completion, to the results of any subsequent tests called for in the Contract documents, to minor deviations correctable prior to the next certificate for payment and to any specific qualifications stated in his certificate, and that the Contractor is entitled to payment in the amount certified.

9.4.3 The Designer's final Certificate for Payment will constitute a further representation that the conditions precedent to the Contractor's being entitled to final payment as set forth in Article 9.7 have been fulfilled. However, by issuing a Certificate, the Designer shall not thereby be deemed to represent that he has made any examination to ascertain how or for what purpose the Contractor has used the monies paid on account of the Contract Sum.

9.4.4 The Owner shall make payment as soon as the fiscal procedure of the State can process same after receipt from the Designer of the Certificate for Payment. The fiscal procedure by the State can include, but not be limited to, review by the Owner's using agency, verification of the Certificate by the Owner's Site Representative, review for accuracy of form and calculation by the Owner's accountant, review by the Owner's project management and execution by the Director, Public Works Division and others.

9.4.5 No certificate for a progress payment or progress payment for partial or entire occupancy of the Project by the Owner shall constitute an acceptance of work not in accordance with the Contract Documents.

9.4.6 Pursuant to IC. 4-13.6-7-2 all Contract awards of One Million Dollars (\$1,000,000) or above, if elected by the Contractor, an escrow agent will be selected by the State with whom the retainage funds for this Contract will be deposited and held until receipt of notice from the Director, Public Works Division (Escrow Form DAPW 32A) and from all other necessary parties as specified in and in accordance with the procedures and provisions of said Act.

#### 9.5 Payments Withheld

9.5.1 The Designer (or Owner) will not approve an application in whole or in part, if in his opinion, he is unable to make representations to the Owner as provided in Article 9.4. The Designer (or Owner) will not approve Application for Payment or, because of subsequent inspections, may nullify the whole or any part of the Certificate for Payment previously issued to such extent as may be necessary in his opinion to protect the Owner from loss because of:

- A. defective work not remedied,
- B. claim filed or reasonable evidence indicating probable filing of claims,
- C. failure of the Contractor to make payments properly to Subcontractors or for materials, equipment or labor,
- D. reasonable doubt that the Contract can be completed for the unpaid balance,
- E. damage to another Contractor,
- F. reasonable indication that the Owner may be damaged by delay in receiving use of the Work as scheduled, or,
- G. unsatisfactory prosecution of the Work by the Contractor.

9.5.2 When the above grounds are removed, payment shall be processed for amounts withheld.



## 9.6 Failure of Payment

9.6.1 If the Designer should fail to issue any Certificate for Payment, through no fault of the Contractor, or if the Owner should fail to pay the Contractor in a reasonable time considering the fiscal procedures of the State for processing same after receipt from the Designer the amount certified by the Designer, then the Contractor may, after seven (7) additional days, give written notice to the Owner and Designer, that work will stop until payment of the amount owing has been received.

## 9.7 Substantial Completion and Final Payment

9.7.1 When advised by the Contractor that the Work or a designated portion thereof is substantially complete, the Designer; the Director, Public Works Division, and the Contractor shall determine jointly by inspection that the Work is substantially complete. If they determine that the Work is substantially complete, the Contractor shall then prepare a Certificate of Substantial Completion with an accompanying list of incomplete items of work (punch list), and submit it to the Designer for his signature and subsequent forwarding for approval by the Director, Public Works Division. The Certificate shall fix the date of Substantial Completion and shall state the responsibilities of the Owner and the Contractor for maintenance, heat, utilities and insurance.

9.7.2 Upon approval of the above, and notice that the Work is ready for final acceptance, the Designer, the Contractor and Owner will promptly make final review, and when they find the Work acceptable under the Contract and the Contract fully performed, the Contractor shall promptly submit the final Certificate for Payment with all other required documents, showing that the Work has been completed in accordance with the terms and conditions of the Contract, and that the entire balance in said final certificate, is due and payable.

9.7.3 Neither the final payment nor any part of the retained percentage shall become due until the Contractor shall submit to the Designer releases or waivers of all liens arising out of the Contract; an affidavit that the releases and waivers include all the labor, materials, and equipment for which a lien could be filed and that all payrolls, material bills, and other indebtedness connected with the Work for which the Owner or its property might in any way be responsible have been paid or otherwise satisfied; and such other data establishing payment or satisfaction of all such obligations as the Owner may require. If any such lien or claim remains unpaid, the Contractor shall refund to the Owner all monies that the latter may be compelled to pay in discharging such lien or claim, including all costs.

9.7.4 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor, and the Designer so confirms, the Owner shall, upon certification by the Designer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted, or such portion as may be available from funds not already released to an escrow agent pursuant to IC 4-13.6-7. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

9.7.5 The making of final payment shall constitute a waiver of all claims by the Owner except those arising from:

- A. unsettled liens,
- B. faulty work appearing after Substantial Completion,
- C. failure of the Work to comply with the requirements of the Contract Documents,
- D. terms of any special guarantees required by the Contract Documents.

9.7.6 If upon Substantial Completion of the Work there are any remaining uncompleted minor items, the Owner shall withhold, until those items are completed, an amount equal to two hundred percent (200%) of the value of each item as determined by the Designer or Owner.

9.7.7 The acceptance of final payment shall constitute a waiver of all claims by the Contractor, except those previously made in writing and still unsettled and covered by other agreed arrangements.

## ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

### 10.1 Safety Precautions and Programs

10.1.1 The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work.

### 10.2 Safety of Person and Property

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

- A. all employees on the Project and all other persons who may be affected thereby,
- B. all the Work and all materials and equipment to be incorporated therein, whether in storage on or off the site, and,
- C. other property at the site or adjacent thereto, including trees, shrubs, lawns, pavements, roadways, structures and

utilities not designated for removal, relocation or replacement in the course of construction.

10.2.2 The Contractor shall comply with all applicable laws, ordinances, rules, regulations and orders of any public authority having jurisdiction for the safety of persons or property or to protect them from damage, injury, or loss. He shall erect and maintain, as required by the conditions and progress of the Work, all necessary safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying owners and users of adjacent utilities.

10.2.3 All damage or loss to all property specified herein caused directly or indirectly, in whole or in part, by the Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable, shall be remedied by the Contractor, except damage or loss attributable solely to faulty Contract Documents or to the acts or omissions of the Owner, or Designer or their employees, or for those whose acts either of them may be liable.

10.2.4 The Contractor shall designate a responsible member of his organization on the Work whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent, unless otherwise designated in writing by the Contractor to the Owner and the Designer.

10.2.5 When the use or storage of explosives or other hazardous materials or equipment is necessary for the prosecution of the Work, the Contractor shall carry on such activities under the supervision of properly qualified personnel.

10.2.6 The Contractor shall not overload, or permit any part of the Work to be loaded so as to endanger its safety.

10.2.7 All excavations creating a trench of five (5) or more feet in depth shall strictly adhere to the shoring and other safety requirements called for and described under Indiana OSHA Regulation 29 C.F.R. 1926, Subpart "P", for trench safety systems.

### 10.3 Emergencies

10.3.1 In an emergency affecting the safety of persons or property, the Contractor shall act, at his discretion, to prevent threatened damage, injury or loss. Any additional compensation or extension of time claimed by the Contractor because of emergency work shall be determined as provided for in Article 12, Changes in the Work, and he shall notify the Owner of such a decision within seven (7) days of the event giving rise to such claim.

## ARTICLE 11 INSURANCE

### 11.1 General Requirements for Insurance

11.1.1 The Contractor will be required to furnish to the Owner, evidence that he has complied with all items of insurance listed herein. All insurance policies/certificates shall be on file with the Owner prior to release of the signed Contract and commencement of work.

11.1.2 The Contractor shall purchase and maintain, with a company or companies licensed to do business in Indiana, such insurance as will protect him from claims set forth below, arising out of or resulting from the Contractor's operations under the Contract, whether such operations be by the Contractor or by any Subcontractor or by anyone directly or indirectly employed by any of them:

- A. claims under Workmen's Compensation Acts and other employee benefit acts;
- B. claims for damages because of bodily injury, personal injury, occupational sickness or disease, or death of his employees;
- C. claims for damages because of bodily injury, personal injury, sickness, disease or death of any person other than his employees;
- D. claims for damages to tangible property, including loss of use thereof.

11.1.3 This insurance shall be written for not less than any limits of liability specified herein, or required by law, whichever is greater. Policies or certificates of insurance, acceptable to the Owner, shall be filed with the Owner prior to execution of the Contract. These Certificates shall contain a provision that coverages afforded under the policies will be for the life of the Work.

11.1.4 Policies (certificates) shall show name and complete address of the Company, expiration date or dates, and policy number or numbers. Policies shall not be canceled until at least thirty (30) days prior written notice has been given to the Owner and acknowledged by the Owner in writing.

## 11.2 Property Insurance

11.2.1 The Contractor shall furnish and maintain, at the Contractor's expense, Fire, Extended Coverage, Vandalism, and Malicious Mischief Insurance (Builder's Risk), in the sum of 100% of the Contract amount. Builder's Risk insurance shall cover the structure on/in which the Work of this Contract is to be done including items of labor and material connected therewith, whether in or adjacent to the structure insured; material in place or to be used as part of the permanent construction, including surplus materials; shanties, protective fences, bridges, or temporary structures; miscellaneous materials and supplies incident to the Work; scaffolding, staging, towers, forms, and equipment, if included in the cost of the Work. This insurance need not cover any tools owned by mechanics, or any tools, equipment, scaffolding, staging, towers, and forms owned or rented by the Contractor, the capital value of which is not included in the cost of the Work.

11.2.3 Any loss under this Article 11.2 is to be adjusted with the Owner, and made payable to the Owner as trustee for the insured, as their interests may appear.

## 11.3 Liability Insurance

11.3.1 The Contractor and their subcontractors ( if any) shall secure and keep in force during the term of this Contract the following insurance coverages (if applicable) covering the Contractor for any and all claims of any nature which may in any manner arise out of or result from Contractor's performance under this Contract:

- A. Commercial general liability, including contractual coverage, and products or completed operations coverage (if applicable), with minimum liability limits not less than \$700,000 per person and \$5,000,000 per occurrence unless additional coverage is required by the State. The State is to be named as an additional insured on a primary, non-contributory basis for any liability arising directly or indirectly under or in connection with this Contract.
- B. Automobile liability for owned, non-owned and hired autos with minimum liability limits of \$700,000 per person and \$5,000,000 per occurrence. The State is to be named as an additional insured on a primary, non-contributory basis.
- C. The Contractor shall provide proof of such insurance coverage by tendering to the undersigned State representative a certificate of insurance prior to the commencement of this Contract and proof of workers' compensation coverage meeting all statutory requirements of IC §22-3-2. In addition, proof of an "all states endorsement" covering claims occurring outside the State is required if any of the services provided under this Contract involve work outside of Indiana.
- D. The Contractor's insurance coverage must meet the following additional requirements:
  - 1. The insurer must have a certificate of authority or other appropriate authorization to operate in the state in which the policy was issued.
  - 2. Any deductible or self-insured retention amount or other similar obligation under the insurance policies shall be the sole obligation of the Contractor.
  - 3. The State will be defended, indemnified and held harmless to the full extent of any coverage actually secured by the Contractor in excess of the minimum requirements set forth above. The duty to indemnify the State under this Contract shall not be limited by the insurance required in this Contract.
  - 4. The insurance required in this Contract, through a policy or endorsement(s), shall include a provision that the policy and endorsements may not be canceled or modified without thirty (30) days' prior written notice to the undersigned State agency.
  - 5. The Contractor waives and agrees to require their insurer to waive their rights of subrogation against the State of Indiana.
- E. Failure to provide insurance as required in this Contract may be deemed a material breach of contract entitling the State to immediately terminate this Contract. The Contractor shall furnish a certificate of insurance and all endorsements to the State before the commencement of this Contract.
- F. Boiler and Machinery Explosion Insurance shall be required when the Work includes boiler, other pressure

vessels or steam piping installation or repair.

- G. After June 30, 2015, this entire Article will apply to any contractor that will be on the construction site pursuant to IC 5-16-13 and an acceptable certificate of insurance will be provided by each and every contractor

## ARTICLE 12 CHANGES IN THE WORK

### 12.1 Change Orders

12.1.1 The Owner, without invalidating the Contract, may order changes in the Work consisting of additions, deletions, or modifications, with the Contract Sum and the Contract Time being adjusted accordingly. All such changes in the Work shall be authorized by Change Order, and shall be executed under the applicable conditions of the Contract Documents.

12.1.2 A Change Order is a written order to the Contractor compiled and reviewed by the Designer, prepared by the Owner and then signed by the Owner and the Contractor. The order is issued after the execution of the Contract authorizing a change in the Work, and documenting any adjustment in the Contract Sum and/or the Contract Time. The Contract Sum may be changed only by change order.

12.1.3 The value of any work involved in a change in the Work shall be determined in one or more of the following ways, in order of priority listed:

- A. by mutual acceptance of a lump sum. For all amounts over \$500, the Contractor shall provide a complete listing of quantities and unit prices of materials, hours of labor with cost per hour, and separate agreed percentages for any overhead and profit. The maximum aggregate increase for overhead and profit (including all home office and field office overhead) for any Subcontractor or for the Contractor performing his own work is fifteen (15%) percent; the maximum increase for a Contractor on work performed by a Subcontractor is five (5%) percent. If the cost of performance and payment bond(s) is shown as a separate line item in the Contractor's schedule of values for the project, then an increase will be permitted to provide for the additional cost of the bond(s). If the cost of the bond(s) is not indicated on the Contractor's schedule of values for the Project, any increase in cost for bond(s) shall be included in the Contractor's allowed overhead. For listings under \$500, list lump sum for each item, or,
- B. by unit prices named in the Contract or subsequently agreed upon, or,
- C. by cost plus a mutually acceptable fixed or percentage fee.

12.1.4 Should conditions be encountered below the surface of the ground that are:

- A. at variance with the conditions indicated by the Contract Documents, and
- B. different than could be expected after a reasonable viewing of the site by the bidders, and
- C. not evident from available soil samples,

then the Contract sum may be equitably adjusted by Change Order upon claim by Contractor made within a reasonable time after the first observance of the conditions.

12.1.5 If the Contractor claims that a written interpretation issued pursuant to Article 1.2 or a written order for a minor change issued pursuant to Article 12.3 involves additional cost or time, the Contractor shall make such claim as provided in Article 12.2.

### 12.2 Claims for Additional Cost or Time

12.2.1 If the Contractor wishes to make a claim under the provisions of the Contract Documents for an increase in the Contract Sum or an extension in the Contract Time, he shall give the Designer written notice thereof within fifteen (15) days after the occurrence of the event giving rise to such claim. This notice shall be given by the Contractor and authority received in writing from the Owner before proceeding to execute the Work, except in an emergency endangering life or property. No such claim shall be valid unless so made. Any approved change in the Contract Sum or Contract Time resulting from such claim shall be incorporated in a Change Order, initiated by the Designer and executed by the Owner. If the Designer does not initiate or the Owner execute a Change Order within a reasonable time in response to the request, such lack of action shall be construed as prima facie evidence of rejection of the request. For the purpose of this section "reasonable time" is expected not to exceed 30 days after receipt by the Owner.

### 12.3 Minor Changes in the Work

12.3.1 The Designer shall have authority, with Owner's approval, to order minor changes in the Work not involving an increase in the Contract Sum or an extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such change may be affected by written field order, with copy transmitted to the Owner. Such minor changes need not be approved in writing by the Owner; however, the Owner may provide written approval of any substitution of significant materials or equipment.

### 12.4 Field Orders

12.4.1 The Designer may issue written field orders, which interpret the Contract Documents in accordance with Article 1.2.4 without change in Contract Sum or Contract Time. The Contractor shall carry out such field orders promptly. The Designer shall

transmit copies of field orders to the Owner.

## ARTICLE 13 EXAMINATION AND CORRECTION OF WORK

### 13.1 Examination of Work

13.1.1 If any portion of the Work should be covered contrary to the request of the Designer or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the Designer, be uncovered for his observation and shall be replaced at the Contractor's expense.

13.1.2 Examination of questioned work may be ordered by the Designer with the approval of the Owner, and if so ordered the Work must be uncovered by the Contractor. If such work were found in accordance with the Contract Documents, the cost of re-examination and replacement shall, by appropriate change order, be charged to the Owner. If such work be found not in accordance with the Contract Documents, the Contractor shall pay such costs, unless it is found that the defect in the Work was caused by a separate Contractor employed as provided in Article 6 and in that event, the separate Contractor shall pay such costs.

### 13.2 Correction of Work before Substantial Completion

13.2.1 The Contractor shall promptly remove from the site all work rejected by the Designer as failing to conform to the Contract Documents, whether or not incorporated in the Project, and the Contractor shall promptly replace and re-execute his own work in accordance with the Contract Documents and without cost to the Owner and shall bear the cost of repair to or replacement of all work of separate Contractors destroyed or damaged by such removal or replacement.

13.2.2 If the Contractor does not remove such rejected work within a reasonable time, fixed by written notice from the Designer, the Owner may remove and store the material at the expense of the Contractor. If the Contractor does not agree to pay or credit the Contract with the cost of such removal within ten days thereafter, the Owner may acquire a lien upon such property and materials. If proceeds of lien foreclosure do not cover all costs, which the Owner has then borne, the difference shall be deducted from the amount to be paid to the Contractor.

### 13.3 Correction of Work after Substantial Completion

13.3.1 The Contractor shall correct all faults and deficiencies in the Work which appear within one year of the date of substantial completion or such longer period of time as may be prescribed by the terms of any special guarantees called for by the Contract Documents, and he shall pay for all damage to other work caused thereby. The Contractor shall remove all defective work where necessary.

13.3.2 If the Contractor does not correct such faulty or defective work and remove defective work where necessary, within a reasonable time fixed by the Designer in writing, the Owner may do the corrective work and remove the defective work, as described in Article 13.2 above.

13.3.3 All costs attributable to correcting and removing faulty or defective work shall be borne by the Contractor.

13.3.4 The obligations of the Contractor under this Article 13.3 shall be in addition to and not a limitation of any obligations imposed upon him by special guarantees called for by the Contract Documents or otherwise prescribed by law.

## ARTICLE 14 TERMINATION OF THE CONTRACT

### 14.1 Termination by the Contractor

14.1.1 If the Work is stopped for a period of thirty days under an order of any court or other public authority through no act of fault of the Contractor or of anyone employed by the Contractor, or if the Work should be stopped for a period of thirty days by the Contractor for the Designer's failure to issue a Certificate for payment as provided in Article 9.6, or for the Owner's failure to make payment thereon as provided in said Article, then the Contractor may, upon seven days' written notice to the Owner and the Designer, terminate the Contract and recover from the Owner, in satisfaction of all claims of the Contractor, payment for all work executed, except those items involved in Designer's failure to issue Certificate, or Owner's failure to make payment.

### 14.2 Termination by the Owner

14.2.1 If the Contractor should be adjudged bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should persistently or repeatedly refuse or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen or proper materials, or if he should fail to make prompt payment to Subcontractors for materials or labor, or persistently disregard laws, ordinances, rules, regulations or orders of any public authority or otherwise be guilty of a substantial violation of a provision of the Contract Documents, then the Owner, upon certification by the Designer that sufficient cause exists to justify such action, may without prejudice to any right or remedy against the Contractor or his surety and after giving the Contractor and his surety seven days written notice, terminate the employment of the Contractor and take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor and finish the Work by whatever method the Owner

deems expedient. In such case the Contractor shall not be entitled to receive any further payment until the Work is completed, and an accounting made as set out below.

14.2.2 If the unpaid balance of the Contract sum exceeds the cost of finishing the Work, including compensation for the Designer's additional services such excess shall be paid to the Contractor. If such cost exceeds such unpaid balance, the Contractor shall pay the difference to the Owner. The Designer shall certify the cost incurred by the Owner as herein provided.

END

# Indiana Department of Administration

## M/WBE Participation Policy for Construction Projects

### I. Introduction

The Indiana Department of Administration (“IDOA”) in its commitment to Minority and Women participation in the state’s procurement and contracting process, will require MBE and WBE participation or a best-efforts waiver as a specification in bids for construction services \$150,000 and over with subcontracting opportunities effective January 1, 2006. *See* Indiana Code 5-22-7, 5-22-7-2, 5-22-7-4.

### II. Definitions

“Application for MBE and WBE Program Waiver” means documents submitted by Bidder for relief from contract goal after demonstrating all reasonable good faith efforts were made by the Bidder for the purpose of fulfilling the contract goal. The Application for MBE and WBE Program Waiver may be submitted prior to the bid due date or included in the bid package response.

“Certification” means verification by the Indiana Department of Administration, Minority and Women's Business Enterprises Division (“MWBED”) or an organization accepted by MWBED with respect to the authenticity of a minority or women owned business enterprise.

“Commercially useful function” Determination that an enterprise performs a commercially useful function will be made based on the following considerations:

- (1) An MBE or a WBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the MBE or WBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself. To determine whether an MBE or a WBE is performing a commercially useful function, one must evaluate the following:
  - (A) The amount of work subcontracted.
  - (B) Industry practices.
  - (C) Whether the amount the enterprise is to be paid under the contract is commensurate with the work it is actually performing.
  - (D) The credit claimed for its performance of the work.
  - (E) Other relevant factors.
- (2) An MBE or a WBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of MBE or WBE participation. In determining whether an MBE or a WBE is such an extra participant, one must examine similar transactions, particularly those in which MBEs or WBEs do not participate.
- (3) In the case of construction contracts, if:
  - (A) an MBE or a WBE does not perform or exercise responsibility for at least the agency’s requisite percent of the total cost of its contract with its own workforce; or
  - (B) the MBE or WBE subcontracts a greater portion of the work of a contract than would be expected on the basis of normal industry practice for the type of work involved;it is presumed that the enterprise is not performing a commercially useful function.

“Letter of Commitment” means a letter obtained from the MBE and WBE’s by the Bidders. The Letter of Commitment is a signed letter(s), on company letterhead, from the minority and/or women certified business. It must be produced no later than 24 hours after the bid due date and time. This letter(s) shall state and will serve as acknowledgement from the minority and/or women certified business of their level of participation in this solicitation, the dollar amount of the commitment, the scope of service or product to be provided and the anticipated dates of utilization.

“Minority and Women Business Enterprises Division (MWBED)” means the Division which acts on behalf of the state to actively promote, monitor, and enforce the MBE AND WBE program. The final authority on all matters pertaining to the maintenance and administration of the MBE AND WBE program and compliance thereto.

“Minority/Woman Business Enterprise (MBE and WBE)” means an individual, partnership, corporation, limited liability company, or joint venture of any kind that is at least fifty-one percent (51%) owned and controlled by one (1) or more persons who are United States citizens and a member(s) of a minority group. The MBE and WBE must meet the eligibility requirements of 25 IAC 5.

“Participation Plan” means the IDOA prescribed document that sets forth the MBE and WBE subcontractors that will perform work under the contract.

### **III. Minority and Women Business Enterprise Certification**

MBE and WBEs must be listed on the IDOA directory of certified firms at the time the bid is submitted to be eligible to meet the contract goals. The bidder should verify that a firm is certified before the bid is submitted.

Questions regarding Certification should be addressed to the following:

Indiana Department of Administration  
Minority and Women's Business Enterprises Division  
402 West Washington Street, Room W469  
Indianapolis, IN 46204  
(317) 232-3061  
[www.buyindiana.in.gov](http://www.buyindiana.in.gov)  
[mwbe@idoa.in.gov](mailto:mwbe@idoa.in.gov)

### **IV. Bidding Process**

IDOA will review projects for viable subcontracting opportunities. All projects will be governed by this policy unless otherwise stated.

A representative from MWBED will attend most pre-bid meetings to discuss and answer questions related to the MBE and WBE participation requirement. The MWBED will be available to assist Bidders in locating MBE and WBE firms to engage in the contract.

The 2007-2008 Contract Goals for construction projects are 7% for MBE’s and 5% for WBE’s.

Effective January 1, 2006, the following procedures will be implemented in the acceptance and evaluation of responsive and responsible bids.



Bidders must produce a Participation Plan on the approved form listing the utilization of MBE and WBE subcontractors who will be providing a commercially useful function on the project. Letter of Commitment from MBE and WBE firms they plan to engage in the contract if successful on the bid

Per 25 IAC 5-6-2(d), all prime contractors, including MBE and WBE prime contractors, must meet the sub-contracting goals through use of businesses found in the IDOA directory of certified firms. MBE and WBE prime contractors will get no credit toward the contract goal for the use of their own workforce.

If the bidder can not achieve the Contract Goals established for the bid package, the bidder shall submit a Waiver Application on the form supplied by MWBED. Bidders may submit waiver applications to MWBED up to two business days in advance of the bid due date to obtain advance approval of the waiver, or the application may be submitted without advance approval with the bid package. Bidders who submit a Participation Plan that will achieve the Contract Goals are not required to submit a Waiver Application.

If a partial waiver is being requested, a Participation Plan listing the MBE and WBE certified firms that will be used to satisfy the portion of the goal that will be met, must be included. Partial waivers may be requested using the waiver application process discussed above. A faxed copy of the Letter of Commitment for each MBE and WBE firm that is listed in the Participation Plan must be provided by the Low Bidder to the appropriate department no later than 24 hours after the bid due date and time. The original letter(s) must be provided upon receipt.

MWBED will review Applications for MBE and WBE Program Waivers and make a determination as to the bidder's responsiveness and good faith efforts. Evidence of efforts should be included with the waiver form. Any combination of the following criteria may be utilized in determining whether good faith efforts have been made:

- A. Notice to MBE and WBEs. Whether and when the bidder provided written notice, by mail, hand delivery, facsimile or electronic transmission to all qualified MBE and WBEs that perform the type of work to be subcontracted and advising the MBE and WBEs:
  - 1. of the subject work the bidder intends to subcontract;
  - 2. that their interest in Subcontracts is being solicited;
  - 3. how to obtain information for the review and inspection of Contract plans and specifications; and
  - 4. how to bid on the subcontracting opportunities and deadlines.
  
- B. Economically Feasible Subcontract. Whether the bidder selected economically feasible portions of the work to be performed by an MBE and WBE, including, when appropriate, breaking Subcontracts into smaller pieces or combining elements of work into economically feasible units. The ability of the bidder to perform the work with its own forces will not excuse the bidder from making positive efforts to meet the MBE and WBE goals.

- C. Consideration of all MBE and WBE Quotations. Whether the bidder considered all quotations received from MBE and WBEs and, for those quotations not accepted, an explanation of why the MBE and WBE will not be used during the course of the Project. Receipt of a lower quotation from a non-MBE and WBE will not, in itself, excuse bidder's failure to meet the MBE and WBE goals. Price alone does not constitute an acceptable basis for rejecting MBE and WBE subcontractor bids unless the bidder can demonstrate that a reasonable price was not obtained from an MBE and WBE.
- D. MBE and WBE Barrier Assistance. Whether the bidder provided assistance to interested MBE and WBE firms: in reviewing the Contract plans and specifications or addressing other barriers to subcontracting.
- E. Advertisement. Whether the bidder advertised to search for prospective MBE and WBEs to participate in the Contract.
- F. Agency Assistance. Whether the bidder contacted any of the following agencies for the purpose of locating prospective MBE and WBEs:
1. Indiana Department of Administration  
Minority and Women's Business Enterprises Division  
402 West Washington Street, Room W469  
Indianapolis, IN 46204  
(317) 232-3061  
[mwbe@idoa.in.gov](mailto:mwbe@idoa.in.gov)
  2. Indiana Business Diversity Council, Inc.  
2126 North Meridian Street  
Indianapolis, IN 46202  
(317) 921-2678  
[mdhouse@inbdc.org](mailto:mdhouse@inbdc.org)
- G. Research Participation Areas. Whether the bidder made efforts to research other possible areas of participation including supplying, shipping, engineering and any other role that may contribute to the production and delivery of the products or services needed to fulfill the Contract.
- H. Response Time. The time the bidder allowed for a meaningful response to its solicitations.
- I. Documentation of Statements from MBE and WBEs. Any documentation or statements received from MBE and WBEs who have been listed as having been contacted by the bidder.
- J. Availability of MBE and WBEs. The availability of MBE and WBEs to perform the work and the availability, or lack of availability, of MBE and WBEs in the location where the work is to be performed.
- K. Other Criteria. Any other criteria deemed appropriate by MWBED.

This list is not intended to be exclusive or exhaustive. The bidder may also submit documentation of other types of efforts that they have taken which reflect the quality, quantity and intensity of those efforts.

When evaluating Waiver Applications, MWBED reserves the right to verify that any information supplied on the Participation Plan and Waiver Application is accurate. By the submittal of a bid, the bidder acknowledges the right of MWBED to ensure compliance with the Participation Program and thereby agrees to provide, upon request, earnest, diligent and prompt cooperation in MWBED's verification process.

In cases where MWBED concludes the bidder's Participation Plan and the Waiver Application is deficient through no fault of the bidder, the bidder may be instructed to submit a modified Participation Plan within five (5) working days from the date of such notice. Failure to submit the modified Participation Plan within the specified period of time, may result in the bid being considered non-responsive and may be rejected.

In cases where MWBED concludes that the Participation Plan and Waiver Application is deficient or in cases where MWBED has determined that the bidder has not cooperated with its efforts to verify the submitted documentation, a bid may be considered non-responsive and may be rejected.

If the established Contract Goals are not achieved but the Waiver Application is granted, the bid will be considered responsive. If the established Contract Goals are not achieved and the Waiver Application is denied, a bid may be considered non-responsive and may be rejected.

Failure to provide the Participation Plan and/or a Waiver Application accounting for the total participation goal set for the project will result in the bid being considered non-responsive and the bid may be rejected.

By submission of a bid, a bidder thereby acknowledges and agrees to be bound by the regulatory process set forth in 25 IAC 5.

A bidder who knowingly or intentionally misrepresents the truth about either the status of a firm that is being proposed as an MBE and WBE or who misrepresents the level or the nature of the amount to be subcontracted to the MBE and WBE may suffer penalties pursuant to Indiana Code 5-16-6.5-5.

A Contractor who knowingly or intentionally misrepresents the truth about his/her status as an MBE and WBE or who misrepresents the level or the nature of the amount subcontracted to his/her firm may suffer penalties pursuant to Indiana Code 35-44-2-1.

## **V. Compliance**

Contractors shall contract with all MBE and WBE firms listed on the Participation Plan. The subcontract or purchase order shall be for an amount that is equal to, or greater than, the total dollar amount listed on the form.

Contractors shall notify MWBED immediately if any firm listed on the Participation Plan refuses to enter into a subcontract or fails to perform according to the requirements of the subcontract.

The Contractor's proposed MBE and WBE Contract Goals will become incorporated into and a requirement of the Contract. Contractors shall not substitute, replace or terminate any MBE and WBE firm without prior written authorization from MWBED and the Owner.

Contractors shall cooperate and participate in compliance reviews as determined necessary by MWBED. Contractors shall provide all necessary documentation to show proof of compliance with the requirements as requested by MWBED.

## **VI. Non Compliance**

A bid governed by this policy that does not meet the participation goals or does not receive an approved waiver will NOT be considered.

After the bid is awarded and if it is determined by MWBED that the Contractor is not in compliance with this Participation Program, MWBED will notify the Contractor within ten (10) days after the initial compliance review or the site visit and identify the deficiencies found and the required corrective action that should be taken to remedy the deficiencies within a specific time period.

If a Contractor is found non-compliant, the Contractor must submit, in writing, a specific commitment, in writing, to correct the deficiencies. The commitment must include the precise action to be taken and the date for completion.

If MWBED determines the Contractor has failed to comply with the provisions of this Participation Program, Contractor's Utilization Statement or 25 IAC 5, IDOA may impose any or all of the following sanctions:

- a. Withholding payment on the Contract until such time that satisfactory corrective measures are made.
- b. Adjustment to payments due or the permanent withholding of retainages of the Contract.
- c. Suspension or termination of the specific Contract in which the deficiency is known to exist. In the event this sanction is employed, the Contractor will be held liable for any consequential damages arising from the suspension or termination of the Contract, including damages caused as a result of the delay or from increased prices incurred in securing the performance of the balance of the work by other Contractors.
- d. Recommendation to the certification board to revoke the contractor's certification status with the Public Works Division of IDOA. This recommendation may result in the suspension or revocation of the contractor's ability to perform on future state contracts for a period no longer than thirty-six (36) months.
- e. Continued non-compliance may be deemed a material breach of the agreement between MWBED and Contractor, whereupon MWBED shall have all the rights and remedies available to it under the Contract or at law.
- f. Suspension, revocation, or denial of the MBE or WBE certification and eligibility to participate in the MBE or WBE program for a period of not more than thirty-six (36) months.

## **VII. Forms and Attachments**

Minority Participation Plan  
Good Faith Efforts Worksheet

**STATE OF INDIANA'S  
STANDARD CONTRACT FOR PUBLIC WORKS CONSTRUCTION PROJECT  
(for projects estimated more than \$150,000)  
WORKS PROJECTNUMBER XXXXX  
[INSERT] PROJECT DESCRIPTION  
[INSERT] INSTITUTION/DEPARTMENT**

**THIS IS A PUBLIC WORKS CONSTRUCTION CONTRACT** (“Contract”), entered into by and between the Indiana Department of Administration’s Public Works Division (“State”) and XXXXXXXXXXXX (“Contractor”), executed pursuant to the terms and conditions set forth herein and is governed by Indiana Code 4-13.6, *et seq.*

**1. Definitions.** The following definition applies throughout this Contract:

For purposes of the State’s Public Works Project Number **XXXXXX** (“Project”), the term “Contract Documents” shall mean and include the following: this Contract and the Project Bid Package, which includes the Contractor’s Application for Pre-Qualification, the Public Work’s Solicitation for Quotation (DAPW 30), Bid Documentation, Pre-Contract Document, General Conditions (DAPW 26), Supplementary Conditions, Instructions to Bidders, Drawings, Specifications, and Addenda issued by the State in connection with the Project and prior to the submission of the Contractor’s Proposal.

Subject to Section 39, *Order of Precedence, Incorporation by Reference*, of this Contract, Contract Documents shall also consist of the Contractor’s Proposal and Response, as well as any other documentation submitted by it in response to the Project (hereinafter collectively referred to as “Contractor’s Proposal”).

Additionally, Contract Documents shall include any subsequent amendments, change orders and any written interpretations issued as field orders by the Designer pursuant to General Conditions, Article 1.2 (DAPW 26) and all field orders for minor changes by the Designer pursuant to General Conditions, Article 12.3 (DAPW 26). Change orders and amendments shall be executed in the manner authorized by Section 35, *Merger and Modification*, of this Contract.

When applicable, Contract Documents shall include the Performance Bond and/or the Labor and Materials Payment Bond, as required by IC 4-13.6-7-6 and IC 4-13.6-7-7, and fully described and captured in the General Conditions (DAPW 26).

The Contract Documents are specifically and collectively incorporated herein by reference.

**2. Duties of Contractor.** The Contractor shall furnish all labor and materials, perform all of the work, and otherwise fulfill all of its obligations in conformance with the Contract Documents. These duties are described and captured in the Contract Documents. The Contractor agrees that not less than fifteen percent (15%) of the work, measured in dollar volume, will be performed by its own forces. Any subcontractor employed for any part of this Contract awarded in excess of One Hundred Fifty Thousand Dollars (\$150,000.00) shall be qualified with the State of Indiana’s Public Works Division Certification Board and shall have a valid Certificate of Qualification in the prime classification of work for this Contract.

**3. Consideration.** All payments provided herein are subject to appropriations made and funds allocated as provided by laws of the State of Indiana. The State shall pay the Contractor for performance of this Contract in current funds as follows:

BASE BID: **\$XXXXXXX.00**  
ALTERNATE(S):  
TOTAL CONTRACT PRICE: **\$XXXXXXX.00**

**4. Term.** The work to be performed under this Contract shall commence within ten (10) days of the last signatory to this Contract. The work shall be completed within **XXX** calendar days.

**5. Conflict of Interest.** As used in this section:

“Immediate family” means the spouse, partner, housemate or the unemancipated children of an individual, as defined by 42 Indiana Administrative Code 1-3-13.

“Interested party,” means:

1. The individual executing this Contract;
2. An individual who has an ownership interest of three percent (3%) or more of the Contractor, if the Contractor is not an individual; or
3. Any member of the immediate family of an individual specified under Subdivision 1 or 2.

“State” means the Indiana Department of Administration.

“State employee” means a state employee, a special state appointee or a state officer, as defined by IC 4-2-6-1(a)(9), (a)(18) and (a)(19), respectively.

- A. The Contractor covenants that it neither has, nor will it have, a direct or indirect financial interest by way of an interested party in any other contract connected or associated with this Contract. The Contractor further represents and warrants that no state employee, who is an interested party of the Contractor as sole proprietor, or who serves as an officer, director, trustee, partner or employee of the Contractor as a legal business entity, participated in any decision or vote of any kind in the award of this Contract. As such and by the execution of this Contract, the Contractor represents and warrants that the result of this Contract does not and will not create a conflict of interest under IC 4-2-6-9 or IC 4-2-6-10.5.
- B. The State may cancel this Contract, without recourse by the Contractor, if an interested party is a state employee and a violation of IC 4-2-6-9 or IC 4-2-6-10.5 has occurred.
- C. The State will not exercise its right of cancellation under Section B above, if the Contractor provides the State an opinion from the State Ethics Commission indicating that the existence of this Contract and the employment by the State of the interested party does not violate any statute or rule relating to ethical conduct of state employees. The State may take action, including cancellation of this Contract, consistent with an opinion of the State Ethics Commission obtained under this Section.
- D. The Contractor has an affirmative obligation under this Contract to disclose to the State when an interested party is or becomes a state employee. The obligation under this section extends only to those facts that the Contractor knows or reasonably should know.

**6. Licensing Standards.** The Contractor and its employees and subcontractors shall comply with all applicable licensing standards, certification standards, accrediting standards and any other laws, rules or regulations governing services to be provided by the Contractor pursuant to this Contract. The State shall not be required to pay the Contractor for any services performed when the Contractor, its employees or

subcontractors are not in compliance with such applicable standards, laws, rules or regulations. If licensure, certification or accreditation expires or is revoked, or if disciplinary action is taken against the applicable licensure, certification or accreditation, the Contractor shall notify the State immediately and the State, at its option, may immediately terminate this Contract.

**7. Escrow Agreement.** Contemporaneously with the execution of this Contract, the parties may provide for the escrow of retained portions of payments to the Contractor by entering into a separate Escrow Agreement, pursuant to IC 4-13.6-7, with an escrow agent described in IC 4-13.6-7-2(b). Should the Contractor elect to escrow retainage, the Escrow Agreement will become a part of this contract as if fully contained herein.

**8. Contractor's Certification.** The Contractor certifies that it has been pre-qualified by the State of Indiana's Public Works Division Certification Board to perform the work and furnish the services required by this Project. The Contractor further certifies that all information and documentation submitted by it in its Application for Prequalification Certification, the Contractor's Proposal and submitted in response to the Project, is true, accurate and complete as of the date of this Contract's effectiveness. The Contractor shall immediately notify the State of any material change to such information. The Contractor shall immediately notify the State if, during the course of performance of this Contract, it or any of its principals are proposed for debarment or ineligibility, or become debarred or declared ineligible, from entering into contracts with the federal government or any department, agency or political subdivision of the State.

**9. Contractor Employee Drug Testing.** Pursuant to IC 4-13-18, the Contractor shall implement the employee drug testing program submitted as part of its Contractor's Proposal. The State may cancel this Contract if it determines that the Contractor:

- A. Has failed to implement its employee drug testing program during the term of this Contract;
- B. Has failed to provide information regarding implementation of the Contractor's employee drug testing program at the request of the State; or
- C. Has provided to the State false information regarding the Contractor's employee drug testing program.

**10. Access to Records.** The Contractor and its subcontractors, if any, shall maintain all books, documents, papers, accounting records, and other evidence pertaining to all costs incurred under this Contract. They shall make such materials available at their respective offices at all reasonable times during this Contract, and for three (3) years from the date of final payment under this Contract, for inspection by the State or its authorized designees. Copies shall be furnished at no cost to the State if requested.

**11. Assignment; Successors.** The Contractor binds its successors and assignees to all the terms and conditions of this Contract. The Contractor shall not assign or subcontract the whole or any part of this Contract without the State's prior written consent. The Contractor may assign its right to receive payments to such third parties as the Contractor may desire without the prior written consent of the State, provided that the Contractor gives written notice (including evidence of such assignment) to the State thirty (30) days in advance of any payment so assigned. The assignment shall cover all unpaid amounts under this Contract and shall not be made to more than one party.

**12. Assignment of Antitrust Claims.** As part of the consideration for the award of this Contract, the Contractor assigns to the State all right, title and interest in and to any claims the Contractor now has, or

may acquire, under state or federal antitrust laws relating to the products or services which are the subject of this Contract.

**13. Audits.** The Contractor acknowledges that it may be required to submit to an audit of funds paid through this Contract. Any such audit shall be conducted in accordance with IC §5-11-1, *et seq.*, and audit guidelines specified by the State.

The State considers the Contractor to be a “vendor” for purposes of this Contract. However, if required by applicable provisions of the Office of Management and Budget Circular A-133 (Audits of States, Local Governments, and Non-Profit Organizations), following the expiration of this Contract the Contractor shall arrange for a financial and compliance audit of funds provided by the State pursuant to this Contract. Such audit is to be conducted by an independent public or certified public accountant (or as applicable, the Indiana State Board of Accounts), and performed in accordance with Indiana State Board of Accounts publication entitled “Uniform Compliance Guidelines for Examination of Entities Receiving Financial Assistance from Governmental Sources,” and applicable provisions of the Office of Management and Budget Circulars A-133 (Audits of States, Local Governments, and Non-Profit Organizations). The Contractor is responsible for ensuring that the audit and any management letters are completed and forwarded to the State in accordance with the terms of this Contract. Audits conducted pursuant to this paragraph must be submitted no later than nine (9) months following the close of the Contractor’s fiscal year. The Contractor agrees to provide the Indiana State Board of Accounts and the State an original of all financial and compliance audits. The audit shall be an audit of the actual entity, or distinct portion thereof that is the Contractor, and not of a parent, member, or subsidiary corporation of the Contractor, except to the extent such an expanded audit may be determined by the Indiana State Board of Accounts or the State to be in the best interests of the State. The audit shall include a statement from the Auditor that the Auditor has reviewed this Contract and that the Contractor is not out of compliance with the financial aspects of this Contract.

If Federal Funds are involved in this Contract, the State also considers the Contractor to be a “Contractor” under 2 C.F.R. 200.330 for purposes of this Contract. However, if required by applicable provisions of 2 C.F.R. 200 (Uniform Administrative Requirements, Cost Principles, and Audit Requirements), Contractor shall arrange for a financial and compliance audit, which complies with 2 C.F.R. 200.500 *et seq.*

**14. Authority to Bind Contractor.** The signatory for the Contractor represents that he/she has been duly authorized to execute this Contract on behalf of the Contractor and has obtained all necessary or applicable approvals to make this Contract fully binding upon the Contractor when his/her signature is affixed, and accepted by the State.

**15. Changes in Work.** The Contractor shall not commence any additional work or change the scope of the work until authorized in writing by the State. The Contractor shall make no claim for additional compensation in the absence of a prior written approval and amendment executed by all signatories hereto. This Contract may only be amended, supplemented or modified by a written document executed in the same manner as this Contract.

**16. Compliance with Laws.**

- A. The Contractor shall comply with all applicable federal, state, and local laws, rules, regulations, and ordinances, and all provisions required thereby to be included herein are hereby incorporated by reference. The enactment or modification of any applicable state or federal statute or the promulgation of rules or regulations thereunder after execution of



this Contract shall be reviewed by the State and the Contractor to determine whether the provisions of this Contract require formal modification.

- B. The Contractor and its agents shall abide by all ethical requirements that apply to persons who have a business relationship with the State as set forth in IC §4-2-6, *et seq.*, IC §4-2-7, *et seq.*, the regulations promulgated thereunder, and Executive Order 04-08, dated April 27, 2004. **If the Contractor has knowledge, or would have acquired knowledge with reasonable inquiry, that a state officer, employee, or special state appointee, as those terms are defined in IC 4-2-6-1, has a financial interest in the Contract, the Contractor shall ensure compliance with the disclosure requirements in IC 4-2-6-10.5 prior to the execution of this contract.** If the Contractor is not familiar with these ethical requirements, the Contractor should refer any questions to the Indiana State Ethics Commission, or visit the Inspector General's website at <http://www.in.gov/ig/>. If the Contractor or its agents violate any applicable ethical standards, the State may, in its sole discretion, terminate this Contract immediately upon notice to the Contractor. In addition, the Contractor may be subject to penalties under IC §§4-2-6, 4-2-7, 35-44-1-3, and under any other applicable laws.
- C. The Contractor certifies by entering into this Contract that neither it nor its principal(s) is presently in arrears in payment of taxes, permit fees or other statutory, regulatory or judicially required payments to the State of Indiana. The Contractor agrees that any payments currently due to the State of Indiana may be withheld from payments due to the Contractor. Additionally, further work or payments may be withheld, delayed, or denied and/or this Contract suspended until the Contractor is current in its payments and has submitted proof of such payment to the State.
- D. The Contractor warrants that it has no current, pending or outstanding criminal, civil, or enforcement actions initiated by the State, and agrees that it will immediately notify the State of any such actions. During the term of such actions, the Contractor agrees that the State may delay, withhold, or deny work under any supplement, amendment, change order or other contractual device issued pursuant to this Contract.
- E. If a valid dispute exists as to the Contractor's liability or guilt in any action initiated by the State or its agencies, and the State decides to delay, withhold, or deny work to the Contractor, the Contractor may request that it be allowed to continue, or receive work, without delay. The Contractor must submit, in writing, a request for review to the Indiana Department of Administration (IDOA) following the procedures for disputes outlined herein. A determination by IDOA shall be binding on the parties. Any payments that the State may delay, withhold, deny, or apply under this section shall not be subject to penalty or interest, except as permitted by IC §5-17-5.
- F. The Contractor warrants that the Contractor and its subcontractors, if any, shall obtain and maintain all required permits, licenses, registrations, and approvals, and shall comply with all health, safety, and environmental statutes, rules, or regulations in the performance of work activities for the State. Failure to do so may be deemed a material breach of this Contract and grounds for immediate termination and denial of further work with the State.
- G. The Contractor affirms that, if it is an entity described in IC Title 23, it is properly registered and owes no outstanding reports to the Indiana Secretary of State.

H. As required by IC §5-22-3-7:

(1) The Contractor and any principals of the Contractor certify that:

(A) The Contractor, except for de minimis and nonsystematic violations, has not violated the terms of:

- (i) IC §24-4.7 [Telephone Solicitation Of Consumers];
- (ii) IC §24-5-12 [Telephone Solicitations]; or
- (iii) IC §24-5-14 [Regulation of Automatic Dialing Machines];

in the previous three hundred sixty-five (365) days, even if IC §24-4.7 is preempted by federal law; and

(B) The Contractor will not violate the terms of IC §24-4.7 for the duration of the Contract, even if IC §24-4.7 is preempted by federal law.

(2) The Contractor and any principals of the Contractor certify that an affiliate or principal of the Contractor and any agent acting on behalf of the Contractor or on behalf of an affiliate or principal of the Contractor, except for de minimis and nonsystematic violations,

(A) Has not violated the terms of IC §24-4.7 in the previous three hundred sixty-five (365) days, even if IC §24-4.7 is preempted by federal law; and

(B) Will not violate the terms of IC §24-4.7 for the duration of the Contract, even if IC §24-4.7 is preempted by federal law.

**17. Condition of Payment.** All services provided by the Contractor under this Contract must be performed to the State's reasonable satisfaction, as determined at the discretion of the undersigned State representative and in accordance with all applicable federal, state, local laws, ordinances, rules and regulations. The State shall not be required to pay for work found to be unsatisfactory, inconsistent with this Contract or performed in violation of and federal, state or local statute, ordinance, rule or regulation.

**18. Confidentiality of State Information.** The Contractor understands and agrees that data, materials, and information disclosed to the Contractor may contain confidential and protected information. The Contractor covenants that data, material, and information gathered, based upon or disclosed to the Contractor for the purpose of this Contract will not be disclosed to or discussed with third parties without the prior written consent of the State.

The parties acknowledge that the services to be performed by Contractor for the State under this Contract may require or allow access to data, materials, and information containing Social Security numbers maintained by the State in its computer system or other records. In addition to the covenant made above in this section and pursuant to 10 IAC 5-3-1(4), the Contractor and the State agree to comply with the provisions of IC §4-1-10 and IC §4-1-11. If any Social Security number(s) is/are disclosed by Contractor, Contractor agrees to pay the cost of the notice of disclosure of a breach of the security of the system in addition to any other claims and expenses for which it is liable under the terms of this Contract.

## **19. Continuity of Services.**

- A. The Contractor recognizes that the service(s) to be performed under this Contract are vital to the State and must be continued without interruption and that, upon Contract expiration, a successor, either the State or another contractor, may continue them. The Contractor agrees to:
  - 1. Furnish phase-in training; and
  - 2. Exercise its best efforts and cooperation to effect an orderly and efficient transition to a successor.
  
- B. The Contractor shall, upon the State's written notice:
  - 1. Furnish phase-in, phase-out services for up to sixty (60) days after this Contract expires; and
  - 2. Negotiate in good faith a plan with a successor to determine the nature and extent of phase-in, phase-out services required. The plan shall specify a training program and a date for transferring responsibilities for each division of work described in the plan, and shall be subject to the State's approval. The Contractor shall provide sufficient experienced personnel during the phase-in, phase-out period to ensure that the services called for by this Contract are maintained at the required level of proficiency.
  
- C. The Contractor shall allow as many personnel as practicable to remain on the job to help the successor maintain the continuity and consistency of the services required by this Contract. The Contractor also shall disclose necessary personnel records and allow the successor to conduct on-site interviews with these employees. If selected employees are agreeable to the change, the Contractor shall release them at a mutually agreeable date and negotiate transfer of their earned fringe benefits to the successor.
  
- D. The Contractor shall be reimbursed for all reasonable phase-in, phase-out costs (i.e., costs incurred within the agreed period after contract expiration that result from phase-in, phase-out operations).

## **20. Debarment and Suspension.**

- A. The Contractor certifies by entering into this Contract that neither it nor its principals nor any of its subcontractors are presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from entering into this Contract by any federal agency or by any department, agency or political subdivision of the State of Indiana. The term "principal" for purposes of this Contract means an officer, director, owner, partner, key employee or other person with primary management or supervisory responsibilities, or a person who has a critical influence on or substantive control over the operations of the Contractor.
  
- B. The Contractor certifies that it has verified the state and federal suspension and debarment status for all subcontractors receiving funds under this Contract and shall be solely responsible for any recoupment, penalties or costs that might arise from use of a suspended or debarred subcontractor. The Contractor shall immediately notify the State if any subcontractor becomes debarred or suspended, and shall, at the State's request,

take all steps required by the State to terminate its contractual relationship with the subcontractor for work to be performed under this Contract.

**21. Default by State.** If the State, sixty (60) days after receipt of written notice, fails to correct or cure any material breach of this Contract, the Contractor may cancel and terminate this Contract and institute measures to collect monies due up to and including the date of termination.

**22. Disputes.**

- A. Should any disputes arise with respect to this Contract, the Contractor and the State agree to act immediately to resolve such disputes. Time is of the essence in the resolution of disputes.
- B. The Contractor agrees that, the existence of a dispute notwithstanding, it will continue without delay to carry out all of its responsibilities under this Contract that are not affected by the dispute. Should the Contractor fail to continue to perform its responsibilities regarding all non-disputed work, without delay, any additional costs incurred by the State or the Contractor as a result of such failure to proceed shall be borne by the Contractor, and the Contractor shall make no claim against the State for such costs.
- C. If the parties are unable to resolve a contract dispute between them after good faith attempts to do so, a dissatisfied party shall submit the dispute to the Commissioner of the Indiana Department of Administration for resolution. The dissatisfied party shall give written notice to the Commissioner and the other party. The notice shall include (1) a description of the disputed issues, (2) the efforts made to resolve the dispute, and (3) a proposed resolution. The Commissioner shall promptly issue a Notice setting out documents and materials to be submitted to the Commissioner in order to resolve the dispute; the Notice may also afford the parties the opportunity to make presentations and enter into further negotiations. Within 30 business days of the conclusion of the final presentations, the Commissioner shall issue a written decision and furnish it to both parties. The Commissioner's decision shall be the final and conclusive administrative decision unless either party serves on the Commissioner and the other party, within ten business days after receipt of the Commissioner's decision, a written request for reconsideration and modification of the written decision. If the Commissioner does not modify the written decision within 30 business days, either party may take such other action helpful to resolving the dispute, including submitting the dispute to an Indiana court of competent jurisdiction. If the parties accept the Commissioner's decision, it may be memorialized as a written Amendment to this Contract if appropriate.
- D. The State may withhold payments on disputed items pending resolution of the dispute. The unintentional nonpayment by the State to the Contractor of one or more invoices not in dispute in accordance with the terms of this Contract will not be cause for the Contractor to terminate this Contract, and the Contractor may bring suit to collect these amounts without following the disputes procedure contained herein.
- E. With the written approval of the Commissioner of the Indiana Department of Administration, the parties may agree to forego the process described in subdivision C. relating to submission of the dispute to the Commissioner. This paragraph shall not be construed to abrogate provisions of Ind. Code 4-6-2-11 in situations where dispute

resolution efforts lead to a compromise of claims in favor of the State as described in that statute. In particular, releases or settlement agreements involving releases of legal claims or potential legal claims of the state should be processed consistent with Ind. Code 4-6-2-11, which requires approval of the Governor and Attorney General.

- F. This paragraph shall not be construed to abrogate provisions of Ind. Code 4-6-2-11 in situations where dispute resolution efforts lead to a compromise of claims in favor of the State as described in that statute. In particular, releases or settlement agreements involving releases of legal claims or potential legal claims of the state should be processed consistent with Ind. Code 4-6-2-11, which requires approval of the Governor and Attorney General.

**23. Drug-Free Workplace Certification.** As required by Executive Order No. 90-5 dated April 12, 1990, issued by the Governor of Indiana, the Contractor hereby covenants and agrees to make a good faith effort to provide and maintain a drug-free workplace. The Contractor will give written notice to the State within ten (10) days after receiving actual notice that the Contractor, or an employee of the Contractor in the State of Indiana, has been convicted of a criminal drug violation occurring in the workplace. False certification or violation of this certification may result in sanctions including, but not limited to, suspension of contract payments, termination of this Contract and/or debarment of contracting opportunities with the State for up to three (3) years.

In addition to the provisions of the above paragraph, if the total amount set forth in this Contract is in excess of \$25,000.00, the Contractor certifies and agrees that it will provide a drug-free workplace by:

- A. Publishing and providing to all of its employees a statement notifying them that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the Contractor's workplace, and specifying the actions that will be taken against employees for violations of such prohibition;
- B. Establishing a drug-free awareness program to inform its employees of (1) the dangers of drug abuse in the workplace; (2) the Contractor's policy of maintaining a drug-free workplace; (3) any available drug counseling, rehabilitation and employee assistance programs; and (4) the penalties that may be imposed upon an employee for drug abuse violations occurring in the workplace;
- C. Notifying all employees in the statement required by subparagraph (A) above that as a condition of continued employment, the employee will (1) abide by the terms of the statement; and (2) notify the Contractor of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction;
- D. Notifying the State in writing within ten (10) days after receiving notice from an employee under subdivision (C)(2) above, or otherwise receiving actual notice of such conviction;
- E. Within thirty (30) days after receiving notice under subdivision (C)(2) above of a conviction, imposing the following sanctions or remedial measures on any employee who is convicted of drug abuse violations occurring in the workplace: (1) taking appropriate personnel action against the employee, up to and including termination; or (2) requiring such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a federal, state or local health, law enforcement, or other appropriate agency; and

- F. Making a good faith effort to maintain a drug-free workplace through the implementation of subparagraphs (A) through (E) above.

**24. Employment Eligibility Verification.** As required by IC §22-5-1.7, the Contractor swears or affirms under the penalties of perjury that:

- A. The Contractor does not knowingly employ an unauthorized alien.
- B. The Contractor shall enroll in and verify the work eligibility status of all his/her/its newly hired employees through the E-Verify program as defined in IC §22-5-1.7-3. The Contractor is not required to participate should the E-Verify program cease to exist. Additionally, the Contractor is not required to participate if the Contractor is self-employed and does not employ any employees.
- C. The Contractor shall not knowingly employ or contract with an unauthorized alien. The Contractor shall not retain an employee or contract with a person that the Contractor subsequently learns is an unauthorized alien.
- D. The Contractor shall require his/her/its subcontractors who perform work under this Contract to certify to the Contractor that the subcontractor does not knowingly employ or contract with an unauthorized alien and that the subcontractor has enrolled and is participating in the E-Verify program. The Contractor agrees to maintain this certification throughout the duration of the term of a contract with a subcontractor.

The State may terminate for default if the Contractor fails to cure a breach of this provision no later than thirty (30) days after being notified by the State.

**25. Employment Option.** If the State determines that it would be in the State's best interest to hire an employee of the Contractor, the Contractor will release the selected employee from any non-competition agreements that may be in effect. This release will be at no cost to the State or the employee.

**26. Force Majeure.** In the event that either party is unable to perform any of its obligations under this Contract or to enjoy any of its benefits because of natural disaster or decrees of governmental bodies not the fault of the affected party (hereinafter referred to as a "Force Majeure Event"), the party who has been so affected shall immediately give notice to the other party and shall do everything possible to resume performance. Upon receipt of such notice, all obligations under this Contract shall be immediately suspended. If the period of nonperformance exceeds thirty (30) days from the receipt of notice of the Force Majeure Event, the party whose ability to perform has not been so affected may, by giving written notice, terminate this Contract.

**27. Funding Cancellation.** When the Director of the State Budget Agency makes a written determination that funds are not appropriated or otherwise available to support continuation of performance of this Contract, this Contract shall be canceled. A determination by the Director of State Budget Agency that funds are not appropriated or otherwise available to support continuation of performance shall be final and conclusive.

**28. Governing Law.** This Contract shall be governed, construed, and enforced in accordance with the laws of the State of Indiana, without regard to its conflict of laws rules. Suit, if any, must be brought in the State of Indiana.

**29. HIPAA Compliance.** If this Contract involves services, activities or products subject to the Health Insurance Portability and Accountability Act of 1996 (HIPAA), the Contractor covenants that it will appropriately safeguard Protected Health Information (defined in 45 CFR 160.103), and agrees that it is subject to, and shall comply with, the provisions of 45 CFR 164 Subpart E regarding use and disclosure of Protected Health Information.

**30. Indemnification.** The Contractor agrees to indemnify, defend, and hold harmless the State, its agents, officials, and employees from all claims and suits including court costs, attorney's fees, and other expenses caused by any act or omission of the Contractor and/or its subcontractors, if any, in the performance of this Contract. The State shall not provide such indemnification to the Contractor.

**31. Independent Contractor; Workers' Compensation Insurance.** The Contractor is performing as an independent entity under this Contract. No part of this Contract shall be construed to represent the creation of an employment, agency, partnership or joint venture agreement between the parties. Neither party will assume liability for any injury (including death) to any persons, or damage to any property, arising out of the acts or omissions of the agents, employees or subcontractors of the other party. The Contractor shall provide all necessary unemployment and workers' compensation insurance for the Contractor's employees, and shall provide the State with a Certificate of Insurance evidencing such coverage prior to starting work under this Contract.

**32. Information Technology Enterprise Architecture Requirements.** If the Contractor provides any information technology related products or services to the State, the Contractor shall comply with all IOT standards, policies and guidelines, which are online at <http://iot.in.gov/architecture/>. The Contractor specifically agrees that all hardware, software and services provided to or purchased by the State shall be compatible with the principles and goals contained in the electronic and information technology accessibility standards adopted under Section 508 of the Federal Rehabilitation Act of 1973 (29 U.S.C. 794d) and IC §4-13.1-3. Any deviation from these architecture requirements must be approved in writing by IOT in advance. The State may terminate this Contract for default if the Contractor fails to cure a breach of this provision within a reasonable time.

### **33. Insurance**

- A. The Contractor and their subcontractors ( if any) shall secure and keep in force during the term of this Contract the following insurance coverages (if applicable) covering the Contractor for any and all claims of any nature which may in any manner arise out of or result from Contractor's performance under this Contract:
1. Commercial general liability, including contractual coverage, and products or completed operations coverage (if applicable), with minimum liability limits not less than \$700,000 per person and \$5,000,000 per occurrence unless additional coverage is required by the State. The State is to be named as an additional insured on a primary, non-contributory basis for any liability arising directly or indirectly under or in connection with this Contract.
  2. Automobile liability for owned, non-owned and hired autos with minimum liability limits of \$700,000 per person and \$5,000,000 per occurrence. The State is to be named as an additional insured on a primary, non-contributory basis.

3. The Contractor shall secure the appropriate Surety or Fidelity Bond(s) as required by the state department served or by applicable statute.
  4. The Contractor and their subcontractors shall provide proof of such insurance coverage by tendering to the undersigned State representative a certificate of insurance prior to the commencement of this Contract and proof of workers' compensation coverage meeting all statutory requirements of IC §22-3-2. In addition, proof of an "all states endorsement" covering claims occurring outside the State is required if any of the services provided under this Contract involve work outside of Indiana.
- B. The Contractor's insurance coverage must meet the following additional requirements:
1. The insurer must have a certificate of authority or other appropriate authorization to operate in the state in which the policy was issued.
  2. Any deductible or self-insured retention amount or other similar obligation under the insurance policies shall be the sole obligation of the Contractor.
  3. The State will be defended, indemnified and held harmless to the full extent of any coverage actually secured by the Contractor in excess of the minimum requirements set forth above. The duty to indemnify the State under this Contract shall not be limited by the insurance required in this Contract.
  4. The insurance required in this Contract, through a policy or endorsement(s), shall include a provision that the policy and endorsements may not be canceled or modified without thirty (30) days' prior written notice to the undersigned State agency.
  5. The Contractor waives and agrees to require their insurer to waive their rights of subrogation against the State of Indiana.
- C. Failure to provide insurance as required in this Contract may be deemed a material breach of contract entitling the State to immediately terminate this Contract. The Contractor shall furnish a certificate of insurance and all endorsements to the State before the commencement of this Contract.

**34. Key Person(s).**

- A. If both parties have designated that certain individual(s) are essential to the services offered, the parties agree that should such individual(s) leave their employment during the term of this Contract for whatever reason, the State shall have the right to terminate this Contract upon thirty (30) days' prior written notice.
- B. In the event that the Contractor is an individual, that individual shall be considered a key person and, as such, essential to this Contract. Substitution of another for the Contractor shall not be permitted without express written consent of the State.

Nothing in Sections A and B, above shall be construed to prevent the Contractor from using the services of others to perform tasks ancillary to those tasks which directly require the expertise of the key person.



Examples of such ancillary tasks include secretarial, clerical, and common labor duties. The Contractor shall, at all times, remain responsible for the performance of all necessary tasks, whether performed by a key person or others.

Key person(s) to this Contract is/are:

**35. Merger & Modification.** This Contract constitutes the entire agreement between the parties. No understandings, agreements, or representations, oral or written, not specified within this Contract will be valid provisions of this Contract. This Contract may not be modified, supplemented, or amended, except by written agreement signed by all necessary parties.

**36. Minority and Women’s Business Enterprises Compliance.** Award of this Contract was based, in part, on the Minority and/or Women’s Business Enterprise (“MBE” and/or “WBE”) participation plan. The following certified MBE or WBE subcontractors will be participating in this Contract:

<u>MBE/WBE</u>	<u>PHONE</u>	<u>COMPANY NAME</u>	<u>SCOPE OF PRODUCTS and/or SERVICES</u>	<u>UTILIZATION DATE</u>	<u>PERCENT</u>
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*Terms for participation are as provided in the Contractor’s Proposal to the State’s request for participation, which are described and captured in the Contract Documents.*

A copy of each subcontractor agreement must be submitted to IDOA’s MBE/WBE Division within thirty (30) days of the effective date of this Contract. Failure to provide a copy of any subcontractor agreement will be deemed a violation of the rules governing MBE/WBE procurement, and may result in sanctions allowable under 25 IAC 5-7-8. Failure to provide any subcontractor agreement may also be considered a material breach of this Contract. The Contractor must obtain approval from IDOA’s MBE/WBE Division before changing the participation plan submitted in connection with this Contract.

The Contractor shall report payments made to MBE/WBE Division subcontractors under this Contract on a monthly basis. Monthly reports shall be made using the online audit tool, commonly referred to as “Pay Audit.” MBE/WBE Division subcontractor payments shall also be reported to the Division as reasonably requested and in a format to be determined by Division.

**37. Nondiscrimination.** Pursuant to the Indiana Civil Rights Law, specifically including IC §22-9-1-10, and in keeping with the purposes of the federal Civil Rights Act of 1964, the Age Discrimination in Employment Act, and the Americans with Disabilities Act, the Contractor covenants that it shall not discriminate against any employee or applicant for employment relating to this Contract with respect to the hire, tenure, terms, conditions or privileges of employment or any matter directly or indirectly related to employment, because of the employee’s or applicant’s race, color, national origin, religion, sex, age, disability, ancestry, status as a veteran, or any other characteristic protected by federal, state, or local law (“Protected Characteristics”). Contractor certifies compliance with applicable federal laws, regulations, and executive orders prohibiting discrimination based on the Protected Characteristics in the provision of services. Breach of this paragraph may be regarded as a material breach of this Contract, but nothing in this paragraph shall be construed to imply or establish an employment relationship between the State and any applicant or employee of the Contractor or any subcontractor.

The State is a recipient of federal funds, and therefore, where applicable, Contractor and any subcontractors shall comply with requisite affirmative action requirements, including reporting, pursuant to 41 CFR Chapter 60, as amended, and Section 202 of Executive Order 11246 as amended by Executive Order 13672.

**38. Notice to Parties.** Whenever any notice, statement or other communication is required under this Contract, it shall be sent to the following addresses, unless otherwise specifically advised.

- A. Notices to the State shall be sent to: Public Works Divisions, Director  
Indiana Department of Administration  
402 W Washington St Room W467  
Indianapolis, IN 46204
- B. Notices to the Contractor shall be sent to: **[INSERT CONTRACTOR NAME]**  
**[INSERT CONTRACTOR ADDRESS]**
- C. As required by IC 4-13-2-14.8, payments to the Contractor shall be made via electronic funds transfer in accordance with instructions filed by the Contractor with the Indiana Auditor of State.

**39. Order of Precedence; Incorporation by Reference.** Any inconsistency or ambiguity in this Contract shall be resolved by giving precedence in the following order: (1) this Contract, (2) the Project Bid Package, (3) attachments prepared by the State; (4) Contractor’s Proposal; and (5) attachments prepared by the Contractor. All of the foregoing are incorporated fully by reference. All attachments, and all documents referred to in this paragraph are hereby incorporated fully by reference.

**40. Ownership of Documents and Materials.**

A. All documents, records, programs, applications, data, algorithms, film, tape, articles, memoranda, and other materials (the “Materials”) not developed or licensed by the Contractor prior to execution of this Contract, but specifically developed under this Contract shall be considered “work for hire” and the Contractor hereby transfers and assigns any ownership claims to the State so that all Materials will be the property of the State. If ownership interest in the Materials cannot be assigned to the State, the Contractor grants the State a non-exclusive, non-cancelable, perpetual, worldwide royalty-free license to use the Materials and to use, modify, copy and create derivative works of the Materials.

B. Use of the Materials, other than related to contract performance by the Contractor, without the prior written consent of the State, is prohibited. During the performance of this Contract, the Contractor shall be responsible for any loss of or damage to the Materials developed for or supplied by the State and used to develop or assist in the services provided while the Materials are in the possession of the Contractor. Any loss or damage thereto shall be restored at the Contractor’s expense. The Contractor shall provide the State full, immediate, and unrestricted access to the Materials and to Contractor’s work product during the term of this Contract.

**41. Payments.**

- A. All payments shall be made 35 days in arrears in conformance with State fiscal policies and procedures and, as required by IC §4-13-2-14.8, the direct deposit by electronic funds transfer to the financial institution designated by the Contractor in writing unless a specific waiver has been obtained from the Indiana Auditor of State. No payments will be made in advance of receipt of the goods or services that are the subject of this Contract except as permitted by IC §4-13-2-20.

- B. The State Budget Agency and the Contractor acknowledge that Contractor is being paid in advance for the maintenance of equipment and / or software. Pursuant to IC §4-13-2-20(b)(14), Contractor agrees that if it fails to perform the maintenance required under this Contract, upon receipt of written notice from the State, it shall promptly refund the consideration paid, pro-rated through the date of non-performance.

**42. Penalties/Interest/Attorney's Fees.** The State will in good faith perform its required obligations hereunder and does not agree to pay any penalties, liquidated damages, interest or attorney's fees, except as permitted by Indiana law, in part, IC §5-17-5, IC §34-54-8, IC §34-13-1 and IC § 34-52-2-3.

Notwithstanding the provisions contained in IC §5-17-5, any liability resulting from the State's failure to make prompt payment shall be based solely on the amount of funding originating from the State and shall not be based on funding from federal or other sources.

**43. Progress Reports.** The Contractor shall submit progress reports to the State upon request. The report shall be oral, unless the State, upon receipt of the oral report, should deem it necessary to have it in written form. The progress reports shall serve the purpose of assuring the State that work is progressing in line with the schedule, and that completion can be reasonably assured on the scheduled date.

**44. Public Record.** The Contractor acknowledges that the State will not treat this Contract as containing confidential information, and will post this Contract on its website as required by Executive Order 05-07. Use by the public of the information contained in this Contract shall not be considered an act of the State.

**45. Renewal Option.** This Contract may be renewed under the same terms and conditions, subject to the approval of the Commissioner of the Department of Administration and the State Budget Director in compliance with IC §5-22-17-4. The term of the renewed contract may not be longer than the term of the original contract.

**46. Severability.** The invalidity of any section, subsection, clause or provision of this Contract shall not affect the validity of the remaining sections, subsections, clauses or provisions of this Contract.

**47. Substantial Performance.** This Contract shall be deemed to be substantially performed only when fully performed according to its terms and conditions and any written amendments or supplements.

**48. Taxes.** The State is exempt from most state and local taxes and many federal taxes. The State will not be responsible for any taxes levied on the Contractor as a result of this Contract.

**49. Termination for Convenience.** This Contract may be terminated, in whole or in part, by the State, which shall include and is not limited to the Indiana Department of Administration and the State Budget Agency whenever, for any reason, the State determines that such termination is in its best interest. Termination of services shall be effected by delivery to the Contractor of a Termination Notice at least thirty (30) days prior to the termination effective date, specifying the extent to which performance of services under such termination becomes effective. The Contractor shall be compensated for services properly rendered prior to the effective date of termination. The State will not be liable for services performed after the effective date of termination. The Contractor shall be compensated for services herein provided but in no case shall total payment made to the Contractor exceed the original contract price or shall any price increase be allowed on individual line items if canceled only in part prior to the original termination date. For the purposes of this paragraph, the parties stipulate and agree that the Indiana Department of Administration shall be deemed to be a party to this agreement with authority to terminate

the same for convenience when such termination is determined by the Commissioner of IDOA to be in the best interests of the State.

**50. Termination for Default.**

- A. With the provision of thirty (30) days notice to the Contractor, the State may terminate this Contract in whole or in part if the Contractor fails to:
  - 1. Correct or cure any breach of this Contract; the time to correct or cure the breach may be extended beyond thirty (30) days if the State determines progress is being made and the extension is agreed to by the parties;
  - 2. Deliver the supplies or perform the services within the time specified in this Contract or any extension;
  - 3. Make progress so as to endanger performance of this Contract; or
  - 4. Perform any of the other provisions of this Contract.
  
- B. If the State terminates this Contract in whole or in part, it may acquire, under the terms and in the manner the State considers appropriate, supplies or services similar to those terminated, and the Contractor will be liable to the State for any excess costs for those supplies or services. However, the Contractor shall continue the work not terminated.
  
- C. The State shall pay the contract price for completed supplies delivered and services accepted. The Contractor and the State shall agree on the amount of payment for manufacturing materials delivered and accepted and for the protection and preservation of the property. Failure to agree will be a dispute under the Disputes clause. The State may withhold from these amounts any sum the State determines to be necessary to protect the State against loss because of outstanding liens or claims of former lien holders.
  
- D. The rights and remedies of the State in this clause are in addition to any other rights and remedies provided by law or equity or under this Contract.

**51. Travel.** No expenses for travel will be reimbursed unless specifically permitted under the scope of services or consideration provisions. Expenditures made by the Contractor for travel will be reimbursed at the current rate paid by the State and in accordance with the State Travel Policies and Procedures as specified in the current Financial Management Circular. Out-of-state travel requests must be reviewed by the State for availability of funds and for appropriateness per Circular guidelines.

**52. Indiana Veteran’s Business Enterprise Compliance.** Award of this Contract was based, in part, on the Indiana Veteran’s Business Enterprise (“IVBE”) participation plan. The following IVBE subcontractors will be participating in this Contract:

VBE	PHONE	COMPANY NAME	SCOPE OF PRODUCTS and/or SERVICES	UTILIZATION	DATE	PERCENT
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N/A

A copy of each subcontractor agreement must be submitted to IDOA within thirty (30) days of the effective date of this Contract. Failure to provide any subcontractor agreement may also be considered a material breach of this Contract. The Contractor must obtain approval from IDOA’s MBE/WBE Division before changing the participation plan submitted in connection with this Contract.

The Contractor shall report payments made to IVBE subcontractors under this Contract on a monthly basis. Monthly reports shall be made using the online audit tool, commonly referred to as "Pay Audit." IVBE subcontractor payments shall also be reported to IDOA as reasonably requested and in a format to be determined by IDOA.

**53. Waiver of Rights.** No right conferred on either party under this Contract shall be deemed waived, and no breach of this Contract excused, unless such waiver is in writing and signed by the party claimed to have waived such right. Neither the State's review, approval or acceptance of, nor payment for, the services required under this Contract shall be construed to operate as a waiver of any rights under this Contract or of any cause of action arising out of the performance of this Contract, and the Contractor shall be and remain liable to the State in accordance with applicable law for all damages to the State caused by the Contractor's negligent performance of any of the services furnished under this Contract.

**54. Work Standards.** The Contractor shall execute its responsibilities by following and applying at all times the highest professional and technical guidelines and standards. If the State becomes dissatisfied with the work product of or the working relationship with those individuals assigned to work on this Contract, the State may request in writing the replacement of any or all such individuals, and the Contractor shall grant such request.

**THE REST OF THIS PAGE INTENTIONALLY LEFT BLANK**

**Non-Collusion and Acceptance**

The undersigned attests, subject to the penalties for perjury, that the undersigned is the Contractor, or that the undersigned is the properly authorized representative, agent, member or officer of the Contractor. Further, to the undersigned's knowledge, neither the undersigned nor any other member, employee, representative, agent or officer of the Contractor, directly or indirectly, has entered into or been offered any sum of money or other consideration for the execution of this Contract other than that which appears upon the face hereof. **Furthermore, if the undersigned has knowledge that a state officer, employee, or special state appointee, as those terms are defined in IC 4-2-6-1, has a financial interest in the Contract, the Contractor attests to compliance with the disclosure requirements in IC 4-2-6-10.5.**

**IN WITNESS WHEREOF**, the Contractor and the State have, through their duly authorized representatives, entered into this Contract for Public Works Project Number **XXXXXX**. The parties, having read and understood the foregoing terms of this Contract, do by their respective signatures dated below agree to the terms thereof.

**XXXXXXXXXX**  
**[Contractor]**

**Department of Administration**  
**Public Works Division**

By: \_\_\_\_\_  
Printed Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
  
Date: \_\_\_\_\_

By: \_\_\_\_\_  
Director, DAPW  
*For IDOA Commissioner if less than \$1,000,000*  
  
Date: \_\_\_\_\_

**Approved by:**  
Department of Administration

**Approved by:**  
State Budget Agency

By: \_\_\_\_\_  
Jessica Robertson, Commissioner

By: \_\_\_\_\_  
Brian E. Bailey, Director

Date: \_\_\_\_\_

Date: \_\_\_\_\_

**Approved as to Form and Legality:**  
*Form approval has been granted by the Office  
of the Attorney General pursuant to  
IC 4-13-2-14.3(e) on August 15, 2016.  
FA 16-28*

This Instrument was prepared by: **[INSERT NAME]** on **XX/XX/XXXX**

Legal counsel: \_\_\_\_\_ (initials)

**TECHNICAL SPECIFICATIONS**  
**LOWER SHELTER STAIRS TO TRAIL 2**  
**&**  
**UPPER SHELTER RETAINING WALL**

**Located at**  
**BROWN COUNTY STATE PARK**  
**Nashville, Brown County, Indiana**

**FOR**  
**INDIANA DEPARTMENT OF NATURAL RESOURCES**

**402 WEST WASHINGTON**  
**INDIANAPOLIS, IN 46204**

**PROJECT NO: ENG2003722634**

**BIDDING DOCUMENTS**

**ISSUE DATE: AUGUST 28, 2020**

**FILE NUMBER 19-11229**



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SECTION 01200 - PROJECT MEETINGS.....
SECTION 01300 - SUBMITTALS .....
SECTION 01400 - QUALITY CONTROL .....
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Not Used

<b><u>DIVISION 7 THERMAL AND MOISTURE PROTECTION</u></b>
Not Used



**DIVISION 8 DOORS AND WINDOWS**

Not Used

**DIVISION 9 FINISHES**

Not Used

**DIVISION 10 SPECIALTIES**

Not Used

**DIVISION 11 EQUIPMENT**

Not Used

**DIVISION 12 FURNISHINGS**

Not Used

**DIVISION 13 SPECIAL CONSTRUCTION**

Not Used

**DIVISION 14 CONVEYING SYSTEMS**

Not Used

**DIVISION 15 MECHANICAL**

Not Used

**DIVISION 16 ELECTRICAL**

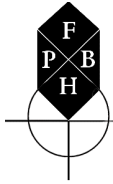
Not Used

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**DIVISION 1**  
**GENERAL REQUIREMENTS**

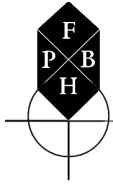


## SECTION 01010 SUMMARY OF WORK

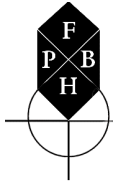
### **PART 1 - GENERAL**

#### 1.1 SCOPE OF WORK COVERED BY THE CONTRACT

- A. These specifications and accompanying drawings describe the work to be done and the materials to be furnished at two separate locations for the Wall and Walk Repairs to be constructed in Brown County State Park located in Nashville, Indiana. This is a LUMP SUM project - where INDOT specifications are referenced in these project specifications, they are referenced for material identification and for means of execution, installation and construction. The Method of Measurement and Basis of Payment listed in the INDOT Specifications do not apply.
- B. The Project generally consists of the construction of the following:
1. Install and Place Maintenance of Traffic and pedestrian safety measures at both locations.
  2. Install Erosion Control measures at both locations.
  3. Remove trees at both locations within applicable season.
  4. Upper Shelter Wall – Saw cut the parking area parallel to the existing sidewalk.
  5. Upper Shelter Wall – Excavate to saw cut limits, and remove existing sidewalk, store whole slabs on site for reuse. Care shall be taken to maintain whole slabs as removed.
  6. Upper Shelter Wall – Remove existing dry stack blocks. Set aside blocks for reuse and separate from blocks to be discarded.
  7. Upper Shelter Wall – Remove shale and place compacted aggregate #53 footer..
  8. Upper Shelter Wall – Reset and replace existing and salvaged dry stack blocks. Replace with new stone as required. Install geogrid fabric and structural backfill as wall is built up. Clean stone to provide a match between old and new.



9. Upper Shelter Wall – Install storm sewer and inlets in excavation area.
10. Upper Shelter Wall – Reset stone slabs for walk.
11. Upper Shelter Wall - Pour new concrete curb and sidewalks.
12. Upper Shelter Wall – Install HMA Patching , wheel stops and painted lines.
13. Lower Shelter Walk to Trail 2 – Install storm sewer.
14. Lower Shelter Walk to Trail 2 – Remove existing dry stack blocks and walkway. Set aside blocks and walkway for reuse and separate from blocks to be discarded.
15. Lower Shelter Walk to Trail 2 – Remove shale and place compacted aggregate #53 footer.
16. Lower Shelter Walk to Trail 2 – Reset and replace existing and salvaged dry stack blocks and walkway. Replace with new stone as required. Install geogrid fabric and structural backfill as wall is built up. Clean stone to provide a match between old and new. Pin each top stone to lower stone with (2) ½ inch steel pins each, at 1-1/2” depth into each stone.
17. Lower Shelter Walk to Trail 2 – Construct wood landing and stair connection at upper end.
18. Deliver excess stone materials from both locations to owner for reuse. Delivery location shall be within the confines of the Park boundaries. Slabs and stones that can be reused shall be stacked with appropriate hardwood spacers. Other stone material that can not be reused can be disposed in the Park boundaries.
19. Mulch seed all disturbed areas at both locations.
20. Remove maintenance of traffic and pedestrian safety measures at both locations.
21. Remove erosion control at both locations after seeding is well established.



It is broadly estimated that 1/3 of the existing dry stack stones will need to be replaced. Contractor is responsible for determining the amount of new stone that will be required, and the amount of existing stone that can be reused in whole or in part.

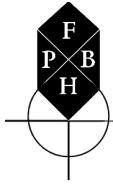
An existing condition summary and photographs for assistance in contractor takeoffs follow this section.

## 1.2 RELATED REQUIREMENTS

- A. Refer to the Agreement for an enumeration of the Contract Documents.
- B. The CONTRACTOR is responsible for coordination with other Contractors and subcontractors, and coordination with park personnel for the operation of existing facilities.

## 1.3 WORK SEQUENCE

- A. This Project involves work within a State Park owned by the Indiana Department of Natural Resources. Work activities of the CONTRACTOR shall be properly sequenced and coordinated to allow the OWNER to operate the existing facilities as required and to provide access to the public per the directives of the park management. Unscheduled closure of roadways will not be permitted.
- B. Interruption of Existing Facilities
  - 1. The CONTRACTOR shall plan, schedule and accomplish the work of this Contract to avoid interruption of operation and traffic flow for the park. All road closures shall be scheduled well in advance and only with the approval of the OWNER. The CONTRACTOR shall notify the ENGINEER in writing of such need as far ahead of the interruption as possible, but in no case less than one (1) week prior to the closure. Items to be included in the notification are as follows:
    - a. Construction sequence to minimize existing park traffic flow interruption time, and proposed time of day that work would be accomplished.
    - b. Expected length of time of the interruption.
    - c. Alternate procedures in the event the expected time is exceeded.
    - d. List of all equipment and material that must be on hand to complete the work.



Additional requirements for Road Closures are listed in SECTION 02500 - PARK UTILITY AND TRAFFIC COORDINATION of these specifications.

2. The ENGINEER shall review the Contractor's written notification, and the ENGINEER and OWNER will determine that the proposed interruption is acceptable.

## **PART 2 - PRODUCTS**

Not used

## **PART 3 - EXECUTION**

Not used

**-END OF SECTION-**





10+00 to 10+30	Minor Delamination
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10+00 to 10+30	Minor Delamination
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10+30 to 10+50	Minor Delamination Minor Leaning to the South
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10+50 to 10+75	Minor Delamination
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10+75 to 11+00	One block delamination Wall returns to Grade
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11+00 to 11+25	Wall at Grade -
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11+25 to 11+50	Wall at Grade -
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11+50 to 11+75	Wall at Grade -
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11+75 to 12+00	Wall at Grade -
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12+00 to 12+25	Blocks and Wall leaning to the North
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12+25 to 12+50	Block separation Stairs
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12+50 to 12+75	Block separation Wall leaning to North
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12+75 to 13+00	Wall collapse Block separation
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13+00 to 13+25	Block separation Wall leaning to North
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13+25 to 13+50	Block separation - Delamination Wall leaning to North
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13+50 to 13+75	Block separation - Stairs Wall leaning to North
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13+75 to 14+00	Block separation North to South Wall leaning to South
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14+00 to 14+25	Block separation - Delamination Tree in Wall - Wall Heaved
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14+25 to 14+50	Wall Heaved - Block Shifting Wall at Grade
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14+50 to 14+75	Wall at Grade –
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10+00 to 10+30	Wall at Grade -
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10+00 to 10+30	Wall at Grade -
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10+30	Wall at Grade -
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10+30 to 10+50	Wall at Grade -
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10+50 to 10+75	Wall at Grade -
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10+75 to 11+00	Wall at Grade -
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11+00 to 11+25	Wall at Grade -
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11+25 to 11+50	Wall at Grade –
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11+50 to 11+75	Wall at Grade –
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11+75 to 12+00	Wall at Grade – Tree Uprooted
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12+00 to 12+25	Block separation – Delamination Isolated Collapse
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12+25 to 12+50	Block separation - Delamination Isolated Collapse - Stairs – Stone Cracked
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12+50 to 12+75	Block separation – Delamination - Wall Collapse Drainageway at 12+75 following foot path to North
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12+75 to 13+00	Block separation - Delamination Wall Collapse
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13+00 to 13+25	Delamination
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13+25 to 13+50	Delamination – Wall collapse Wall Leaning to North
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13+50 to 13+75	Delamination Block separation - Stairs
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13+75 to 14+00	Delamination Wall Leaning to North
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14+00 to 14+25	Block Separation - Delamination Tree in Wall - Heaving at tree
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14+25 to 14+50	Wall Heaved - Block Shifting Wall at Grade
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14+50 to 14+75	Wall at Grade -
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14+50 to 14+75	Wall at Grade –
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12+50 to 12+75 Detail	Delamination – Broken Steps Drainageway at 12+75 following foot path to North
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12+75 Detail	Drainageway at 12+75 following foot path to North
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12+75 Detail	Drainageway at 12+75 following foot path to North
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12+75 Details	Drainageway at 12+75 following foot path to North
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12+75 Detail	Drainageway at 12+75 following foot path to North
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13+50 to 13+75 Detail	Delamination Block separation - Stairs
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10+05 to 10+28	Landing and Bend - Landing Stone Missing Isolated Delamination - Wall wedged over Walkway
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10+05 to 10+28	Landing and Bend - Landing Stone Missing Isolated Delamination - Wall wedged over Walkway
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10+28 to 10+40	Delamination - Old Patching 7 steps split
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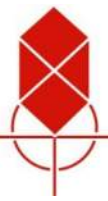


10+28 to 10+40	Delamination - Old Patching 7 steps split
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10+40 to 10+50	Excessive Delamination – Steps delaminated Wall wedged over Walkway
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10+50 to 10+60	Landing - Minor delamination Steps have failure
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10+50 to 10+60	Landing - Minor delamination Steps have failure
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10+60 to 10+75	Minor delamination Landing
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10+60 to 10+75	Minor delamination Landing
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10+75 to 10+85	Isolated landing fragmentation
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10+75 to 10+85	Isolated landing fragmentation
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10+85 to 11+00	Heaving at Tree Isolated Delamination and fragmentation
11+00 to end	No landing stone





10+05 to 10+28	No block Wall Steps lean left
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10+28 to 10+45	Wall Failure Block Delamination - Complete separation
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10+28 to 10+45	Wall Failure Block Delamination - Complete separation
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10+45 to 10+66	Total wall failure Debris on hillside
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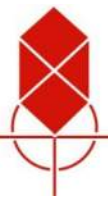




10+45 to 10+66	Total wall failure Debris on hillside
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10+66 to 10+75	Delamination - Separation from steps Block fragmentation
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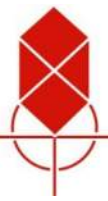


10+75 to 10+88	Isolated delamination Minor separation from steps



10+85 to 11+00	Isolated delamination Separation from steps
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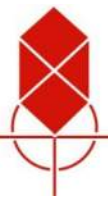




10+28 to 10+45	Failure
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10+28 to 10+45	Failure
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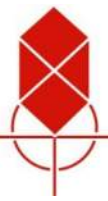


10+28 to 10+45	Failure
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10+28 to 10+45	Failure
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10+28 to 10+45	Failure
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10+45 to 10+66	Total wall failure - Debris on hillside 4 exposed layers under landing
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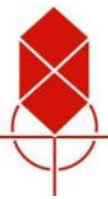


10+45 to 10+66	Total wall failure - Debris on hillside 4 exposed layers under landing
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10+45 to 10+66	Total wall failure - Debris on hillside 4 exposed layers under landing
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10+45 to 10+66	Total wall failure - Debris on hillside 4 exposed layers under landing
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10+45 to 10+66	Total wall failure - Debris on hillside 4 exposed layers under landing
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10+45 to 10+66	Total wall failure - Debris on hillside 4 exposed layers under landing
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10+45 to 10+66	Total wall failure - Debris on hillside 4 exposed layers under landing
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10+45 to 10+66	Total wall failure - Debris on hillside 4 exposed layers under landing
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10+66 to 10+75	Delamination Structural Failure
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10+66 to 10+75	Delamination Structural Failure
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10+66 to 10+75	Delamination Structural Failure
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10+66 to 10+75	Delamination Structural Failure
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10+66 to 10+75	Delamination Structural Failure
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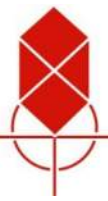


10+75	10 foot Estimated wall height
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10+75 to 11+00	Delamination
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10+75 to 11+00	Delamination
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10+75 to 11+00	Delamination
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11+00 to 11+20	Wall failure due to drainage - Debris on hillside 4 feet drainage scour
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11+00 to 11+20	Wall failure due to drainage - Debris on hillside 4 feet drainage scour
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11+00 to 11+20	Wall failure due to drainage - Debris on hillside 4 feet drainage scour
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11+00 to 11+20	Wall failure due to drainage - Debris on hillside 4 feet drainage scour
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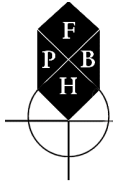


11+20 to 11+40	Wood Landing Undermined Out of Plumb
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11+20 to 11+40	Connect to landing with new wooden steps
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**SECTION 01020  
ALLOWANCES**

**PART 1 - GENERAL:**

1.01 REMEDIATION ALLOWANCE

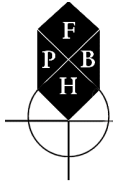
A. Contractor shall include an allowance of **\$15,000.00 in the Base Bid** for remediation of unforeseen constraints. This amount shall be included as a separate item in the Schedule of Values adding up to the total bid price.

B. Such constraints may include but are not necessarily limited to unforeseen conditions; improperly recorded or unrecorded physical properties and conditions at the site; obstruction of or delays to reasonable work sequences by the Property, or the Owner; uncommon adverse weather or site conditions; and conflict within or omissions from the Contract Documents.

C. All remediation work shall be proposed to and authorized by the Director of Public Works Division prior to execution, jointly documented by Contractor and Designer, and recorded in Contractor's as-built drawings and Designer's project record documents.

D. **If any portion of the allowance is not used during the project, that portion will revert to the owner and will not be included in the contractor's final payment.**

**END OF SECTION**



## SECTION 01200 PROJECT MEETINGS

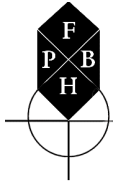
### **PART 1 - GENERAL**

#### 1.01 PRECONSTRUCTION CONFERENCES

- A. Prior to commencing the work, a preconstruction conference will be held at the job site and the following organizations shall have at least one representative in attendance: OWNER, ENGINEER, CONTRACTOR, Indiana Department of Natural Resources Division Project Manager, major Subcontractors, and Utility representatives (as needed).
- B. The preconstruction conference will be for the purpose of reviewing procedures to be followed concerning the orderly flow of required paperwork, coordination of the various parties involved with the project, park access requirements, review of shop drawing submittals, contract time, liquidated damages, payment estimates, change orders, regulatory requirements, labor requirements and other items of interest to the parties involved.

#### 1.02 PROGRESS MEETINGS

- A. A progress meeting will be held at least twice each month to review progress of the work, discuss problems encountered or foreseen, coordinate the work and answer any questions as they arise, and administer changes.
- B. The organizations listed under 1.01 above shall be given advance notification, and shall have at least one representative in attendance at each meeting.
- C. Minutes of each progress meeting will be kept by the ENGINEER and a typed copy shall be distributed to all parties after the progress meeting. All parties shall review these minutes and shall in writing, within seven days of receipt, inform the ENGINEER if there are errors or changes to be made. If no response is received within this time period it shall be assumed that there are no corrections and the record of the minutes shall become a part of the construction documents as are change orders, work directives, etc.



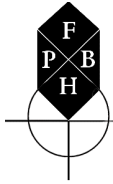
**PART 2 - PRODUCTS**

Not used.

**PART 3 - EXECUTION**

Not used.

**-END OF SECTION-**



## SECTION 01300 SUBMITTALS

### **PART 1 - GENERAL**

#### 1.01 DESCRIPTION OF REQUIREMENTS

- A. This section specifies the general methods and requirements of submissions applicable to, the following work related submittals: (a) construction schedule, (b) schedule of submittals, (c) shop drawings, product data, and samples, (d) mock-ups, (e) construction photographs, and (f) Contractor's record drawings.

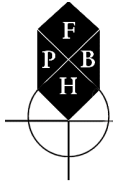
#### 1.02 CONSTRUCTION SCHEDULE

- A. The CONTRACTOR shall submit to the ENGINEER the construction schedule. The schedule shall account for all work of the CONTRACTOR and his Sub-Contractors.
- B. The CONTRACTOR shall update the construction schedule information monthly and submit the update information to the ENGINEER at the same time the pay estimate is prepared. The schedule shall contain all of the items of the periodic estimate and pay schedule.
- C. The CONTRACTOR bears full responsibility for scheduling all phases and stages of the work including his subcontractors work to insure its successful prosecution and completion within the time specified in accordance with all provisions of the Contract Documents.

#### 1.03 SHOP DRAWINGS, PRODUCT DATA, SAMPLES, O&M INSTRUCTIONS

- A. Shop Drawings
  - 1. Shop drawings include, but are not necessarily limited to, custom prepared data such as fabrication and erection/installation drawings, schedule information, setting diagrams, actual shop work manufacturing instructions, custom templates, special wiring diagrams, coordination drawings, individual system of equipment inspection and test reports including performance curves and certifications, as applicable to the work.





2. All details on shop drawings submitted for review shall show clearly the relation of the various parts to the main members and lines of the structure, and where correct fabrication of the work depends upon field measurements; such measurements shall be made and noted on the shop drawings before being submitted for review.

B. Product Data

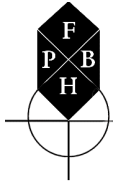
1. Product data as specified in individual sections, include, but are not necessarily limited to, standard prepared data for manufactured products (sometimes referred to as catalog data), such as the manufacturer's product specification and installation instructions, availability of colors. and patterns, manufacturer's printed statements of compliances and applicability, roughing in diagrams and templates, catalog cuts, product photographs, standard wiring diagrams, printed performance curves and operational range diagrams, production or quality control inspection and test reports and certifications, mill reports, product operating and maintenance instructions and recommended spare parts listing, and printed product warranties, as applicable to the Work. The CONTRACTOR shall ensure that the product data submitted has adequate cross reference information that relates to how the specifications identify the product so that the ENGINEER will be able to make the determination that the project is "equal" to what is specified.

C. Samples

1. Samples specified in individual sections, include, but are not necessarily limited to, physical examples of the work such as sections of manufactured or fabricated work, small cuts or containers of materials, complete units of repetitively used products, color/texture/pattern swatches and range sets, specimens for coordination of visual effect, graphic symbols, and units-of work that can be used by the ENGINEER or OWNER for independent inspection and testing and to determine their applicability to the project work.

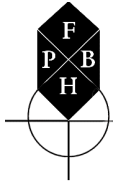
D. Operation and Maintenance Instructions

1. O&M instructions shall conform to the particular requirements of the individual sections.



#### 1.04 CONTRACTOR'S RESPONSIBILITY

- A. The CONTRACTOR shall provide a submittal schedule for shop drawings.
- B. The CONTRACTOR shall review shop drawings, product data and samples prior to submission to determine and verify the following:
  - 1. Field measurements
  - 2. Field construction criteria
  - 3. Catalog numbers and similar data
  - 4. Conformance with the Specifications
- C. All shop drawings submitted by the subcontractors for review shall be sent directly to the CONTRACTOR for preliminary checking. The CONTRACTOR shall be responsible for their submission at the proper time so as to prevent delays in delivery of materials.
- D. The CONTRACTOR shall check all shop drawings including subcontractor's shop drawings regarding measurements, size of members, materials, and details to satisfy himself that they conform to the intent of the Drawings and Specifications. Drawings found to be inaccurate or otherwise in error shall be corrected before submission thereof.
- E. Each shop drawing, working drawing, sample and catalog data submitted by the CONTRACTOR shall have affixed to it the following certification statement, signed by the CONTRACTOR: "Certification Statement: By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable reviewed shop drawings and all Contract requirements."
- F. The CONTRACTOR shall notify the OWNER in writing, at the time of submittal, of any deviations in the submittals from the requirements of the Contract Documents.
- G. The CONTRACTOR should include the notation "Critical Path" on critical path submittals.
- H. The review of shop drawings, samples or, catalog data by the ENGINEER shall not relieve the CONTRACTOR from his responsibility with regard to the fulfillment of the terms of the Contract.



- I. No portion of the work requiring a shop drawing, working drawing, sample, or catalog data shall be started nor shall any materials be fabricated or installed prior to the review or qualified review of such item. Fabrication performed, materials purchased or on site construction accomplished which does not conform to reviewed shop drawings and data shall be at the Contractor's risk. The OWNER will not be liable for any expense or delay due to the corrections or remedies required to accomplish conformity.
- J. Project work, materials, fabrication, and installation shall conform with reviewed shop drawings, working drawings, applicable samples, and catalog data.

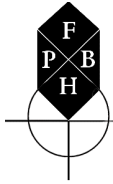
#### 1.05 SUBMISSION REQUIREMENTS

- A. The CONTRACTOR shall make submittals promptly in accordance with the accepted shop drawing submittal schedule, and in such sequence as to cause no delay in the work or in the Work of any other CONTRACTOR.
- B. Number of submittals required for initial review :
  1. Shop Drawings: Submit one (1) copies.
  2. Product Data: Submit one (1) copies.
  3. Samples: Submit number stated in the respective specification sections.
  4. O&M Instructions: Submit one (1) copies in accordance with the respective Specifications to which they apply.

After final approval, Five sets shall be submitted, three will be returned to the Contractor. If more than three sets are needed for return then the contractor shall submit additional sets as needed.

The contractor shall also include a transmittal that includes the project information and their standard certification for the item.

- C. Submittals shall contain:
  1. The date of submission and the dates of any previous submissions.
  2. The project title, contract number, and submittal number.
  3. CONTRACTOR identification.
  4. The names of:
    - a. CONTRACTOR
    - b. Supplier
    - c. Manufacturer
  5. Identification of the product, with the specification section number.
  6. Field dimensions, clearly identified as such.



7. Relation to adjacent or critical features of the work or materials.
8. Applicable standards, such as ASTM or Federal Specification numbers.
9. Identification of deviations from contract documents.
10. Identification of revisions on resubmittals.
11. An 8 in. x 3 in. blank space for Contractor's and Engineer's stamps.
12. Critical path notation as required.

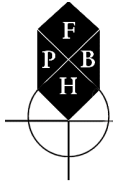
D. ALTERNATE PROCEDURE:

Electronic, paperless submission and return is an acceptable alternative. Items shall be presented only in searchable pdf format. The contractor shall also include a transmittal that includes the project information and their standard certification for the item. The engineer has the option to electronically mark the submission or only respond with a written transmittal and comments. If contractor elects to submit by the alternate electronic procedure, then he shall notify the engineer at the pre construction conference prior to any submission. If elected then every effort shall be made to submit all items in this manner, and only to mix and match the systems when items are not available electronically.

1.06 RESUBMISSION REQUIREMENTS

- A. The CONTRACTOR shall make any corrections or changes in the submittals required by the ENGINEER and resubmit until accepted, in accordance with the following:
  1. Shop drawings and product data:
    - a. Revise initial drawings or data, and resubmit as specified for the initial submittal.
    - b. Indicate any changes which have been made other than those requested by the ENGINEER.
  2. Samples: Submit new samples as required for initial submittal.
- B. The CONTRACTOR shall bear the cost for all review and processing of initial and any subsequent resubmittals.





#### 1.07 DISTRIBUTION

- A. The CONTRACTOR shall distribute reproductions of reviewed shop drawings and copies of reviewed product data and samples, where required, to the job site file and elsewhere/as directed by the ENGINEER. Number of copies shall be as directed by the ENGINEER but shall not exceed five (5) unless the contractor requires extra sets or copies.

#### 1.08 MOCK-UPS

- A. Mock-up units as specified in individual sections include but are not necessarily limited to, complete units of the standard of acceptance for that type of work to be used on the project. They shall be removed by CONTRACTOR at the completion of the Work or when directed.

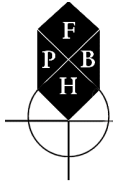
#### 1.09 CONSTRUCTION PHOTOGRAPHS

- A. The CONTRACTOR shall be responsible for digital video of all alignments, roadways to be used by construction vehicles, and site locations over the entire project and shall provide a copy of this videotape prior to beginning any work. This shall include a complete digital video of the roadway routes to be used for equipment access and materials hauling within the park. This videotape will be used in the instance of any dispute over restoration, or damage to public or private property. The videotape shall be standard color with “voice-over” commentary on stations, locations, existing features, and proposed improvement locations. Each alignment will be filmed in order from the lowest station to the highest station with pauses at the proposed location of each structure and provides a 360 degree look at the area to be disturbed. It is recommended but not required that the CONTRACTOR utilize a subcontractor for this operation that specializes in such services.

- B. The CONTRACTOR shall provide photographs and / or digital photographs, and / or digital videos of site and construction during the progress of work. The photographs shall be taken monthly on the cutoff date for each Application for Payment and routinely throughout the project to document work status, problems, and potential changes. Two sets shall be produced; one for the site, and one for the owner. Identify each print on front or digital folders and filenames. List name of project, date and name of photographer in the submittal.

#### 1.10 GENERAL PROCEDURES FOR SUBMITTALS

- A. Coordination of Submittal Times: The CONTRACTOR shall prepare and transmit each submittal sufficiently in advance of performing the related Work or other applicable activities, or within the time specified in the individual Work section



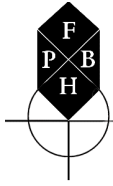
of the Specifications, so that the installation will not be delayed by processing times including disapproval and resubmittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery and similar sequenced activities. No extension of time will be authorized because of the Contractor's failure to transmit submittals sufficiently in advance of the Work.

#### 1.11 SCHEDULE OF VALUES AND PAYMENTS

- A. Within ten (10) days after award of the Contract, the CONTRACTOR shall submit to the OWNER in triplicate, a breakdown of the lump sum items, including a schedule of values and an estimated schedule of payments. This breakdown shall be subject to approval by the OWNER, and when so approved shall become the basis for determining progress payments and for negotiation of change orders, if required.
- B. The schedule of values submitted by the CONTRACTOR to the OWNER for approval must include a cost for providing approved O&M manuals for all equipment. The cost finally used in the schedule of values will be established by mutual agreement between the OWNER and the CONTRACTOR on a per item basis. Regardless of the cost in the schedule of values for O&M manuals, payments in excess of 75% of the equipment cost will not be made until receipt of approved O&M Manuals.

#### 1.12 CONTRACTOR'S RECORD DRAWINGS

- A. The format of these drawings shall be similar to the Contract Drawings.
- B. Within 60 days after the Notice to Proceed is issued, the CONTRACTOR shall submit to the OWNER a written description of his procedure and format for record drawings. The CONTRACTOR, OWNER, ENGINEER shall meet to assure mutual acceptance of the procedure.
- C. The CONTRACTOR shall keep his record drawings up to date at the job site, and shall make them available for review by the ENGINEER or his representatives when requested.
- D. The CONTRACTOR shall submit two (2) sets of his construction record drawings to the ENGINEER upon completion of the work, and prior to final payment.



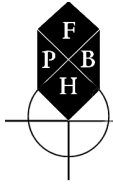
**PART 2 - PRODUCTS**

Not used.

**PART 3 - EXECUTION**

Not used.

**-END OF SECTION-**



## SECTION 01400 QUALITY CONTROL

### **PART 1 - GENERAL**

#### 1.01 QUALITY CONTROL - GENERAL

- A. Work of all crafts and trades shall be laid out to lines and elevations as established by the CONTRACTOR from the Drawings or from instructions by the ENGINEER.
- B. Unless otherwise shown, all work shall be plumb and level, in straight lines and true planes, parallel or square to the established lines and levels. The Work shall be accurately measured and fitted to tolerance as established by the best practices of the crafts and trades involved, and shall be as required to fit all parts of the Work carefully and neatly together.
- C. All equipment, materials and articles incorporated into the work shall be new and of comparable quality as specified. All workmanship shall be first-class and shall be performed by mechanics skilled and regularly employed in their respective trades.
- D. The CONTRACTOR shall determine that the equipment he proposes to furnish can be brought into the site and installed in the space available. Equipment shall be installed so that all parts are readily accessible for inspection and maintenance as applicable.

#### 1.02 WORKMANSHIP

- A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.

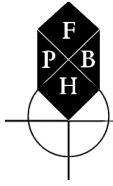
#### 1.03 MANUFACTURERS INSTRUCTIONS

- A. Comply with instructions in full detail.

#### 1.04 MANUFACTURERS' FIELD SERVICES

- A. The CONTRACTOR shall arrange for the services of qualified service representatives from the companies manufacturing or supplying each type of equipment described in the -specification sections.



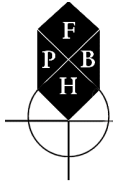


- B. The manufacturer or supplier shall provide sufficient Engineering and technician man-hours to satisfactorily complete supervision of installation, equipment check-out, and field acceptance tests.

#### 1.05 TESTING SERVICES

- A. Tests, inspections and certifications of materials, equipment, subcontractors or completed work, as required by the various sections of the Specifications shall be obtained by the CONTRACTOR and all costs shall be included in the Contract Price.
- B. The CONTRACTOR shall submit to the ENGINEER the name of testing laboratory(s) to be used.
- C. CONTRACTOR shall deliver written notice to the, ENGINEER at least 48 hours in advance of any inspections or tests to be made at the Project site. All inspections or tests to be conducted in the field shall be done in the presence of the ENGINEER or his representative.
- D. Certifications by independent testing laboratories may be by copy of the attestation(s) and shall give scientific procedures and results of tests. Certifications by persons having interest in the matter shall be by original attest properly sworn to and notarized.

**-END OF SECTION-**



**SECTION 01410**  
**REGULATORY REQUIREMENTS & REFERENCES**

**PART 1 - GENERAL**

1.01 - GENERAL REQUIREMENTS

Contractor shall comply with the requirements of any and all regulatory agencies having jurisdiction over the project.

These are included but not limited to the following:

- A. None Attached

1.02 REFERENCE

- A. Geotechnical Report conducted by ATC, dated February 17, 2020, and consisting of 30 pages is included for reference – Copy follows this section.

**PART 2 - PRODUCTS**

Not used

**PART 3 - EXECUTION**

Not Used.

**-END OF SECTION-**



**GEOTECHNICAL DATA REPORT**

BROWN COUNTY WALL AND STAIR REHABILITATION  
BROWN COUNTY STATE PARK  
NASHVILLE, BROWN COUNTY, INDIANA

ATC PROJECT NO. 170GC00923

FEBRUARY 17, 2020

PREPARED FOR:

FPBH, Inc.  
72 HENRY STREET  
NORTH VERNON, INDIANA 47265  
BERNARD HAUERSPERGER, P.E.



February 17,2020

Mr. Bernard Hauersperger, P.E.  
FPBH, Inc.  
72 Henry Street  
North Vernon, Indiana 47265

ATC Group Services LLC

7988 Centerpoint Dr.  
Suite 100  
Indianapolis, IN 46256

Phone +1 317 849 4990  
Fax +1 317 849 4278

[www.atcgroupservices.com](http://www.atcgroupservices.com)

Re: **Geotechnical Data Report**  
Brown County Wall and Stair Rehabilitation  
Brown County State Park  
Nashville, Brown County, Indiana  
ATC Project No. 170GC00923

Dear Mr. Hauersperger:

Submitted herewith is the Geotechnical Data Report for the referenced project. This study was authorized in accordance with ATC Proposal Agreement No. PE-19-1214 dated August 29, 2019.

This geotechnical data report contains the results of our field and laboratory testing program. The remaining untested soil and rock samples will be retained by ATC at our Indianapolis office until notified by FPBH, Inc.

We appreciate the opportunity to be of service to you on this project. If we can be of any further assistance, or if you have any questions regarding this report, please do not hesitate to contact either of the undersigned.

Sincerely,

Ellen Anne W. Wilkinson, P.E.  
Senior Geotechnical Engineer

Daniel A. Homm, P.E.  
Senior Project Engineer



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## **APPENDICES**

### **APPENDIX A**

VICINITY MAP – Figure 1

BORING PLANS – Figure 2

### **APPENDIX B**

FIELD CLASSIFICATION SYSTEM FOR SOIL EXPLORATION

TEST BORINGS LOGS

### **APPENDIX C**

GRAIN SIZE DISTRIBUTION TEST REPORTS

ATTERBERG LIMITS RESULTS

# 1 INTRODUCTION

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## 1.1 Purpose and Scope of Services

The purpose of this Geotechnical Data Report (GDR) is to present the results of the test borings and laboratory tests performed by ATC Group Services LLC (ATC) for this project. The project includes the rehabilitation of the existing stone walls near the parking areas for the North Gate Trail Loop and the North Tower Loop. The general location of the project sites are shown on the Vicinity Map and Boring Location Plan (see Figures 1 and 2 in Appendix A).

The geotechnical investigation consisted of an exploratory drilling and sampling program, laboratory testing of soil samples obtained from the test borings and preparation of this data report.

## 1.2 General Project Description

The project is being developed by the Indiana Department of Natural Resources (DNR) as part of the proposed improvements to the Brown County State Park located in Nashville, Brown County, Indiana. The subsurface data contained herein is reportedly for use in planning the earth-related components of the proposed gravity retaining walls. The scope of this subsurface investigation does not include global stability analyses or any recommendations regarding the construction of any element of the project.

# 2 SCOPE OF WORK

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## 2.1 Field Investigation

The soil test borings drilled for this exploration were performed in two phases. The first phase of the field investigation consisted of performing six hand-auger test borings (Borings HA-01 through HA-06) in areas inaccessible to machine boring equipment. These borings were performed by ATC in December 2019. The second phase of the field investigation included three additional Test Borings (B-1 through B-3) located within the existing parking area near the North Gate Loop Trailhead. These borings were performed by ATC in January 2020 using truck-mounted drilling equipment using hollow-stem-augers to advance the boreholes.

The test boring locations were staked in the field by ATC representatives and the boring elevations and locations were surveyed by FPBH, Inc.

Split-barrel samples were obtained continuously using Standard Penetration Test (SPT) procedures (ASTM Procedure D1586) at 2.5 ft sample intervals. At all boring locations, samples of the bedrock materials were obtained using rock coring procedures in general accordance with ASTM D-2113. The equipment used to obtain the rock cores was a conventional "NX" double tube core barrel system with a diamond cutting bit. Recovered rock cores were measured in order to determine the recovery and the rock quality designation (RQD) in accordance with ASTM D-6032. The rock cores were field classified and placed in rock core boxes for transport to our geotechnical laboratory for further analysis.

Logs of all borings, which show visual descriptions of all soil and rock strata encountered using the USCS classification system (ASTM D2487) are included in Appendix B. Sampling information and other

pertinent field data and observations are also included on the boring logs. In addition, a sheet defining the terms and symbols used on the logs and explaining the SPT procedure is provided immediately preceding the test boring logs in Appendix B.

## 2.2 Laboratory Investigation

The disturbed soil samples were visually classified by an engineer in accordance with procedure ASTM D2488 and the visual classifications were verified or modified based upon the results of laboratory tests. Final boring logs were subsequently prepared and are included in Appendix B.

Soil index property tests including natural moisture content tests (ASTM D2216), grain size analyses (ASTM D422), and Atterberg limits tests (ASTM D4318) were performed on representative soil samples. In addition to the soil index property tests, calibrated hand penetrometer tests (“pocket penetrometer” tests) and unconfined compressive strength tests on rock (ASTM D2166) were performed on selected samples. The results of laboratory tests are included on the boring logs in Appendix B and/or on the test report sheets in Appendix C.

# 3 GENERAL SITE CONDITIONS

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## 3.1 Regional Physiographic Setting and Site Geology

The project site is located within the Norman Upland Physiographic Division, which is part of the Southern Hills and Lowlands Region of the State of Indiana. The bedrock in this area consists of Mississippian age limestone and siltstone of the Borden Group.

## 3.2 Subsurface Conditions

The general subsurface conditions at the site were investigated by drilling a total of 9 soil test borings to depths of 1.5 ft to 16.1 ft below the existing ground surface. Detailed descriptions of the subsurface conditions encountered in each test boring are presented on the Boring Logs in Appendix B. It should be noted that the stratification lines shown on the test boring logs represent approximate transitions between material types. In-situ stratum changes could occur gradually or at slightly different depths.

The test borings performed within the existing parking area (Borings B-1 through B-3) encountered 4 inches to 6 inches of asphalt pavement over 4 inches to 8 inches of crushed stone. Hand auger borings (HA-1 through HA-6) were performed at the base of the existing retaining walls and encountered 4 inches to 6 inches of topsoil. The test borings then encountered very soft to very stiff Lean Clay (CL) extending from beneath the pavements to depths ranging from 3 feet at Boring B-3 to 5.5 feet at Boring B-2. The hand auger borings generally encountered Lean Clay (CL) and Sandy Silts (ML) extending to refusal depths ranging from 1.2 feet at HA-4 to 4.8 feet at HA-3.

The borings encountered weathered shale beneath the shallow cohesive soils extending to auger refusal on bedrock corresponding to elevations ranging from 725.5 feet at soil Boring B-1 to 742.2 feet at Boring B-3. The depths to bedrock have been summarized in *Table 1*.

**Table 1: Depth to Rock**

Boring ID	Ground Surface Elevation (ft)*	Top of Weathered Rock Elevation (ft)*	Auger Refusal Elevation (ft)*	Rock Description
B-1	736.4	730.9	725.5	Shale Auger Refusal on Limestone
B-2	738.8	733.3	727.7	Shale and Sandstone Auger Refusal on Limestone
B-3	748.2	745.2	742.2	Shale
HA-1	735.9	732.1	732.1	Shale
HA-2	734.2	Not Encountered	Not Encountered	--
HA-3	751.9	747.1	747.1	Shale
HA-4	640.6	639.4	639.4	Shale
HA-5	651.3	649.8	649.8	Shale
HA-6	662.9	660.7	660.7	Shale

\*Ground surface elevations provided by FPBH, Inc.

Photographs of the completed rock cores are presented on the Boring Logs presented in Appendix B. The bedrock encountered was consistent with the information presented by the Indiana Geological Survey and was comprised of highly weathered shale/siltstone and moderately weathered limestone. Additionally, the RQD ranged from 29% to 44% indicating poor rock quality.

The consistencies of the cohesive soils as described above and on the boring logs were estimated based on the results of the standard penetration test (ASTM D1586).

### 3.3 Ground Water Conditions

Ground water observations were made during the drilling operations by noting the depth of water on the drilling tools. The ground water level measurements made in the test borings are indicated on the boring logs. These ground water levels are indications only of the free ground water level at the time the test borings were drilled and only at the specific locations of the test borings. Ground water levels at other locations will vary and fluctuations in the level of the ground water through time should be expected due to variations in factors not evident at the time of this investigation.

## 4 DISCUSSION OF FINDINGS

The following design recommendations have been developed on the basis of the previously described project characteristics (Section 1) and subsurface conditions (Section 3 and Appendix B). The design soil parameters presented herein are based on the assumption that all earth related elements of the project will be carefully and continuously observed, tested and evaluated by a geotechnical engineer or qualified geotechnical technician working under the direction of a geotechnical engineer to confirm that the earth



related elements of the project are compatible and consistent with the conditions encountered in the Test Borings. Table 2 summarizes the recommended soil parameters for use in design.

**Table 2: Recommended Soil Parameters for use in Design**

<b>Textural Classification</b>	<b>Saturated Unit Weight (pcf)</b>	<b>Cohesion, c (psf)</b>	<b>Friction Angle, <math>\Phi</math> (degrees)</b>
LEAN CLAY (CL)	120	0	25
SILT with SAND (ML)	125	0	28
SANDY SILT (ML)	125	0	30
SHALE	130	50	28

## 5 LIMITATIONS OF STUDY

---

This GDR presents the data from the subsurface investigation and laboratory testing performed for this project. The geotechnical information presented in this document is intended for use in the planning, design and construction of the proposed gravity retaining walls.

The data provided in this report was obtained from the test borings that depict subsurface conditions only at these specific locations and at the particular times designated on the logs. Soil, bedrock, and ground water conditions at other locations will differ from conditions occurring at these specific boring locations.

An inherent limitation of any geotechnical engineering investigation is that conclusions must be drawn on the basis of data collected at a limited number of discrete locations. The recommendations provided in this report were developed from the information obtained from the test borings that depict subsurface conditions only at these specific locations and at the particular time designated on the test boring logs. Soil, bedrock and ground water conditions at other locations may differ from conditions occurring at the test boring locations. The nature and extent of variations between the borings may not become evident until the course of construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations of this report after performing on-site observations and noting the characteristics of any variations.

The recommended soil parameters presented herein have been estimated for the sole purpose to establish and develop reasonable and appropriate criteria for designing the earth related elements of this project compatible with the project requirements that are outlined in this report. It is important to understand that the soil and ground water parameters presented in this report shall not be used in any other analyses or for any other purposes. The results of the laboratory analyses were used to make engineering judgements regarding appropriate design measures based upon the understanding of the limitations of the analyses methods and limitations of the subsurface data. The soil and ground water

parameters presented are not intended, nor shall they be construed, to represent precise soil and ground water conditions at any specific location, depth or time.

Our professional services have been performed, our findings obtained and our recommendations prepared in accordance with customary principles and practices in the field of geotechnical engineering at the time when the services were performed and at the location where the services were performed. This warranty is in lieu of all other warranties either express or implied. This company is not responsible for the independent conclusions, opinions or recommendations made by others based on the field exploration and laboratory test data, or any other information, presented in this report.

The scope of our services does not include any environmental assessment or investigation for the presence or absence of hazardous or toxic materials in the soil, ground water or surface water within or beyond the site studied.

ATC assumes no responsibility for any construction procedures, temporary excavations (including utility trenches), temporary dewatering or site safety during or after construction. The contractor shall be solely responsible for all construction procedures, construction means and methods, construction sequencing and for all safety measures during construction as well as the protection of all existing facilities. All applicable federal, state and local laws and regulations regarding construction safety shall be followed, including current Occupational Safety and Health Administration (OSHA) Regulations including OSHA 29 CFR Part 1926 "Safety and Health Regulations for Construction", Subpart P "Excavations", and/or successor regulations. The Contractor shall be solely responsible for designing and constructing stable, temporary excavations and should brace, shore, slope, or bench the sides of the excavations as necessary to maintain stability of the excavation sides and bottom and to protect the integrity of all existing facilities.

# Appendices

## **APPENDIX A**

VICINITY MAP – Figure 1  
BORING PLAN – Figure 2  
GENERALIZED SUBSURFACE PROFILE – Figure 3

## **APPENDIX B**

FIELD CLASSIFICATION SYSTEM FOR SOIL EXPLORATION  
TEST BORINGS LOGS

## **APPENDIX C**

GRAIN SIZE DISTRIBUTION TEST REPORTS  
ATTERBERG LIMITS RESULTS

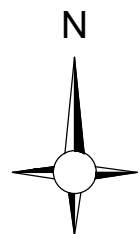
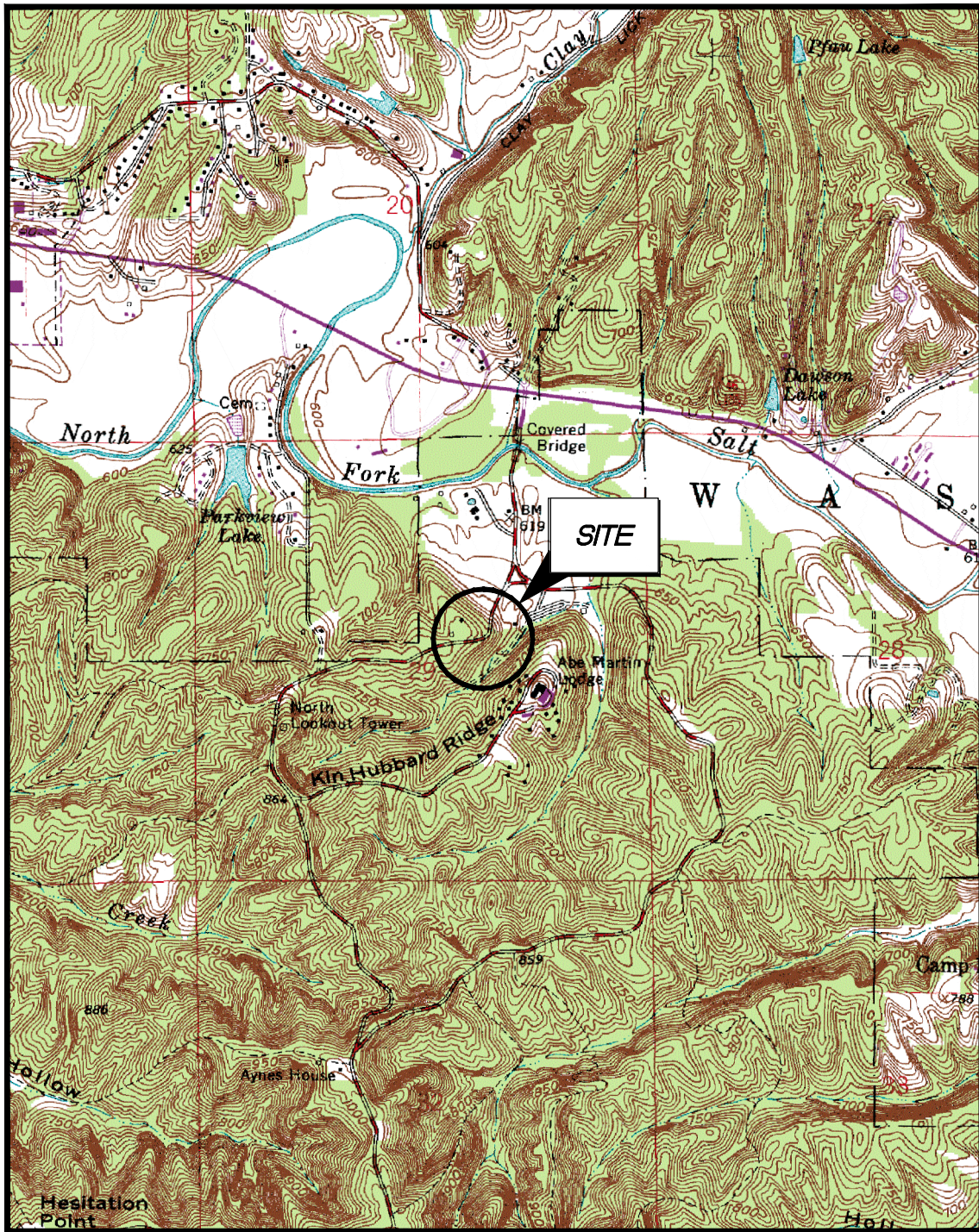
## **APPENDIX A**

VICINITY MAP – Figure 1

BORING PLAN– Figure 2

GENERALIZED SUBSURFACE PROFILE – Figure 3





## VICINITY MAP

FPBH, Inc.  
 BROWN COUNTY WALL AND STAIR REHABILITATION  
 BROWN COUNTY STATE PARK  
 NASHVILLE, BROWN COUNTY, INDIANA

Project Number: 170GC00923		Drn. By: JG
Drawing File: SEE LOWER LEFT		Ckd. By: EW
Date: 2/20	Scale: 1"= 2,000'	App'd By: EW
<b>ATC</b>		Figure: 1

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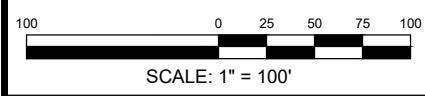
H:\2020\FPBH, INC\BROWN COUNTY STONE WALLS\GEO TECH\170GC00923-BPLAN.DWG, 11X17L

**LEGEND:**

B-1 TEST BORING  
 Boring Identification

HA-1 HAND AUGER  
 Point Identification

NOTE: ALL LOCATIONS ARE APPROXIMATE



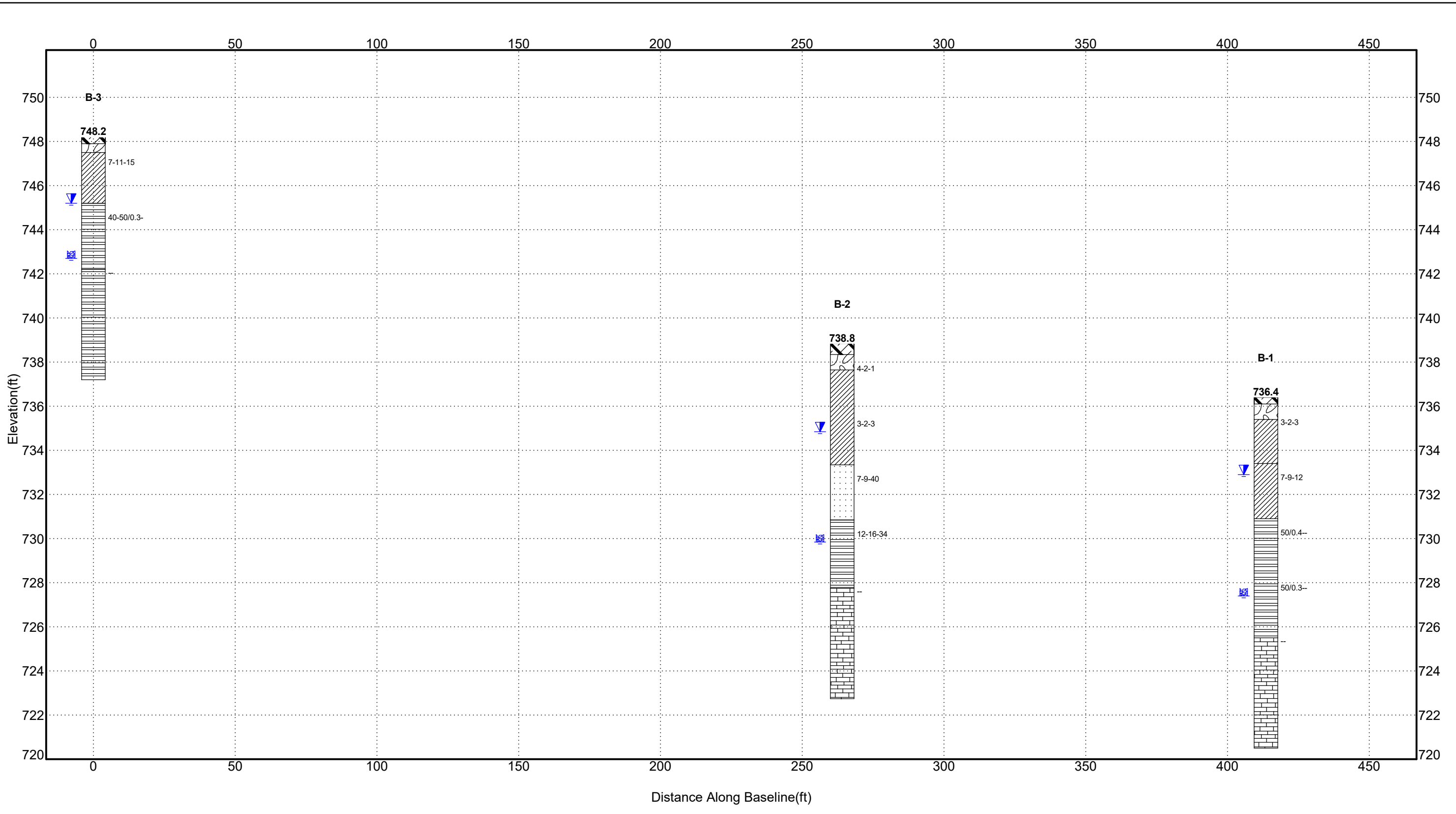
Project Number:	170GC00923
Drawing File:	SEE LOWER LEFT

<b>BORING PLAN</b>	
FPBH, Inc. BROWN COUNTY WALL AND STAIR REHABILITATION BROWN COUNTY STATE PARK NASHVILLE, BROWN COUNTY, INDIANA	
Date:	2/20
Scale:	AS SHOWN
Figure:	2

Dirn. By:	JG
Clkd. By:	EW
App'd By:	
Clkd. Date:	



ATC\_INDOT\_PROFILE\_4\_PROFILE\_GC00923 (NEW 2-5-2020).GPJ ATC\_INDOT\_GEOTECH.GDT 2/17/20



**GENERALIZED SUBSURFACE PROFILE**

Retaining Wall  
 INDOT DES No.: NA  
 Brown County State Park  
 Brown County, Indiana

**LITHOLOGY GRAPHICS**

- Asphalt
- Broken Limestone and Gravel
- Clay
- Shale, Interbedded Shale and Sandstone, Sandy Shale, Claystone
- Limestone
- Sandstone, Shaley Sandstone

<small>Project Number:</small> 170GC00923	<small>Drn. By:</small>
<small>Drawing File:</small> SEE LOWER LEFT	<small>Ckd. By:</small>
<small>Date:</small> 2/17/2020	<small>Scale:</small> AS SHOWN
 —AN ATLAS COMPANY—	
<small>Figure:</small>	3

## **APPENDIX B**

FIELD CLASSIFICATION SYSTEM FOR SOIL EXPLORATION  
TEST BORINGS LOGS



# FIELD CLASSIFICATION SYSTEM FOR SOIL EXPLORATION

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

<u>Density</u>		<u>Particle Size Identification</u>	
Very Loose	- 5 blows/ft or less	Boulders	- 8 inch diameter or more
Loose	- 6 to 10 blows/ft	Cobbles	- 3 to 8 inch diameter
Medium Dense	- 11 to 30 blows/ft	Gravel	- Coarse - 1 to 3 inch
Dense	- 31 to 50 blows/ft		Medium - ½ to 1 inch
Very Dense	- 51 blows/ft or more		Fine - ¼ to ½ inch
		Sand	- Coarse 2.00mm to ¼ inch (dia. of pencil lead)
			Medium 0.42 to 2.00mm (dia. of broom straw)
			Fine 0.074 to 0.42mm (dia. of human hair)
		Silt	0.074 to 0.002mm (cannot see particles)
<u>Relative Proportions</u>			
Descriptive Term	Percent		
Trace	1 - 10		
Little	11 - 20		
Some	21 - 35		
And	36 - 50		

## COHESIVE SOILS (Clay, Silt and Combinations)

<u>Consistency</u>		<u>Plasticity</u>	
Very Soft	- 3 blows/ft or less	Degree of Plasticity	Plasticity Index
Soft	- 4 to 5 blows/ft	None to slight	0 - 4
Medium Stiff	- 6 to 10 blows/ft	Slight	5 - 7
Stiff	- 11 to 15 blows/ft	Medium	8 - 22
Very Stiff	- 16 to 30 blows/ft	High to Very High	over 22
Hard	- 31 blows/ft or more		

Classification on the logs are made by visual inspection of samples.

**Standard Penetration Test** — Driving a 2.0" O.D. 1-3/8" I.D. sampler a distance of 1.0 foot into undisturbed soil with a 140 pound hammer free falling a distance of 30 inches. It is customary for ATC to drive the spoon 6 inches to seat into undisturbed soil, then perform the test. The number of hammer blows for seating the spoon and making the test are recorded for each 6 inches of penetration on the drill log (Example — 6-8-9). The standard penetration test result can be obtained by adding the last two figures (i.e., 8 + 9 = 17 blows/ft). (ASTM D-1586-11).

**Strata Changes** — In the column "Soil Descriptions" on the drill log the horizontal lines represent strata changes. A solid line (\_\_\_\_\_) represents an actually observed change. A dashed line ( \_ \_ \_ \_ ) represents an estimated change.

**Ground Water** observations were made at the times indicated. Porosity of soil strata, weather conditions, site topography, etc., may cause changes in the water levels indicated on the logs.



# Boring Log

BORING NO.: **B-1**  
 SHEET 1 OF 2  
 NORTHING : 1435776.00  
 EASTING : 171550.94  
 DATUM : \_\_\_\_\_  
 DATE STARTED : 01-14-20  
 DATE COMPLETED : 01-14-20

GEOTECHNICAL CONSULTANT : ATC Group Services LLC  
 DES NO. : \_\_\_\_\_ STRUCTURE # : \_\_\_\_\_

PROJECT TYPE : Retaining Wall

LOCATION : Brown County State Park

COUNTY : Brown PROJECT NO.: 170GC00923

ELEVATION : <u>736.4</u>	BORING METHOD : <u>Hollow Stem Auger</u>	HAMMER : <u>Auto</u>
STATION : _____	RIG TYPE : <u>B-57 Truck</u>	DRILLER/INSP : <u>G. Lauber/E. Wilkinson</u>
OFFSET : _____	CASING DIA. : _____	TEMPERATURE : <u>36 °F</u>
LINE : _____	CORE SIZE : <u>4.0</u>	WEATHER : <u>Clear</u>
DEPTH : <u>15.9 ft</u>		

GROUNDWATER:  Encountered at None  At completion 3.5 ft  After -- hours  Caved in at 9.0 ft

ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6"	% RECOVERY	MOISTURE CONTENT	DRY DENSITY, pcf	POCKET PEN., tsf	UNCONF. COMP., tsf	ATTERBERG LIMITS			REMARKS
										LL	PL	PI	
		<b>Asphalt</b> 4 inches											0.0, Pavement patched.
		<b>Crushed Stone</b> 8 inches											
735.0	2.5	<b>Lean Clay (CL)</b> Brown, moist, soft, (Lab No. 3)	SS1	3-2-3	67	26.3		0.25					
	5.0	<b>Lean Clay (CL)</b> Brown, moist, very stiff, (Lab No. 1)	SS2	7-9-12	100	14.6		3.25					
730.0	7.5	<b>Shale</b> Brown, highly weathered	SS3	50/0.4	100	11.0							
	10.0		SS4	50/0.3	100	8.2							
725.0	12.5	<b>Auger Refusal at 10.9 ft</b>							111				
	15.0	<b>Limestone</b> Brown to Gray, moderately weathered	RC1 RQD=44%		98								
720.0	17.5	<b>Bottom of Boring at 15.9 ft</b>											

ATC LOG WITH PHOTO\_NIE\_GC00923 (NEW 2-5-2020).GPJ\_INDOT TEMPLATE.GDT 2/14/20



# Boring Log

BORING NO.: B-1  
SHEET 2 OF 2  
NORTHING : 1435776.00  
EASTING : 171550.94  
DATUM :

GEOTECHNICAL CONSULTANT : ATC Group Services LLC  
DES NO. : \_\_\_\_\_ STRUCTURE # : \_\_\_\_\_

PROJECT TYPE: Retaining Wall

## PHOTOS



Figure B-1.1  
Rock Core #1  
10.9' to 15.9'  
Recovery = 98%  
Rock Quality Designation (RQD) = 44%



# Boring Log

BORING NO.: **B-2**  
 SHEET 1 OF 2  
 NORTHING : 1435740.54  
 EASTING : 171405.01  
 DATUM : \_\_\_\_\_  
 DATE STARTED : 01-14-20  
 DATE COMPLETED : 01-14-20

GEOTECHNICAL CONSULTANT : ATC Group Services LLC  
 DES NO. : \_\_\_\_\_ STRUCTURE # : \_\_\_\_\_

PROJECT TYPE : Retaining Wall

LOCATION : Brown County State Park

COUNTY : Brown PROJECT NO.: 170GC00923

ELEVATION : <u>738.8</u>	BORING METHOD : <u>Hollow Stem Auger</u>	HAMMER : <u>Auto</u>
STATION : _____	RIG TYPE : <u>B-57 Truck</u>	DRILLER/INSP : <u>G. Lauber/E. Wilkinson</u>
OFFSET : _____	CASING DIA. : _____	TEMPERATURE : <u>34 °F</u>
LINE : _____	CORE SIZE : <u>4.0</u>	WEATHER : <u>Clear</u>
DEPTH : <u>16.1 ft</u>		

GROUNDWATER:  Encountered at None  At completion 4.0 ft  After -- hours  Caved in at 9.0 ft

ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6"	% RECOVERY	MOISTURE CONTENT	DRY DENSITY, pcf	POCKET PEN., tsf	UNCONF. COMP., tsf	ATTERBERG LIMITS			REMARKS
										LL	PL	PI	
		<b>Asphalt</b> 6 inches											0.0, Pavement patched.
		<b>Crushed Stone</b> 8 inches											
	2.5		SS1	4-2-1	33	20.6		0.5					
735.0	5.0	<b>Lean Clay (CL)</b> Brown, moist, very soft to soft, with sandstone fragments, (Lab No. 3)	SS2	3-2-3	56	26.2		1.25					
	5.5												
	7.5	<b>Sandstone</b> Brown, weathered	SS3	7-9-40	11	11.0							
	8.0												
730.0	10.0	<b>Shale</b> Brown, weathered (Visual)	SS4	12-16-34	100	11.7		4.5+					
	11.1	<b>Auger Refusal at 11.1 ft</b>											
	12.5								79				
725.0	15.0	<b>Limestone</b> Brown to Gray	RC1		92								
	16.1		RQD=32%										
	16.1	Bottom of Boring at 16.1 ft											
	17.5												
720.0													
20.0													

ATC LOG WITH PHOTO\_NIE\_GC00923 (NEW 2-5-2020).GPJ\_INDOT TEMPLATE.GDT 2/14/20





# Boring Log

BORING NO.: B-2  
SHEET 2 OF 2  
NORTHING : 1435740.54  
EASTING : 171405.01  
DATUM :

GEOTECHNICAL CONSULTANT : ATC Group Services LLC  
DES NO. : \_\_\_\_\_ STRUCTURE # : \_\_\_\_\_

PROJECT TYPE: Retaining Wall

## PHOTOS



Figure B-2.1  
Rock Core #1  
11.1' to 16.1'  
Recovery = 92%  
Rock Quality Designation (RQD) = 32%



# Boring Log

BORING NO.: **B-3**  
 SHEET 1 OF 2  
 NORTHING : 1435640.78  
 EASTING : 171160.12  
 DATUM : \_\_\_\_\_  
 DATE STARTED : 01-14-20  
 DATE COMPLETED : 01-14-20

GEOTECHNICAL CONSULTANT : ATC Group Services LLC  
 DES NO. : \_\_\_\_\_ STRUCTURE # : \_\_\_\_\_

PROJECT TYPE : Retaining Wall

LOCATION : Brown County State Park

COUNTY : Brown PROJECT NO.: 170GC00923

ELEVATION : <u>748.2</u>	BORING METHOD : <u>Hollow Stem Auger</u>	HAMMER : <u>Auto</u>
STATION : _____	RIG TYPE : <u>B-57 Truck</u>	DRILLER/INSP : <u>G. Lauber/E. Wilkinson</u>
OFFSET : _____	CASING DIA. : _____	TEMPERATURE : <u>36 °F</u>
LINE : _____	CORE SIZE : <u>4.0</u>	WEATHER : <u>Cloudy</u>
DEPTH : <u>11.0 ft</u>		

GROUNDWATER:  Encountered at None  At completion 3.0 ft  After -- hours  Caved in at 5.5 ft

ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6"	% RECOVERY	MOISTURE CONTENT	DRY DENSITY, pcf	POCKET PEN., tsf	UNCONF. COMP., tsf	ATTERBERG LIMITS			REMARKS
										LL	PL	PI	
		Asphalt 4 inches Crushed Stone 4 inches											0.0, Pavement patched.
	2.5	Lean Clay (CL) Brown, moist, very stiff, (Lab No. 1)	SS1	7-11-15	100	14.0		4.25					
745.0	3.0	Shale Brown, weathered (Visual)	SS2	40-50/0.3	94	11.2		4.5+					
	5.0	Auger Refusal at 6.0 ft							22				
740.0	6.0	Shale Brown to Gray	RC1 RQD=29%		96								
	10.0												
	11.0	Bottom of Boring at 11.0 ft											

ATC LOG WITH PHOTO\_N/E\_GC00923 (NEW 2-5-2020).GPJ\_INDOT TEMPLATE.GDT 2/14/20



# Boring Log

BORING NO.: B-3  
SHEET 2 OF 2  
NORTHING : 1435640.78  
EASTING : 171160.12  
DATUM :

GEOTECHNICAL CONSULTANT : ATC Group Services LLC  
DES NO. : \_\_\_\_\_ STRUCTURE # : \_\_\_\_\_

PROJECT TYPE: Retaining Wall

## PHOTOS



Figure B-3.1  
Rock Core #1  
6.0' to 11.0'  
Recovery = 96%  
Rock Quality Designation (RQD) = 29%



# Boring Log

BORING NO.: HA-1  
 SHEET 1 OF 1  
 NORTHING : 1435785.92  
 EASTING : 171550.25  
 DATUM : \_\_\_\_\_  
 DATE STARTED : 12-16-19  
 DATE COMPLETED : 12-16-19

GEOTECHNICAL CONSULTANT : ATC Group Services LLC  
 DES NO. : \_\_\_\_\_ STRUCTURE # : \_\_\_\_\_

PROJECT TYPE : Retaining Wall

LOCATION : Brown County State Park

COUNTY : Brown PROJECT NO.: 170GC00923

ELEVATION : <u>735.9</u>	BORING METHOD : <u>Hand Auger</u>	HAMMER : _____
STATION : _____	RIG TYPE : _____	DRILLER/INSP : <u>L. Shelton/E. Wilkinson</u>
OFFSET : _____	CASING DIA. : _____	TEMPERATURE : <u>30 °F</u>
LINE : _____	CORE SIZE : <u>--</u>	WEATHER : <u>Cloudy</u>
DEPTH : <u>3.8 ft</u>		

GROUNDWATER:  Encountered at None  At completion None  After -- hours  Caved in at --

ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6"	% RECOVERY	MOISTURE CONTENT	DRY DENSITY, pcf	POCKET PEN., tsf	UNCONF. COMP., tsf	ATTERBERG LIMITS			REMARKS
										LL	PL	PI	
735.0	0.5	Topsoil 6 inches	CU1			30.4				34	21	13	
2.5		Lean Clay (CL) Brown, moist, (Lab No. 3)	CU2			27.8							
		- with sandstone fragments below 3.0 ft	CU3			31.5							
	3.8	Hand Auger Refusal	CU4			23.8							
		Bottom of Boring at 3.8 ft											
5.0													
730.0													
7.5													
10.0													

ATC LOG WITH PHOTO\_NIE\_GC00923 (NEW 2-5-2020).GPJ\_INDOT TEMPLATE.GDT 2/14/20





# Boring Log

BORING NO.: HA-2  
 SHEET 1 OF 1  
 NORTHING : 1435749.29  
 EASTING : 171401.88  
 DATUM : \_\_\_\_\_  
 DATE STARTED : 12-16-19  
 DATE COMPLETED : 12-16-19

GEOTECHNICAL CONSULTANT : ATC Group Services LLC  
 DES NO. : \_\_\_\_\_ STRUCTURE # : \_\_\_\_\_

PROJECT TYPE : Retaining Wall

LOCATION : Brown County State Park

COUNTY : Brown PROJECT NO.: 170GC00923

ELEVATION : <u>734.2</u>	BORING METHOD : <u>Hand Auger</u>	HAMMER : _____
STATION : _____	RIG TYPE : _____	DRILLER/INSP : <u>L. Shelton/E. Wilkinson</u>
OFFSET : _____	CASING DIA. : _____	TEMPERATURE : <u>30 °F</u>
LINE : _____	CORE SIZE : <u>--</u>	WEATHER : <u>Cloudy</u>
DEPTH : <u>5.0 ft</u>		

GROUNDWATER:  Encountered at None  At completion None  -- After -- hours  Caved in at --

ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6"	% RECOVERY	MOISTURE CONTENT	DRY DENSITY, pcf	POCKET PEN., tsf	UNCONF. COMP., tsf	ATTERBERG LIMITS			REMARKS
										LL	PL	PI	
		<b>Topsoil 6 inches</b>											
	0.5		CU1			35.0							
		<b>Lean Clay (CL) Brown, moist, (Lab No. 3)</b>	CU2			34.6							
	2.5		CU3			28.3							
	3.0		CU4			21.1							
730.0		<b>Silt with Sand (ML) Brown, moist, (Lab No. 2)</b>	CU5			17.3							
	5.0												
		<b>Bottom of Boring at 5.0 ft</b>											
	7.5												
725.0													
	10.0												

ATC LOG WITH PHOTO\_N/E\_GC00923 (NEW 2-5-2020).GPJ\_INDOT TEMPLATE.GDT\_2/14/20



# Boring Log

BORING NO.: HA-3  
 SHEET 1 OF 1  
 NORTHING : 1435646.02  
 EASTING : 171154.09  
 DATUM : \_\_\_\_\_  
 DATE STARTED : 12-16-19  
 DATE COMPLETED : 12-16-19

GEOTECHNICAL CONSULTANT : ATC Group Services LLC  
 DES NO. : \_\_\_\_\_ STRUCTURE # : \_\_\_\_\_

PROJECT TYPE : Retaining Wall

LOCATION : Brown County State Park

COUNTY : Brown PROJECT NO.: 170GC00923

ELEVATION : <u>751.9</u>	BORING METHOD : <u>Hand Auger</u>	HAMMER : _____
STATION : _____	RIG TYPE : _____	DRILLER/INSP : <u>L. Shelton/E. Wilkinson</u>
OFFSET : _____	CASING DIA. : _____	TEMPERATURE : <u>30 °F</u>
LINE : _____	CORE SIZE : <u>--</u>	WEATHER : <u>Cloudy</u>
DEPTH : <u>4.8 ft</u>		

GROUNDWATER:  Encountered at None  At completion None  -- After -- hours  Caved in at --

ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6"	% RECOVERY	MOISTURE CONTENT	DRY DENSITY, pcf	POCKET PEN., tsf	UNCONF. COMP., tsf	ATTERBERG LIMITS			REMARKS
										LL	PL	PI	
		<b>Topsoil 6 inches</b>											
	0.5		CU1			22.2							
750.0		<b>Lean Clay (CL) Brown, moist, (Lab No. 1)</b>	CU2			26.3				30	22	8	
	2.5		CU3			22.8							
	3.0		CU4			10.4				31	23	8	
		<b>Silt with Sand (ML) Brown, moist, with sandstone fragmetns, (Lab No. 2)</b>	CU5			13.9							
	4.8												
	5.0	Hand Auger Refusal											
		Bottom of Boring at 4.8 ft											
745.0													
	7.5												
	10.0												

ATC LOG WITH PHOTO\_N/E\_GC00923 (NEW 2-5-2020).GPJ\_INDOT TEMPLATE.GDT 2/14/20



# Boring Log

BORING NO.: HA-4  
 SHEET 1 OF 1  
 NORTHING : 1435743.69  
 EASTING : 172354.57  
 DATUM : \_\_\_\_\_  
 DATE STARTED : 12-16-19  
 DATE COMPLETED : 12-16-19

GEOTECHNICAL CONSULTANT : ATC Group Services LLC  
 DES NO. : \_\_\_\_\_ STRUCTURE # : \_\_\_\_\_

PROJECT TYPE : Retaining Wall

LOCATION : Brown County State Park

COUNTY : Brown PROJECT NO.: 170GC00923

ELEVATION : <u>640.6</u>	BORING METHOD : <u>Hand Auger</u>	HAMMER : _____
STATION : _____	RIG TYPE : _____	DRILLER/INSP : <u>L. Shelton/E. Wilkinson</u>
OFFSET : _____	CASING DIA. : _____	TEMPERATURE : <u>34 °F</u>
LINE : _____	CORE SIZE : <u>--</u>	WEATHER : <u>Cloudy</u>
DEPTH : <u>1.2 ft</u>		

GROUNDWATER:  Encountered at None  At completion None  After -- hours  Caved in at --

ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6"	% RECOVERY	MOISTURE CONTENT	DRY DENSITY, pcf	POCKET PEN., tsf	UNCONF. COMP., tsf	ATTERBERG LIMITS			REMARKS
										LL	PL	PI	
640.0	0.0 - 0.3	Topsoil 4 inches											
640.0	0.3 - 1.2	Lean Clay (CL) Brown, moist, with sandstone fragments, (Lab No. 1)	CU1			24.7							
640.0	1.2 - 1.2	Hand Auger Refusal	CU2										
		Bottom of Boring at 1.2 ft											

ATC LOG WITH PHOTO\_N/E\_GC00923 (NEW 2-5-2020).GPJ\_INDOT TEMPLATE.GDT 2/14/20



# Boring Log

BORING NO.: HA-5  
 SHEET 1 OF 1  
 NORTHING : 1435723.66  
 EASTING : 172359.81  
 DATUM : \_\_\_\_\_  
 DATE STARTED : 12-16-19  
 DATE COMPLETED : 12-16-19

GEOTECHNICAL CONSULTANT : ATC Group Services LLC  
 DES NO. : \_\_\_\_\_ STRUCTURE # : \_\_\_\_\_

PROJECT TYPE : Retaining Wall

LOCATION : Brown County State Park

COUNTY : Brown PROJECT NO.: 170GC00923

ELEVATION : <u>651.3</u>	BORING METHOD : <u>Hand Auger</u>	HAMMER : _____
STATION : _____	RIG TYPE : _____	DRILLER/INSP : <u>L. Shelton/E. Wilkinson</u>
OFFSET : _____	CASING DIA. : _____	TEMPERATURE : <u>34 °F</u>
LINE : _____	CORE SIZE : <u>--</u>	WEATHER : <u>Cloudy</u>
DEPTH : <u>1.5 ft</u>		

GROUNDWATER:  Encountered at None  At completion None  -- After -- hours  Caved in at --

ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6"	% RECOVERY	MOISTURE CONTENT	DRY DENSITY, pcf	POCKET PEN., tsf	UNCONF. COMP., tsf	ATTERBERG LIMITS			REMARKS
										LL	PL	PI	
		Topsoil 4 inches											
650.0	0.3		CU1			20.8							
	1.5	Silty with Sand (ML) Brown, moist, with sandstone fragments, (Lab No. 2)	CU2										
		Hand Auger Refusal											
		Bottom of Boring at 1.5 ft											
2.5													
5.0													
645.0													
7.5													
10.0													

ATC LOG WITH PHOTO\_NIE\_GC00923 (NEW 2-5-2020).GPJ\_INDOT TEMPLATE.GDT 2/14/20





# Boring Log

BORING NO.: HA-6  
 SHEET 1 OF 1  
 NORTHING : 1435655.66  
 EASTING : 172335.23  
 DATUM : \_\_\_\_\_  
 DATE STARTED : 12-16-19  
 DATE COMPLETED : 12-16-19

GEOTECHNICAL CONSULTANT : ATC Group Services LLC  
 DES NO. : \_\_\_\_\_ STRUCTURE # : \_\_\_\_\_

PROJECT TYPE : Retaining Wall

LOCATION : Brown County State Park

COUNTY : Brown PROJECT NO.: 170GC00923

ELEVATION : <u>662.9</u>	BORING METHOD : <u>Hand Auger</u>	HAMMER : _____
STATION : _____	RIG TYPE : _____	DRILLER/INSP : <u>L. Shelton/E. Wilkinson</u>
OFFSET : _____	CASING DIA. : _____	TEMPERATURE : <u>34 °F</u>
LINE : _____	CORE SIZE : <u>--</u>	WEATHER : <u>Cloudy</u>
DEPTH : <u>2.2 ft</u>		

GROUNDWATER:  Encountered at None  At completion None  After -- hours  Caved in at --

ELEVATION	SAMPLE DEPTH	SOIL/MATERIAL DESCRIPTION	SAMPLE NUMBER	SPT per 6"	% RECOVERY	MOISTURE CONTENT	DRY DENSITY, pcf	POCKET PEN., tsf	UNCONF. COMP., tsf	ATTERBERG LIMITS			REMARKS
										LL	PL	PI	
		Topsoil 4 inches											
	0.3												
		Lean Clay (CL) Brown, moist, (Lab No. 1)	CU1			20.8					NP	NP	NP
	1.2												
		Sandy Silt (ML) Brown, moist, with sandstone fragments, (Lab No. 4)	CU2			13.9							
	2.2		CU3										
		Hand Auger Refusal at 2.2 ft.											
660.0	2.5	Bottom of Boring at 2.2 ft											
	5.0												
	7.5												
655.0													
	10.0												

ATC LOG WITH PHOTO\_NIE\_GC00923 (NEW 2-5-2020).GPJ\_INDOT TEMPLATE.GDT 2/14/20

## **APPENDIX C**

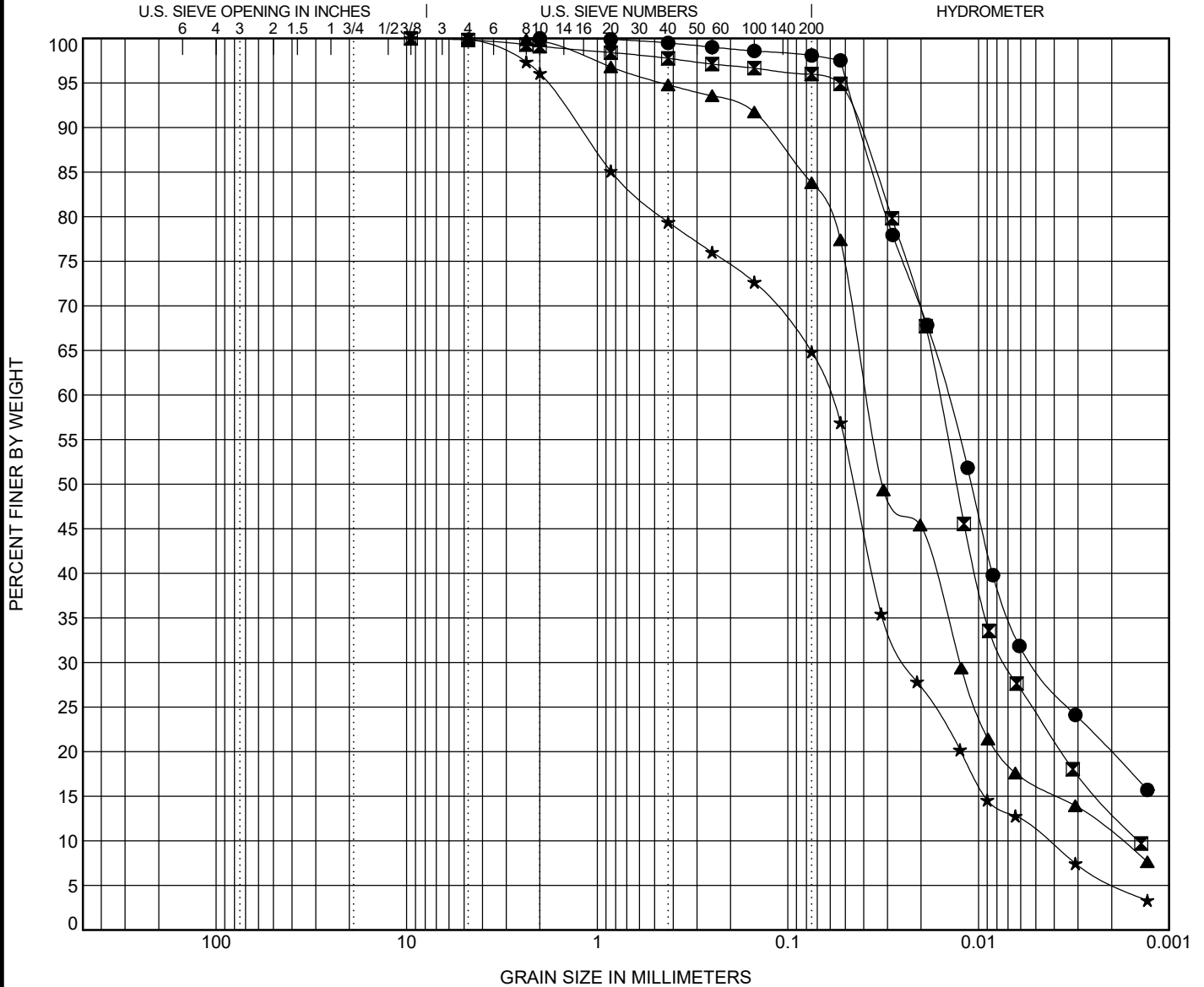
GRAIN SIZE DISTRIBUTION TEST REPORTS  
ATTERBERG LIMITS RESULTS



ATC Group Services LLC  
 7988 Centerpoint Drive, Suite 100  
 Indianapolis, Indiana 46256  
 Telephone: +1 317 849 4990  
 Fax: +1 317 849 4278

### GRAIN SIZE DISTRIBUTION

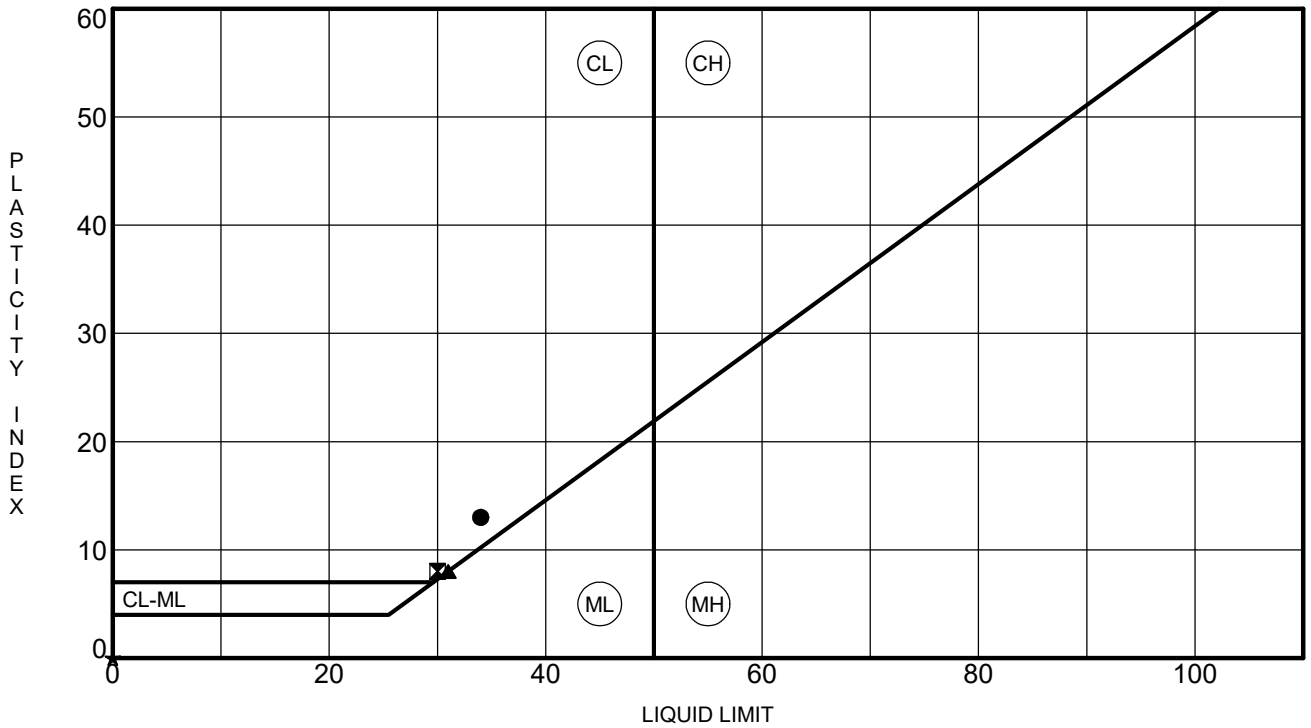
DES #: NA          Structure #:  
 Project #: 170GC00923  
 County: Brown          Route:  
 Location: Brown County State Park



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	


Specimen Identification	Classification					LL	PL	PI	Cc	Cu
● HA-1 1.0	<b>LEAN CLAY(CL)</b>					34.0	21.0	13.0		
☒ HA-3 1.0	<b>LEAN CLAY(CL)</b>					30.0	22.0	8.0	2.24	11.15
▲ HA-3 3.0	<b>SILT with SAND(ML)</b>					31.0	23.0	8.0	2.28	21.33
★ HA-6 1.0	<b>SANDY SILT(ML)</b>					NP	NP	NP	2.12	13.85

Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● HA-1 1.0	2	0.015	0.005		0.0	1.9	78.2	19.9
☒ HA-3 1.0	9.5	0.016	0.007	0.001	0.2	3.8	82.7	13.3
▲ HA-3 3.0	4.75	0.038	0.013	0.002	0.0	16.2	73.0	10.8
★ HA-6 1.0	9.5	0.061	0.024	0.004	0.1	35.1	59.5	5.4



Specimen Identification	LL	PL	PI	Fines	Classification
● HA-1	1.00	34.0	21.0	13.0	98 LEAN CLAY(CL)
☒ HA-3	1.00	30.0	22.0	8.0	96 LEAN CLAY(CL)
▲ HA-3	3.00	31.0	23.0	8.0	84 SILT with SAND(ML)
★ HA-6	1.00	NP	NP	NP	65 SANDY SILT(ML)

USCS ATTERBERG LIMITS GC00923 (NEW 2-5-2020).GPJ ATC INDOT GEOTECH.GDT 2/14/20

	<p><b>ATC Group Services LLC</b>          7988 Centerpoint Drive, Suite 100          Indianapolis, Indiana 46256          Telephone: +1 317 849 4990          Fax: +1 317 849 4278</p>	<p><b>ATTERBERG LIMITS' RESULTS</b></p>
	<p>Project: Retaining Wall          Location: Brown County State Park          Number: 170GC00923</p>	





**SECTION 01500**  
**CONSTRUCTION FACILITIES AND SITE MAINTENANCE**

**PART 1 - GENERAL**

1.01 TEMPORARY SANITARY FACILITIES

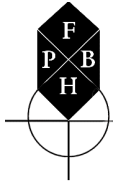
- A. The CONTRACTOR shall construct and/or maintain, in a sanitary condition, temporary sanitary facilities for his employees and also employees of the subcontractors. The CONTRACTOR shall, at completion of the Work, properly dispose of these sanitary facilities.

1.02 REQUIREMENTS OF REGULATORY AGENCIES

- A. Obtain and pay for all permits required by governing authorities that are not enclosed as part of these documents.
- B. Obtain and pay for any required temporary easements, etc. required across property (other than easements or lands furnished by OWNER).
- C. Comply with applicable codes.
- D. On a continuous basis, maintain premises free from accumulations of waste, debris, and rubbish, caused by operations.
- E. Comply with the conditions set forth in the attached permits.

1.03 TEMPORARY LIGHTING

- A. Furnish and install temporary lighting required for:
  - 1. Construction Needs
  - 2. Safe and adequate working conditions
  - 3. Public Safety
  - 4. Security lighting
  - 5. Any required temporary office and storage area lighting.



B. Service periods:

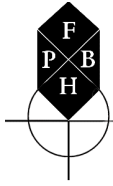
1. Safety lighting
  - a. Within construction area: All times that authorized personnel are present.
  - b. Public Areas in the vicinity of Clifty Inn at all times where work is incomplete and remains overnight.
2. CONTRACTOR shall pay for all installation, maintenance and removal costs of temporary lighting.

1.04 TEMPORARY UTILITIES

- A. The CONTRACTOR shall be totally responsible for installation, maintenance and cost of all utility service, including temporary electric, water, natural gas and telephone service or other.

1.05 MAINTENANCE OF SERVICE IN EXISTING UTILITIES

- A. Where the existing utilities must be disturbed during construction under this Contract, their operation and function shall be maintained by the CONTRACTOR to such a degree that service to customers will be interrupted for minimum time periods only. Such disturbances and any maintenance use of these lines shall constitute no cost to the OWNER. The OWNER shall be notified of interruptions in sufficient time to prepare for them.
- B. Should shutdowns in service be in excess of the time of duration agreed upon, and such excessive shutdown time be due to the Contractor's negligence, faulty Work and/or inability to perform, then and in that event, the CONTRACTOR shall be held liable to the OWNER for any and all damages that may accrue to the OWNER, by reason of such excessive shutdown periods.
- C. Digging through services with trenching machines will not be permitted. Upon damage to utility services, such services shall be repaired immediately and tested to the satisfaction of the ENGINEER. The CONTRACTOR shall notify all utility users of impending interruption of service and shall be responsible for all damage resulting from same. Payment for any disconnection and reconnection of utility services shall be included as a part of the Contractor's bid and no extra compensation will be made for same.
- D. The CONTRACTOR shall at all times maintain on hand an adequate supply of repair materials and tools with which to make repair to damaged water, gas and



sewer lines. Should the CONTRACTOR inadvertently damage existing utilities, he shall make immediate repair thereto and in no event shall he leave the site before such repair has been made and approved. Coordination with the utility line owner shall be conducted for all such work.

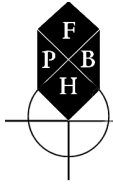
- E. As far as possible, the locations and sizes of existing mains and other utilities are indicated on the drawings; however, exact locations, pipe materials and sizes cannot be guaranteed. It shall be the responsibility of the CONTRACTOR to locate and uncover existing lines, to which new mains are to be connected, and provide all connecting fittings of the correct size and type for each connection.

#### 1.06 PROPERTY PROTECTION

- A. Care is to be exercised by the CONTRACTOR in all phases of construction, to prevent damage and/or injury to the Owner's and/or other property. Payments for the repair and restoration are limited as set forth in General Conditions.
- B. All exposed existing piping must be immediately supported to prevent damage. Prior to completion of each day's work, such piping must be adequately covered by the CONTRACTOR and approved by the OWNER'S representative.
- C. The CONTRACTOR shall avoid unnecessary injury to trees and shall remove only those authorized to be removed as detailed on the plans and otherwise by written consent of the OWNER. Fences, gates and terrain damaged or disarranged by the Contractor's forces shall be immediately restored in their original condition or better.

#### 1.07 CONSTRUCTION WARNING SIGNS

- A. If required by the work, the CONTRACTOR shall provide construction warning signs for each location where he is working. He will further provide flagmen as required and shall abide by all applicable safety rules, including size, type and placement of construction signs. All signs shall be of professional quality. SECTION 02500 provides additional information.
- B. Provide barricades, barrier fences, lanterns and other such signs and signals as may be necessary to warn of the dangers in connection with open excavation and obstructions.
- C. Provide an adequate and approved system to secure the project area at all times, especially during non-construction periods; CONTRACTOR shall be solely responsible for taking proper security measures.
- D. CONTRACTOR shall pay all costs for protection and security systems.



1.08 TEMPORARY HEATING AND VENTILATING

Not Used

1.09 TEMPORARY TELEPHONE SERVICE

- A. Furnish and install temporary telephone or cell phone service for construction needs throughout construction period.
- B. Pay costs for temporary telephone or cell phone service including installation, maintenance, and removal.
- C. Pay service costs for all telephone or cell phone service.

1.10 ACCESS ROADWAYS

- A. The CONTRACTOR shall construct all access roadways as needed during construction, and the planned access roadways for the completed project. The CONTRACTOR shall maintain access roadways continuously during the construction period.
- B. The CONTRACTOR shall maintain all existing roadways within the project site which are used for any purpose by his construction operations. The degree and frequency of maintenance shall be adequate to keep existing roadways in a condition at least equal to their condition prior to construction. Road maintenance shall include daily dust control and grading as necessary on all roads and sweeping of paved roads every other day. The CONTRACTOR shall be responsible for the repair of any damage to park road surfaces caused by their activities. These repairs shall be conducted at no additional cost to the OWNER.

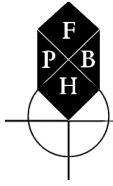
1.11 RESPONSIBILITY FOR TRENCH SETTLEMENT

- A. The CONTRACTOR shall be responsible for any settlement caused by the construction that occurs within one (1) year after the final acceptance of this Contract by the OWNER. Repair of any damage caused by settlement shall meet the approval of the OWNER.

1.12 DAMAGE TO CROPS, LIVESTOCK AND VEGETATION

- A. If applicable, the CONTRACTOR shall protect lawns, fencing, landscaping, crops, livestock and vegetation against damage or injury from construction operations at all times. Crops damaged or equipment access obtained outside of the easements provided shall be the responsibility of the CONTRACTOR.





Temporary fences shall be provided at no extra cost to the OWNER wherever necessary to keep livestock away from the construction area. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage. Damaged limbs shall be trimmed and damaged tree trunks shall be treated with wound dressing.

#### 1.13 WASTE DISPOSAL

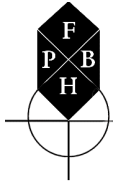
- A. The CONTRACTOR shall dispose of waste, including hazardous waste, off-site in accordance with all applicable laws and regulations. INDOT Specification 202 provides additional guidance.
- B. Broken up concrete shall not be used as riprap.

#### 1.14 CONTRACTOR STAGING AREA

- A. The CONTRACTOR and his subcontractors shall provide site offices(s), tool trailers and storage as needed by each trade during the duration of this project. Off site staging is the responsibility of the CONTRACTOR. It shall be of sufficient size to accommodate all trades involved and include room for field office(s), storage and tool trailers and materials.
- B. Limited on site storage for materials on Park property shall be coordinated between the Contractor and the OWNER. If any park areas are agreed upon and used by the contractor, then he shall be responsible for erecting and installing an eight foot tall chain link fence completely surrounding each facility. Fence shall be gated, and locked at all times except when contractor is directly within the fencing. The fence shall be removed and the area restored to a pre-construction condition upon completion of the work.
- C. Sufficient temporary stone drives, parking, etc. shall be provided to minimize mud tracking.
- D. Security of the staging area shall be the responsibility of the CONTRACTOR.
- E. Temporary utilities shall be the responsibility of the CONTRACTOR.
- F. The cost of this item shall be considered incidental to the project.

#### 1.15 MAINTENANCE OF OPERATIONS

- A. During the course of the work, Clifty Falls State Park will remain open to the public. The CONTRACTOR, through his operations, will in no manner hinder the



operation of the facility except in those instances which are approved by the OWNER. Interruptions to Park operations and traffic flow shall be scheduled in such a manner as to minimize the impact on park operations and far enough in advance to provide adequate time for planning. The duration and nature of planned interruptions shall adhere to the policy described in this section and SECTION 02500 of these specifications.

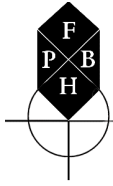
The CONTRACTOR shall endeavor to assist the staff in the maintenance of operations affected by the work. The CONTRACTOR shall in no way:

1. Permit excavation adjacent to roadways which could jeopardize the road's stability.
2. Allow his operation to restrict the free movement of park employees across the park roadways in such a manner as to interrupt operations except in approved instances whereby road closures are required.
3. Construct structures, temporary, or permanent, which place park personnel or park patrons at risk, or prevent personnel from completing job functions.
4. Introduce any substance into the park's ditches and streams which are not authorized in the applicable permits.
5. Cause any unscheduled interruption of park traffic flow or access to the Clifty Inn.
6. Place excavated, stored, or purchased materials on or near park roadways when these roadways remain open to traffic in such a manner as to present a hazard to motorists.
7. Remove park fencing, leaving an unclosed boundary unattended for any period of time except in instances approved by the OWNER.

Excavate, pour concrete or flowable fill, provide crane operations, truck hauling operations or headwall or wingwall or other plan related work installation in such a manner as to endanger the integrity of any structure or road that is to remain in place.

#### 1.16 SCHEDULED ROAD CLOSURES

- A. Due to the nature of the work to be completed, interruptions to park operations are expected. The CONTRACTOR shall submit all intended road closures as part of their submitted Construction Schedule as noted in SECTION 01300 -



SUBMITTALS. All changes to this schedule and unanticipated closures shall follow the approval procedures as noted in SECTION 02500.

- A. The CONTRACTOR shall complete all preparations for the scheduled work prior to any road or facility closures, including preparation of contingency plans, scheduling of additional workers to facilitate completion of the work, procurement of all equipment, tools, and supplies required to complete the work etc. If in the opinion of the ENGINEER and Park staff, the CONTRACTOR is insufficiently prepared for a roadway closure or the Park operations, the scheduled closure will be postponed and rescheduled.

#### 1.17 FLOW DIVERSIONS

- A. During the demolition and construction phases it may become necessary to provide diversions of flow around or through various structures. Equipment, material and labor required to perform these diversions shall be considered incidental to the Contract. All Permit conditions will be followed for such diversions of flow. The means of accomplishing any flow diversions shall be submitted to the ENGINEER for approval prior to the diversion being affected. The CONTRACTOR shall follow the SUBMITTAL procedures as noted in SECTION 01300.

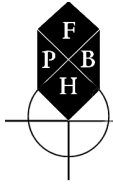
## **PART 2 - PRODUCTS**

Not used.

## **PART 3 - EXECUTION**

#### 3.01 SEQUENCE OF CONSTRUCTION

- A. Prior to beginning construction, the CONTRACTOR shall develop and submit a phasing plan to the ENGINEER for review and approval. The approved phasing plan shall allow for continuous use of the park as much as possible. The plan shall use the Maintenance of Traffic Plan (Plan Sheet MOT-1) as a basis for this plan. The Phase numbers listed on MOT-1 are for identification purposes only and are not intended to restrict the CONTRACTOR to conducting road closures in the numerical sequence noted. The CONTRACTOR shall provide the sequence of the phased closures of the Maintenance of Traffic which will best allow him to close the work sites in a manner that will best allow him to complete the planned work in an efficient and timely manner.



### 3.02 SUGGESTED PROJECT PHASING SCHEDULE

The intent of this section is to provide a suggested phasing schedule for constructing the proposed improvements. This is not a mandatory schedule and is not intended to include all activities, labor, equipment, temporary facilities, etc, necessary to construct the project. It is the Contractors responsibility to provide a schedule that they feel is necessary to complete the proposed improvements and provide the access to park facilities within the contract allotted time with park access and closure restrictions taken into account in the Construction Schedule.

**-END OF SECTION-**



**SECTION 01535**  
**PROTECTION OF INSTALLED WORK**

**PART 1 - GENERAL**

**1.01 DESCRIPTION**

Related Requirements Specified Elsewhere:

Project Closeout: Section 01700.

Cleaning for Specific Products or Work: Specification Section for that work.

On a continuous basis, maintain premises free from accumulations of waste, debris, and rubbish, caused by operations.

At completion of Work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all sight-exposed surfaces; leave Project clean and ready for occupancy.

**1.02 SAFETY REQUIREMENTS**

Hazards Control:

Store volatile wastes in covered metal containers, and remove from premises daily.

Prevent accumulation of wastes which create hazardous conditions.

Provide adequate ventilation during use of volatile or noxious substances.

Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.

Do not burn or bury rubbish and waste materials on Project site without written permission from the Owner.

Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.

Do not dispose of wastes into streams or waterways.





1.01 REQUIREMENTS INCLUDED

- A. Protection for products, including owner-provided products, after installation.

1.02 RELATED REQUIREMENTS

- A. Division 1 - General Requirements.

**PART 2 - PRODUCTS**

Not used.

**PART 3 - EXECUTION**

3.01 PROTECTION AFTER INSTALLATION

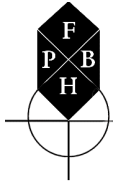
- A. Protect installed products and control traffic in immediate area to prevent damage from subsequent operations.
- B. Provide protective coverings at all structures and headwalls as required.
- C. Restrict traffic of any kind across planted and landscaped areas. Water and maintain as needed.
- D. Protect installed products and control traffic in immediate area to prevent damage from subsequent operations.
- E. Restrict traffic of any kind across structures involving any mortar and concrete work to ensure adequate curing of the work. The CONTRACTOR shall ensure that all concrete box structures which have had work done to the ceiling of the interior of the structure shall have no traffic placed on them for a minimum period of three (3) days. See SECTION 02500 for additional guidelines.

3.01 DURING CONSTRUCTION

Execute cleaning to ensure that building, grounds and public properties are maintained free from accumulations of waste materials and rubbish.

Wet down dry materials and rubbish to lay dust and prevent blowing dust.

At reasonable intervals during progress of Work, clean site and public properties, and dispose of waste of waste materials, debris and rubbish.



Provide on-site containers for collection of waste materials, debris and rubbish.

Remove waste materials, debris and rubbish from site and legally dispose of at public or private dumping areas off Owner's property.

Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.

Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted areas or interfere with the operations of the park except as allowed by these plans and specifications .

The Contractor shall thoroughly clean all materials and equipment installed.

### 3.02 FINAL CLEANING

Employ experienced workmen, or professional cleaners, for final cleaning.

In preparation for substantial completion, conduct final inspection of sight-exposed interior and exterior surface, and of box culverts.

Remove all debris and silt from structures.

Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.

Broom clean paved surfaces; rake clean other surfaces of grounds.

Maintain cleaning until Project, or portion thereof, is occupied by Owner.

The Contractor shall restore or replace existing property or structures as promptly and practicable as work progresses.

**-END OF SECTION-**



**SECTION 01700**  
**PROJECT CLOSEOUT**

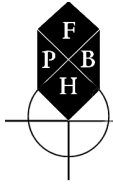
**PART 1 - GENERAL**

1.01 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

- A. All Contract documents, and GENERAL CONDITIONS.
- B. Final Cleaning of structures.
- C. Contractor's Record Documents.

1.02 SUBSTANTIAL COMPLETION

- A. Contractor:
  - 1. Submit written certification to Engineer that project is substantially complete.
  - 2. Submit list of major items to be completed or corrected.
- B. Engineer will make an inspection within seven days after receipt of certification.
- C. Should Engineer consider that work is substantially complete:
  - 1. Contractor shall prepare, and submit to Engineer, a list of items to be completed or corrected, as determined by the inspection.
  - 2. Engineer will prepare and issue a Certificate of Substantial Completion, containing:
    - a. Date of Substantial Completion.
    - b. Contractor's list of items to be completed or corrected verified and amended by Engineer.
    - c. The time within which Contractor shall complete or correct work of listed items.
    - d. Time and date Owner will assume possession of work or designated portion thereof.



- e. Responsibilities of Owner and Contractor for:
    - (1) Insurance
    - (2) Utilities
    - (3) Operation of mechanical, electrical and other systems.
    - (4) Maintenance and cleaning.
    - (5) Security
  - f. Signatures of:
    - (1) Engineer.
    - (2) Contractor.
    - (3) Owner.
  - 3. Owner occupancy (if required) of Project or Designated Portion of Project:
    - a. Contractor shall:
      - (1) Obtain certificate of occupancy.
      - (2) Perform final cleaning in accordance with this Section.
    - b. Owner will occupy Project, under provisions stated in Certificate of Substantial Completion.
  - 4. Contractor: Complete work listed for completion or correction, within designated time.
- D. Should Engineer consider that work is not substantially complete:
- 1. He shall notify Contractor, in writing, stating reasons.
  - 2. Contractor: Complete work, and send second written notice to Engineer, certifying that Project or designated portion of Project is substantially complete.
  - 3. Engineer will re-inspect work.



1.03 FINAL INSPECTION

- A. Contractor shall submit written certification that:
  - 1. Contract Documents have been reviewed.
  - 2. Project has been inspected for compliance with Contract Documents.
  - 3. Work has been completed in accordance with Contract documents.
  - 4. Equipment and systems have been tested in presence of Owner's Representative and are operational.
  - 5. Project is completed and ready for final inspection.
- B. Engineer will make final inspection within seven (7) days after receipt of certification.
- C. Should Engineer consider that work is finally complete in accordance with requirements of Contract Documents, he shall request Contractor to make Project Close-out submittals.
- D. Should Engineer consider that work is not finally complete:
  - 1. He shall notify Contractor, in writing, stating reasons.
  - 2. Contractor shall take immediate steps to remedy the stated deficiencies, and send second written notice to Engineer certifying that work is complete.
  - 3. Engineer will re-inspect work.

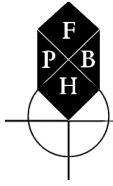
1.04 FINAL CLEANING UP

- A. The work will not be considered as completed and final payment made until all final cleaning has been completed by the Contractor in a manner satisfactory to the Engineer. See Section 3.02 for detailed requirements.

1.05 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: To requirements of particular technical specifications.





B. Guarantees, Warranties and Bonds: To requirements of particular technical specifications.

1.06 INSTRUCTION

Instruct Owner's personnel in operation and maintenance of all systems, mechanical, electrical and other equipment.

1.07 FINAL APPLICATION FOR PAYMENT

Contractor shall submit final applications in accordance with requirements of General Conditions.

1.08 FINAL CERTIFICATE FOR PAYMENT

Engineer will issue final certificate in accordance with provisions of General Conditions.

Should final completion be materially delayed through no fault of Contractor, Engineer may issue a Semi-Final Certificate for Payment.

## **PART 2 - PRODUCTS**

2.01 MATERIALS

Use only biodegradable cleaning materials recommended by manufacturer of surface to be cleaned.

Use biodegradable cleaning materials only on surfaces that are recommended by the cleaning material manufacturer.

2.02 SAFETY REQUIREMENTS

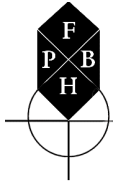
Hazards Control:

Store volatile wastes in covered metal containers, and remove from premises daily.

Prevent accumulation of wastes which create hazardous conditions.

Provide adequate ventilation during use of volatile or noxious substances.

Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.



Do not burn or bury rubbish and waste materials on Project site without written permission from the OWNER and only after obtaining any required permits to conduct such work.

Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains, ditches, or anywhere else on the park grounds.

Do not dispose of wastes into streams or waterways.

### **PART 3 - EXECUTION**

#### **3.01 DURING CONSTRUCTION**

Execute cleaning to ensure that structures, grounds and park properties are maintained free from accumulations of waste materials and rubbish.

Wet down dry materials and rubbish to lay dust and prevent blowing dust.

At reasonable intervals during progress of Work, clean site and public properties, and dispose of waste of waste materials, debris and rubbish.

Provide on-site containers for collection of waste materials, debris and rubbish.

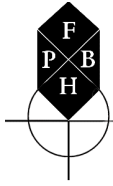
Remove waste materials, debris and rubbish from site and legally dispose of at public or private dumping areas off of the OWNER's property.

Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.

Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall into any waterways or ditch lines.

The CONTRACTOR shall thoroughly clean all materials and equipment installed.

Provide necessary containment to prevent the inadvertent discharge of any materials into ditchlines or any other waterways. All spills regardless of location shall also be properly contained and cleaned up in accordance with all local, state and federal requirements.



### 3.02 FINAL CLEANING

At completion of Work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all sight-exposed surfaces; leave Project clean and ready for occupancy.

Employ experienced workmen, or professional cleaners, for final cleaning.

In preparation for substantial use of the structures, conduct final inspection of sight-exposed interior and exterior surface, and of any accessible structure interiors.

Remove grease, dust, dirt, stains, labels, fingerprints, leaves, woody debris and other foreign materials, from sight-exposed interior and exterior surfaces, and of concealed spaces.

Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.

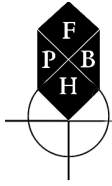
Broom clean paved surfaces; rake clean other surfaces of grounds.

Remove wheel tracked or other dirt caused by hauling and construction operations from all paved roadway surfaces.

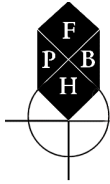
Maintain cleaning until Project, or portion thereof, is accepted by the OWNER.

The CONTRACTOR shall restore or replace existing property or structures as promptly and practicable as work progresses.

**-END OF SECTION-**



**DIVISION 2**  
**SITE WORK**



**SECTION 02060**  
**MINOR DEMOLITION AND SITE CLEARING**

**PART 1 - GENERAL**

1.01 SECTION INCLUDES

- A. Removal of designated construction.
- B. Disposal of materials.
- C. Refer to items scheduled at end of section.

1.02 SUBMITTALS FOR REVIEW

- A. Demolition Removal Schedule: Describe demolition removal procedures, identify items being removed, and schedule demolition and related new construction.

1.03 REGULATORY REQUIREMENTS

- A. Conform to applicable federal, state and local codes for demolition work.
- B. Obtain required permits from authorities.
- C. Conform to procedures applicable when hazardous or contaminated materials are discovered.
- D. Comply with INDOT Specification 202. Note that broken up and removed concrete is not to be used as riprap on this project.

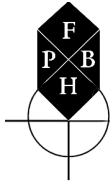
1.04 SCHEDULING

- A. Schedule Work to coincide with new construction.
- B. Describe demolition removal procedures and schedule.

1.05 PROJECT CONDITIONS

- A. Cease operations immediately if structure or equipment appears to be in danger and notify Engineer. Do not resume operation until directed.





## **PART 2 - PRODUCTS**

Not Used

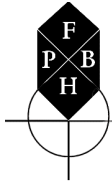
## **PART 3 - EXECUTION**

### **3.01 PREPARATION**

- A. Provide, erect, and maintain temporary barriers around structures.
- B. Protect existing materials and equipment which are not to be demolished.
- C. Provide bracing and shoring as needed.
- D. Notify affected utility companies before starting work and comply with their requirements.
- E. The contractor shall provide orange snow fence or suitable barrier construction fence around work areas to protect park patrons. This fence shall surround all possible hazardous areas which are created as a result of construction activities. Similarly all construction work areas and construction equipment shall be protected overnight with a suitable fencing.

### **3.02 DEMOLITION**

- A. Demolish in an orderly and careful manner. Protect existing supporting structural members that are to remain in place.
- B. Remove demolished materials from site except where specifically noted otherwise. Do not burn or bury materials on site.
- C. Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition.
- D. Remove temporary Work.
- E. Provide temporary supports and/or bracing as required.



### 3.03 TREE REMOVALS

- A. Comply with the date limitations listed in the environmental calendar restriction for tree clearing.
- B. All Tree clearing shall be in accordance with INDOT specification 201.
- C. Stumps shall remain except where located in excavation areas.

**-END OF SECTION-**



## SECTION 02070 GEOGRID

### **PART 1 - GENERAL**

#### 1.01 WORK INCLUDED

- A. Furnish all materials and labor as needed to install geogrid material for retaining walls and between stone layers as shown on the plans.

#### 1.02 RELATED WORK

Section 2160 – EARTHWORK

Section 02255 – CRUSHED STONE, RIPRAP & STRUCTURE BACKFILL

#### 1.03 SUBMITTALS

- A. Submit Geogrids to be used on the project in accordance with 01300.
  - 1. Certification: The contractor shall provide to the Engineer a certificate stating the name of the manufacturer, product name, style number, chemical composition of the filaments or yarns and other pertinent information to fully describe the geosynthetic. The Certification shall state that the furnished geosynthetic meets MARV requirements of the specification as evaluated under the Manufacturer's quality control program. The Certification shall be attested to by a person having legal authority to bind the Manufacturer.
  - 2. Quality Standards: The contractor shall provide to the Engineer the manufacturer's Quality Control Plan along with their current A2LA, GAI-LAP, and ISO 9001:2000 certificates.

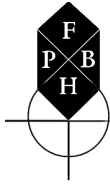
#### 1.04 DEFINITIONS

- A. Minimum Average Roll Value (MARV): Property value calculated as typical minus two standard deviations. Statistically, it yields a 97.7 percent degree of confidence that any sample taken during quality assurance testing will exceed value reported.

#### 1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications:

- 1. The geogrid manufacturer shall have all of the following credentials:



a. Geosynthetic Accreditation Institute (GAI)- Laboratory Accreditation Program (LAP)

b. American Association for Laboratory Accreditation (A2LA) c. ISO 9001:2000 Quality Management System

B. The geogrid manufacturer shall have a GAI-LAP accredited laboratory at the location of production capable of performing the ASTM tests as outlined in the specification.

#### 1.06 DELIVERY, STORAGE, AND HANDLING

A. Geosynthetic labeling, shipment, and storage shall follow ASTM D 4873. Product labels shall clearly show the manufacturer or supplier name, style name, and roll number.

B. Each geosynthetic roll shall be wrapped with a material that will protect the geosynthetic from damage due to shipment, water, sunlight, and contaminants.

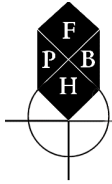
C. During storage, geosynthetic rolls shall be elevated off the ground and adequately covered to protect them from the following: site construction damage, precipitation, extended ultraviolet radiation including sunlight, chemicals that are strong acids or strong bases, flames including welding sparks, excess temperatures, and any other environmental conditions that may damage the physical property values of the geosynthetic.

## **PART 2 – PRODUCTS**

### 2.01 MATERIALS

A. Geogrid fabric shall be Mirafi Miragrid 5XT by TenCate Geosynthetics or approved equal.

B. Geogrid shall be composed of high molecular weight, high tenacity polyester multifilament yarns woven in tension and finished with a PVC coating. Geogrid is inert to biological degradation and resistant to naturally encountered chemicals, alkalis, and acids. Geogrid is used as soil reinforcement in MSE structures such as; segmental retaining walls, precast modular block walls, wire faced walls, geosynthetic wrapped faced walls and steepened slopes.



- C. The geosynthetic shall be manufactured with fibers consisting of long-chain synthetic polymers composed of at least 95 percent by weight of polyolefins or polyesters. They shall form a stable network such that the filaments or yarns retain their dimensional stability relative to each other, including selvage.

## **PART 3 – EXECUTION**

### **3.1 PREPARATION**

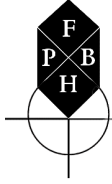
- A. Foundation soil shall be excavated to the line and grades as shown on the construction drawings or as directed by the Engineer. Over-excavated areas shall be filled with compacted backfill material as per project specifications or as directed by the Engineer.

### **3.2 INSTALLATION**

- A. Geosynthetic shall be laid at the proper elevation and orientation as shown on the construction drawings or as directed by the Engineer. Correct orientation of the geosynthetic shall be verified by Contractor.
- B. Geosynthetic may be temporarily secured in-place with staples, pins, sand bags or backfill as required by fill properties, fill placement procedure or weather condition, or as directed by the Engineer.
- C. Primary geosynthetic may not be overlapped or connected mechanically to form splices in the primary strength direction. Single panel lengths are required in the primary strength direction. No overlapping is required between adjacent rolls unless specified by the Engineer.
- D. Backfill material shall be placed in lifts and compacted as directed under project specifications. Backfill shall be placed, spread and compacted in such a manner as to minimize the development of wrinkles in and/or movement of the geosynthetic. A minimum fill thickness of 150 mm (6 in) is required prior to the operation of tracked vehicles over the geosynthetic.
- E. Turning of tracked vehicles should be kept to minimum to prevent tracks from displacing the fill and damaging the geosynthetic. Rubber tired equipment may pass over the geosynthetic reinforcement at low speeds, less than 16 km/hr (10 mph). Sudden braking and sharp turns shall be avoided. Any geosynthetic damaged during installation shall be replaced by the Contractor at no additional cost to the Owner.

**-END OF SECTION -**





## SECTION 02160 EARTHWORK

### **PART 1 - GENERAL**

#### 1.01 WORK INCLUDED

- A. Preparation of subgrade for pavement patching is included as part of this work.
- B. Backfilling around structures and wingwalls within the construction limits is included as part of this work.
- C. Install safety measures required to protect personnel in accordance with OSHA requirements.
- D. This work shall also include all Rock Excavation. Blasting is NOT allowed as a means of removing rock.

#### 1.02 DEFINITIONS

- A. Excavation consists of removal of all material encountered to subgrade elevations and subsequent disposal or reuse of materials removed.
- B. Backfill shall consist of material used to replace excavated material after the facilities have been constructed as shown in the plan details or as directed by the Engineer. Previously excavated material may be used as Borrow for fill if approved by the Engineer.

#### 1.03 RELATED WORK

Section 02060 – DEMOLITION AND SITE CLEARING

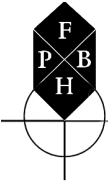
Section 02170 - EROSION AND SEDIMENT CONTROL

Section 02610 - UNDERGROUND PIPING

Section 02923 - LANDSCAPE GRADING

#### 1.04 QUALITY ASSURANCE

- A. The Contractor shall perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.



## 1.05 SUBMITTALS

- A. None Required

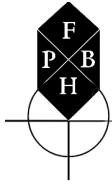
## 1.06 SITE CONDITIONS

- 1. Site Information:
  - 1. Data on indicated subsurface conditions is not available.
  - 2. Additional test borings and other exploratory operations may be made by Contractor at no cost to Owner.
- 2. Existing Utilities: Prior to commencement of work, the Contractor shall locate existing underground utilities in areas of the work. If utilities are to remain in place, provide adequate means of protection during earthwork operations. In addition to Holey Moley, the Contractor shall coordinate with the Park Manager concerning the location of underground park owned utilities that may not be listed with Holey Moley.
- 3. Protection of Persons and Property:
  - 1. Barricade open excavations occurring as part of this work and post with warning lights. Comply with Traffic Control requirements of these plans
    - a. Operate warning lights as recommended by authorities having jurisdiction.
    - b. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
  - 2. The Contractor shall place Orange snow fence or an equal type of construction fencing around all work areas to prevent park patron access to the construction area and construction equipment.

## **PART 2 - PRODUCTS**

### 2.01 SOIL MATERIALS

- A. Definitions:
  - 1. Subbase material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, crushed slag, natural or crushed sand meeting INDOT requirements.
  - 2. Drainage fill: INDOT Structure Backfill #3.

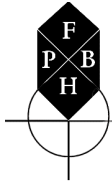


3. Backfill and fill materials: Satisfactory soil materials free of debris, waste, frozen materials, vegetable, and other deleterious matter.
4. Trench Encasement fill shall consist of silty clay, free of organic material, with a plasticity index of 10. Clay with a liquid limit in excess of 60 shall not be used.

## **PART 3 - EXECUTION**

### **3.01 EXCAVATION**

- A. Excavation includes excavation to subgrade elevations including excavation of earth, rock, bricks, wood, cinders, and other debris. All excavation of materials shall be included in the lump sum portion of the work and will be UNCLASSIFIED. NO ADDITIONAL PAYMENT WILL BE MADE REGARDLESS OF TYPE OF MATERIAL ENCOUNTERED. Rock is expected to be encountered on this project.
- B. Exploratory Excavation and Potholing:
  1. Provide potholing if utility crossing is suspected.
- C. Differing Site Conditions:
  1. The Contractor shall promptly, and before such conditions are disturbed, notify the Owner in writing of subsurface or latent physical conditions at the site differing materially from those indicated in this contract, or unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this contract. The Owner shall promptly investigate the conditions, and if he finds that such conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the work under this contract, whether or not changed as a result of such conditions, an equitable adjustment shall be made and the contract modified in writing accordingly.
  2. No claim of the Contractor under this clause shall be allowed unless the Contractor has given the notice required in (a) above; provided, however, the time prescribed therefore may be extended by the Owner.



3. No claim by the Contractor for an equitable adjustment hereunder shall be allowed if asserted after final payment under this contract.

D. Additional Excavation:

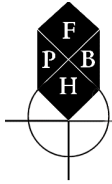
1. When excavation has reached required subgrade elevations, notify the Engineer who will make an inspection of conditions. The surface of the excavated area shall be “proofrolled” with a loaded truck or other heavy construction equipment.
  - a. If unsuitable bearing materials are encountered at required subgrade elevations, carry excavations deeper and replace excavated material as directed in writing by the Engineer.
  - b. Removal of unsuitable material and its replacement as directed will be included in the cost of the project.

E. Stability of Excavations:

1. Slope sides of excavations to comply with federal, state and local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated.
2. Maintain sides and slopes of excavations in safe condition until completion of backfilling.

F. Shoring and Bracing:

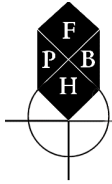
1. Where required due to the proximity of structures to deep excavations, sheet piling shall be installed. Sheet piling design is the responsibility of the Contractor.
2. Provide materials for shoring and bracing, such as sheet piling, uprights, stringers, and cross-braces, in good serviceable condition.
  - a. Establish requirements for trench shoring and bracing to comply with federal, state and local codes and authorities having jurisdiction.
  - b. Maintain shoring and bracing in excavations regardless of time period excavations will be open. Carry down shoring and bracing as excavation progresses.
  - c. Provide permanent steel piling or pressure creosoted timber sheet piling wherever subsequent removal of sheet piling might permit lateral movement of soil under adjacent structures. Cut off tops as required and leave permanently in place. In the event the Owner



directs the Contractor to leave shoring materials in place, the Owner will reimburse the Contractor for the reasonable cost of leaving such materials in place.

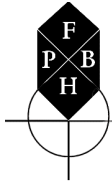
- G. Dewatering: Dewater trench and excavation as necessary to install structures. This section not used.
- H. Material Storage:
1. The Contractor is responsible for obtaining their own stockpile area. Any area of the park used shall gain the approval of the Park Property Manager prior to its use. Stockpile satisfactory excavated material until required for backfill of fill. Place, grade, and shape stockpiles for proper drainage. Dispose of excess soil material and waste materials as herein specified. The Contractor is responsible for submitting and obtaining a Rule 5 permit if required for borrow pits and stockpile areas.
- I. Excavation for Structures:
1. Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10 feet and extending a sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of services, other construction, and for inspection.
  2. In excavating for footings and foundations, take care not to disturb bottom of excavation. All loose material shall be removed from the excavation just before concrete reinforcement is placed. Trim bottoms to required lines and grades to leave solid base to receive other work.
  3. Protruding rock formations, that would interfere with uniform footing bearing shall be removed such that the structure will bear upon uniform engineered fill at least 18 inches thick, unless rock is encountered for the entire footing.
  4. No slab shall bear directly upon rock. All excavations shall extend to a depth that allows a minimum of a 6" crushed stone base under a slab.
- J. Trench Excavation:
1. The Contractor shall include in his bid all trenching and backfill necessary for installation of all culverts and structures as planned and specified. Trenching shall include clearing and grubbing of all trash, weeds, briars, trees and stumps encountered in the trenching. The Contractor shall dispose of such material at no extra cost to the Owner. Trenching also included such items as railroad, street, road, sidewalk, pipe, and small creek crossings; cutting, moving or repairing damage to





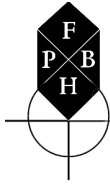
fences, posts, gates, and other surface structures regardless of whether shown on the Drawings.

2. All existing facilities shall be protected from damage while structures are being constructed and backfilled, and from damage due to settlement of the backfill.
3. In the event any existing structure is damaged, repair and restoration shall be made at once and backfill shall not be replaced until this is done. Restoration and repair shall be such that the damaged structure is equal to or better than its original condition and can serve its purpose as completely as before. All such restoration and repair shall be done without extra cost to the Owner.
4. Trenches must be dug to lines and grades shown on the Drawings. Hand trenching may be required in areas where machine trenching would result in undue damage to existing structures and facilities.
5. Excavation shall be open trenches, except where otherwise shown on the Drawings, for tunneling, boring, or jacking under structures, railroad, sidewalks and roads or other facilities.
6. Sheeting and shoring of trenches shall be provided at the expense of the Contractor where necessary to protect life, property and the new or existing structures from damage or to maintain maximum permissible trench widths at top of pipe and according to OSHA requirements. All necessary materials, including, but not limited to, sheeting, sheet piling, trench jacks, braces, shores and stringers, shall be used to hold trench walls. Sheeting and shoring may be withdrawn as the trenches are being backfilled, after backfill has been tamped over top of the pipe at least 18-inches provided the trench depth at this point is less than that depth for which OSHA requires shoring. If the removal of shoring, braces or other safety measures before backfill is completed will endanger adjacent structures, such as buildings, pipelines, street paving, and sidewalks, then the sheeting and shoring shall be left in place until such danger has passed, and then pulled if practical. Voids caused by sheeting withdrawal shall be backfilled and tamped. If not withdrawn, sheeting shall be cut off at least 18-inches below final surface grade, so there is no obstruction at the ground level. In the event the Owner directs the Contractor to leave shoring materials in place, the Owner will reimburse the Contractor for the reasonable cost of leaving such materials in place.
7. Where subgrade of trench has insufficient stability to support the pipeline and hold it to its original grade, the Engineer may order stabilization by various means. Exclusive of dewatering normally



required for construction, and instability caused by neglect of the Contractor, the payment necessary for stabilization shall be negotiated.

8. The location of the culverts, structures and their appurtenances as shown are those intended for the final construction. However, conditions may present themselves before construction of any line is started that would indicate desirable changes in location. The Owner reserves the right to make reasonable changes in line and structure locations without extra cost, except as may be determined by extra units of materials and construction actually involved. The Owner is under no obligation to locate pipelines, so they may be excavated by machine.
9. Tunneling may be used at the Contractor's option as an alternate to open-cut trenching, at no extra cost to the Owner. Pipe materials used shall be submitted to the Engineer for approval. The annular space between plates and excavation shall be either permanently placed pea gravel or sand, pumped grout (3 parts sand and 1 part Portland cement by volume) or other suitably installed materials approved by the Engineer. A minimum of 3 grout holes shall be provided in each 8 feet of tunnel length. Grout shall be injected in the lower holes first, proceeding upward as the void is filled. Plugs shall be installed after each hole is filled and grout stops shall be provided behind plates as necessary to ensure complete filling of the void. In tunneling under buildings, the Contractor will be responsible for all damage resulting from his operations and methods of excavation and backfilling. Boring may also be used at the Contractor's option as an alternate to tunneling or open-cut trenching, at no extra cost to the Owner.
10. The Contractor shall only have sufficient trench open ahead of the pipe laying work as necessary for the prosecution of the work, that day. In no case shall the Contractor have more than 500 feet of trench open ahead of the pipe laying work. Dig trenches to the uniform width required for the particular item to be installed, sufficiently wide to provide ample working room. Provide a minimum of clearance on both sides of pipe or conduit as shown on the plans.
  - a. Excavate trenches to depth indicated or required. Carry depth of trenches for piping to establish indicated flow lines and invert elevations. Beyond building perimeter, keep bottoms of trenches sufficiently below finish grade to avoid freeze-ups.
  - b. Where rock is encountered, carry excavation further below the required elevation and backfill as shown on the plan details.
  - c. For pipes or conduit 3-inches or less in nominal size and for flat-bottomed, multiple-duct conduit units, excavate to subbase depth



indicated or, if not indicated, then to 4-inches below bottom of work to be supported.

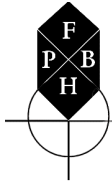
- d. For pipes or conduit 6-inches or larger in nominal size, tanks, and other mechanical/electrical work indicated to receive subbase, excavate to subbase depth indicated or, if not otherwise indicated, to 6-inches below bottom of work to be supported.
- e. Except as otherwise indicated, excavate for exterior water bearing piping (potable water, non-potable water, steam, condensate, drainage) so top of piping is no less than 4 feet (42 inches) below finish grade.
- f. Grade bottoms of trenches as indicated, notching under pipe bells to provide solid bearing for entire body of pipe.
- g. Encase piping with concrete (full encasement) where trench excavations pass within 18 inches of column or wall footings and which are carried below bottom of such footings, or which pass under wall footings. Place concrete to level of bottom of adjacent footing(s).
- h. Encase potable piping with concrete (full encasement) per the plan details where trench excavations pass within 8 feet of a storm drainage structure or inlet.
- i. Concrete is specified in Division 3.
- j. Do not backfill trenches until tests and inspections have been made and backfilling authorized by the Engineer. Use care in backfilling to avoid damage or displacement of pipe systems.
- k. For water main piping or conduit less than 2 feet 6 inches below surface of roadways, furnish and install steel casing pipe, minimum wall thickness of  $\frac{1}{4}$ ", of sufficient diameter to carry the pipe or conduit to at least two feet beyond outside edge of pavement.

K. Cold Weather Protection:

1. Protect excavation bottoms against freezing when atmospheric temperature is less than 35°F(1°C).

3.02 COMPACTION

A. General:



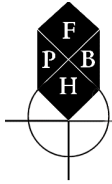
1. Control soil compaction during construction providing minimum percentage of density specified for each area classification indicated below.
  - a. Percentage of maximum density requirements: Compact soil to not less than the following percentages of maximum density for soils which exhibit a well-defined moisture density relationship (cohesive soils) determined in accordance with ASTM D698; and not less than the following percentages of relative density, determined in accordance with ASTM D4253 and D4254, for soils which will not exhibit a well-defined moisture-density relationship (cohesionless soils).
  - b. Compact top 12-inches of subgrade and each layer of backfill or fill

<b>PLACEMENT OF BACKFILL OR FILL MATERIAL</b>			
<b>Location</b>	<b>Minimum Compaction</b>	<b>Maximum Lift Thickness (Loose) (in.)</b>	<b>Moisture Content Relative To Optimum Moisture</b>
Subgrade for Footings	100%	8	-2% to +2%
Subgrade for Floor Slabs Steps & Embankments	98%	8	-2% to +2%
Subgrade for Pavements and Walkways	95%	6"	-2% to +2%
Backfill for Walls & Piping	95%	6	-2% to +2%
Landscape Areas	90%	12	-2% to +2%
Note: Minimum compaction refers to percent of Maximum Dry Density as Determined by ASTM D-698.			

material in accordance with the following schedule.

**A. Moisture Control:**

1. Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface or subgrade, or layer of soil material, to prevent free water appearing on surface during or subsequent to compaction operations.



2. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
3. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing, or pulverizing until moisture content is reduced to the optimum moisture for compaction.

### 3.03 BACKFILL AND FILL

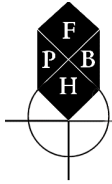
#### A. General:

1. All material to be used as backfill material used in the Slide area shall be tested and approved by the Geotechnical Engineer prior to backfilling excavations.
2. With the exception of the organic debris, existing fill material, topsoil, and backfill materials, which are specifically designated per the plan details could be used as on site soil fill or backfill material, provided the moisture content of the soil is acceptable.
3. Place acceptable soil material in layers to required subgrade elevations, for each area classification listed below. Backfill material shall be no larger than the specified depth of the layer to be placed and/or compacted.
  - a. In excavations, use satisfactory excavated or borrow material.
  - b. Under grassed areas, use satisfactory excavated or borrow material.
  - c. Under walks and pavements, use structure backfill as detailed on the plans.
  - d. Under steps, use subbase material.
  - e. Under building slabs, use drainage fill material for a minimum depth of 6-inches.

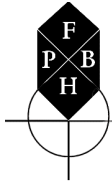
#### B. Backfill excavation as promptly as work permits, but not until completion of the following:

1. Acceptance of construction below finish grade including, where applicable, dampproofing, waterproofing, and perimeter insulation.
2. Inspection, testing, approval, and recording locations of underground utilities.
3. Removal of concrete formwork.



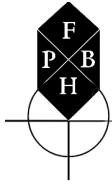


4. Removal of shoring and bracing, and backfilling of voids with satisfactory materials. Cut off temporary sheet piling driven below bottom of structures and remove in manner to prevent settlement of the structure or utilities, or leave in place if required.
  5. Removal of trash and debris.
  6. Permanent or temporary horizontal bracing is in place on horizontally supported walls.
- C. Ground Surface Preparation:
1. Strip the site as discussed in paragraph 3.01. Plow, strip or break up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface.
  2. When existing ground surface has a density less than that specified under “Compaction” for particular area classification, break up ground surface, pulverize, bring moisture condition to optimum moisture content, and compact to required depth and percentage of maximum density.
- D. Placement and Compaction:
1. Place backfill and fill materials in layers as indicated in paragraph 3.02 A.1.b. for material compacted by heavy compaction equipment, and not more than 4-inches in loose depth for material compacted by hand-operated tampers. Crushed stone shall be installed in accordance with Section 02255.
    - a. Before compaction, add moisture or aerate each layer as necessary to provide optimum moisture content. Compact each layer to required percentage of maximum dry density or relative dry density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
    - b. Place backfill and fill materials evenly adjacent to structures, piping, or conduit to required elevations. Take care to prevent wedging action of backfill against structures or displacement of piping or conduit by carrying material uniformly around structure, piping, or conduit to approximately same elevation in each lift.
- E. Backfilling Trenches:
1. Any special requirements of the Indiana Department of Transportation in regard to backfilling will take precedence over the following general Specifications. If questions arise as to conflicts between INDOT



requirements and these specifications then the Contractor shall address the question in writing to the Engineer for clarification.

2. Backfilling shall be accomplished as soon as practical after pipe has been laid and jointing and alignment approved. Packing of crushed rock between joints shall be uniform and shall progress as the pipe laying progresses. This is in order to avoid danger of misalignment from slides, flooding or other causes. The Engineer shall be given a maximum of 24 hours for inspection before backfilling.
3. The backfill over the pipe shall be in accordance with the standard details shown on the Drawings for bedding and backfilling pipe.
4. In case maximum permissible trench widths (as designated by the pipe manufacturer or the plan details, whichever is less) are exceeded, the Contractor shall furnish crushed rock backfill to a minimum of 12-inches over the top of pipe at no extra cost to the Owner.
5. After a minimum of 12" of initial backfill over the pipe crown the foregoing cover requirements over top of the pipe have been met, and in areas where full depth structure backfill is not required over the pipe, rock may be used in the backfill in pieces no larger than 8-inches in any dimension and to an extent not greater than one-half the backfill materials used. If additional earth is required for backfilling, it must be obtained and placed by the Contractor. Filling with rock and earth shall proceed simultaneously, such that no voids are left in the rock. After cover requirements over top of pipe have been met, backfilling may be employed without tamping, provided caution is used in quantity per dump and uniformity of level of backfilling. Surplus material shall be uniformly ridged over trench and excess rock hauled away, with no rock over 1-1/2-inch diameter in the top 6-inches. Ridged backfill shall be confined to the width of the trench and no higher than needed for replacement of settlement of backfill.
6. In the case of street, highway, railroad, sidewalk and driveway crossings; or within any roadway paving; or about manholes, valve and meter boxes; the backfill must be mechanically tamped in not over 6 inch layers, measured loose. Alternate method of compacting backfill shall be used, if refill material is in large hard lumps (crushed rock excepted) which cannot be consolidated without leaving voids.
7. Where traffic on streets, driveways, railroads, sidewalks and highways requires temporary surfacing, backfilling shall be terminated 4-inches below original ground level and 4-inches to 6-inches of No. 53 dense graded aggregate shall be placed on the trench. Backfill shall be maintained easily passable to traffic at original ground level, until acceptance of project or replacement of paving or sidewalks.



8. The Contractor shall protect all sewer, gas, electric, telephone, water, and drain pipes or conduits from damage while pipelines are being constructed and backfilled, and from danger due to settlement of trench backfill.
9. No extra payment shall be made for backfilling of any kind, except as specified hereinbefore. Backfilling shall be included as part of the lump sum bid. No extra payment will be made to the Contractor for supplying outside materials for backfill.
10. On completion of the project, all backfill shall be dressed; holes filled; and surplus material hauled away. All permanent walks, street paving, roadway, etc., shall be restored and seeding and sodding performed as required.

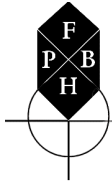
### 3.04 GRADING

#### A. General:

1. Uniformly grade areas within limits of grading under this section, including adjacent transition areas. Smooth finished surface within specified tolerances, compact with uniform levels or slopes between points where elevations are indicated, or between such points and existing grades.

#### B. Grading Outside Building Lines:

1. All materials used for backfill around structures shall be of a quality acceptable to the Engineer and shall be free from large or frozen lumps, wood and other extraneous material. All spaces excavated and not occupied by footings, foundations, walls or other permanent work shall be refilled with earth up to the surface of the surrounding ground, unless otherwise specified, with sufficient allowance for settlement. In making the fills and terraces around the structures, the fill shall be placed in layers not exceeding 12-inches in depth and shall be kept smooth as the work progresses. Each layer of the fill shall be rolled with an approved type roller and/or be compacted. When it is not practicable to compact sections of the fill immediately adjacent to buildings or structures by rolling, then such sections shall be thoroughly compacted by means of mechanical tamping or hand tamping as may be required by the conditions encountered. All fills shall be placed so as to load structures symmetrically.
2. As set out hereinbefore, rough grading shall be held below finished grade and then the topsoil which has been stockpiled shall be evenly spread over the surface. The grading shall be brought to the levels



shown on the Drawings. Final dressing shall be accomplished by hand work or machine work, or a combination of these methods as may be necessary to produce a uniform and smooth finish to all parts of the regrade. The surface shall be free from clods greater than 2-inches in diameter. Excavated rock may be placed in the fills, but it shall be thoroughly covered. Rock placed in fills shall no be closer than 12-inches from finished grade.

3. Grade areas adjacent to building lines to drain away from structures and to prevent ponding.

- a. Finish surfaces free from irregular surface changes, and as follows:

- 1) Lawn or unpaved areas: Finish areas to receive top soil to within not more than 0.10 ft. above or below required subgrade elevation.
- 2) Walks: Shape surface of areas under walks to line, grade, and cross-section, with finish surface not more than 0.0 inch above or 1.0 inch below required subgrade elevation.
- 3) Pavements: Shape surface of areas under pavement to line, grade, and cross-section, with finish surface not more than 1.0 in. above or 1 in. below required subgrade elevation.

- C. Grading Surface of Fill Under Building Slabs:

1. Grade smooth and even, free of voids, compacted as specified, and to required elevation. Provide final grades within a tolerance of 1.0 in. above or 1 in. below required subgrade elevation when tested with a 10 ft. straightedge.

- D. Compaction:

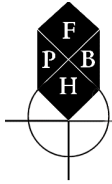
1. After grading, compact subgrade surfaces to the depth and indicated percentage of maximum or standard proctor density for each area classification.

### 3.05 PAVEMENT SUBBASE COURSE

- A. If unsuitable subbase soils are encountered, the Contractor shall consult the Engineer for direction.

### 3.06 BUILDING SLAB ENGINEERED FILL

- A. General:



1. Engineered fill consists of placement of crushed stone, size and type as shown on the Drawings, in layers of indicated thickness, over subgrade surface to support concrete building slabs.

B. Placing:

1. Place fill material on prepared subgrade in layers of uniform thickness, conforming to indicated cross-section and thickness. Maintain optimum moisture content for compacting material during placement operations.
2. When a compacted course is shown to be 6-inches or less, place material in a single layer. When shown to be more than 6-inches thick, place material in equal layers, except no single layer shall be more than 6-inches or less than 3-inches in thickness when compacted.

3.07 FIELD QUALITY CONTROL

A. Quality Control Testing During Construction:

1. Allow the Engineer to inspect and report to the Engineer or findings and approve subgrades and fill layers before further construction work is performed. Perform field density tests in accordance with ASTM D 1556 (sand cone method), ASTM D 2167 (rubber balloon method), or ASTM D 2992 (nuclear density method), as applicable and at a frequency necessary to be reasonable assured that adequate compaction is achieved.
- B. If in the opinion of the Engineer, based on testing service reports and inspection, subgrade or fills which have been placed are below specified density, provide additional compaction and testing at no additional expense to the Owner.

3.08 MAINTENANCE

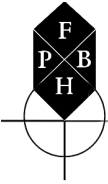
A. Protection of Graded Areas:

1. Protect newly graded areas from traffic and erosion. Keep free of trash and debris. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.

B. Reconditioning Compacted Areas:

1. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape, and compact to required density prior to further construction.





C. Settling:

1. Where settling is measurable or observable at excavated areas during general project warranty period, remove surface (pavement, lawn or other finish), add backfill material, compact, and replace surface treatment. Restore appearance, quality, and condition of surface or finish to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

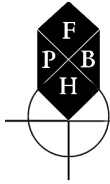
3.09 DISPOSAL OF EXCESS NONORGANIC SOIL AND ROCK

A. General:

1. All excess excavated material shall become the property of the Contractor and shall be disposed of by him outside the project limits. It is the Contractor's responsibility to locate a suitable waste area off-site, re-vegetate it after use, obtain necessary permits for use of the waste area and be in compliance with applicable laws and regulations.

B. Placement:

1. The distribution and gradation of material throughout the fill shall be such that the fill will be free from lenses, pockets, streaks or layers of material differing substantially in texture or gradation from the surrounding material. The combined excavation and placing operations shall be such that the materials when compacted in fill will be blended sufficiently to secure the best practicable degree of compaction and stability.
2. Successive loads of material shall be placed on the fill so as to produce the best practicable distribution of the material.
3. The material shall not be dumped into final position but shall be distributed by blading or dozing in a manner that will ensure proper placement in the embankment so that voids, pockets and bridging will not occur.
4. No fills shall be placed upon a frozen surface, nor shall snow, ice or frozen materials be incorporated in the fill.



C. Spreading and Compacting:

1. The material shall be spread in uncompacted lifts with thickness as required in paragraph 3.02 A.1b. of this Section, depending on the amount of earth, over the entire length and width of the specified area. The material shall then be compacted by a minimum of 6 passes of a smooth drum vibratory roller. The roller shall have a total static weight of not less than 20,000 pounds. The diameter of the drum shall be between 5.0 and 5.5 feet and the width between 6.0 and 6.5 feet. The frequency of vibration during operation shall be between 1,200 and 1,500 vibrations per minute and the dynamic force at 1,400 vibrations per minute shall not be less than 16,000 pounds. Rollers shall be operated at speeds not to exceed 1.5 miles per hour.

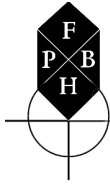
D. Earth Cover:

1. The material shall be placed and spread in accordance with this Specification.

3.10 LINEAR DITCH GRADING

- A. Linear Ditch grading shall be accomplished as noted on the plans. The existing or proposed surface grade shall be graded with suitable equipment as needed to obtain proper drainage into or from the plan structure or ditch area as shown on the plans.
- B. Upon final drainage grade being obtained, all soil disturbed and left bare as a result of these grading operations and within the drainage way formed by the grading operations shall be covered with Erosion Control Blanket and reseeded and restored according to these specifications. The width of the Erosion Control Blanket across the drainage way shall be determined in the field based on the final ditch cross section required for a given drainage way. However, in no case shall the width be less than 3 feet wide across the cross section of the graded drainage way.

**-END OF SECTION -**

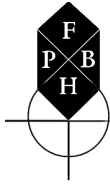


**SECTION 02170**  
**EROSION AND SEDIMENT CONTROL**

**PART 1 - GENERAL**

1.01 WORK INCLUDED

- A. Furnish all labor, materials and equipment required for erecting, maintaining and removing temporary erosion and sediment controls Contractor is responsible for obtaining any permits needed for offsite stockpiling, borrow pits and waste disposal in compliance with all requirements of 327 IAC 15-3-2 and 327 IAC 15-5-5 (Rule 5) or other local, state or federal requirements.
- B. Temporary erosion controls include, but are not limited to mulching, riprap check dams, seeding, watering, and reseeding on all disturbed surfaces including waste area surfaces and stockpile and borrow area surfaces; scheduling work to minimize erosion and providing interceptor ditches at those locations which will ensure that erosion during construction will be either eliminated or maintained within acceptable limits.
- C. Temporary sediment controls include, but are not limited to silt fences, staked strawbale diversions and appurtenances at the foot of sloped surfaces which will ensure that sedimentation pollution will be either eliminated or maintained within acceptable limits.
- D. Contractor is responsible for providing and maintaining effective temporary erosion and sediment control measures during construction or until final controls become effective.
- E. The erosion and sediment controls shown on the Drawings and specified herein are intended to provide the minimum measure necessary to prevent sediment runoff into storm water runoff. IDEM and/or the local Soil and Water District may request additional erosion control measures be installed for the project if the measures shown within the plans and specifications are determined to be insufficient. Contractor shall be responsible for providing and installing any additional measures needed to adequately prevent storm water runoff from the site and erosion of constructed or disturbed slopes as determined by IDEM and/or the local Soil and Water District at no additional cost to the Owner.



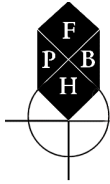
## **PART 2 - PRODUCTS**

- A. Mulch and fertilizer shall be as specified in Sections 02936.
- B. Erosion control blanket shall be excelsior blankets consisting of 100% weed free straw matrix stitched to a single or double net. The blanket shall be rated for channel applications for slopes up to 1.5:1 and shall be for extended term (15 to 24 months) use. The blanket shall be 100% biodegradable natural netting that is wildlife friendly. Photodegradable netting is NOT acceptable.
- C. Temporary silt fence fabric shall be in accordance with INDOT Specification 205.
- D. Concrete Washouts shall be provided per the plan details.

## **PART 3- EXECUTION**

### 3.01 GENERAL

- A. Erosion control practices shall be adequate to prevent erosion of disturbed and regraded areas.
- B. Earthwork procedures shall be as specified in Section 02160.
- C. Silt fences shall be located and staked as shown on the Drawings and/or as designated by the Engineer.
- D. The Contractor is solely responsible for and shall provide silt fence, check dams, erosion control blanket concrete washouts and other adequate erosion control protection as required.
- E. The Contractor shall maintain concrete washouts for washing of any concrete pouring or other equipment. Concrete shall not be washed into drainage or waterways or other area other than the washouts themselves.
- F. The Contractor shall install all materials in accordance with the manufacturer's directives.
- G. The Contractor shall provide Erosion Control blanket on all areas disturbed and on constructed slopes where the final slope is equal to or steeper than 3:1.



### 3.02 TEMPORARY SEEDING

- A. This item shall consist of seeding a temporary cover of grass, or grass and small grain, on areas disturbed on the construction site which will not be redisturbed within a 14-day period. All disturbed grass areas which will remain undisturbed for this 14 day period shall receive temporary seeding. Temporary stockpiles shall also be temporarily seeded if left undisturbed for 14 days or more.
- B. The seed mixtures to be used for temporary cover will be governed by the seeding specifications listed in Section 02936. The mixture of seeding shall be as follows:

<u>Scientific Name</u>	<u>Common Name</u>	<u>Ounces/Acre</u>
Avena sativa	Common Oat	360.00
Lolium multiflorum	Annual Rye	100.00
	<b>Total</b>	<b>460.00:</b>

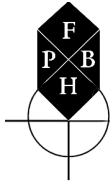
1. Lime will not be required for temporary seeding.
2. Fertilize at the rate of 400 pounds per acre of 10/10/10 fertilizer, or equivalent, broadcast uniformly on the area to be seeded.
3. All seed shall be broadcast evenly over the area to be seeded and cultipacked or otherwise pressed into the soil. Seed and fertilizer may be mixed together and applied after the seed has been prepared.
4. Mulch for temporary seeding is required.
5. Water and maintain until seeding growth is well established for temporary protection.

### 3.03 MAINTENANCE OF CONTROLS AND PERFORMANCE

- A. Erosion and sedimentation controls shall be inspected weekly and after significant rain storms. Replace silt fencing which is damaged, filter stone which is dislodged, erosion control blanket which is damaged, and make other necessary repairs.
- B. Should any of the temporary erosion and sediment control measures employed by the Contractor fail to produce results consistent with normal and acceptable standards of the industry, the Contractor shall immediately take whatever steps are necessary to correct the deficiency at his own expense.
- C. Remove all temporary erosion and sediment controls as final landscaping and grading is performed.

**-END OF SECTION -**





**SECTION 02255**  
**CRUSHED STONE & STRUCTURE BACKFILL**

**PART 1 - GENERAL**

1.01 SCOPE OF WORK

- A. Furnish and install crushed stone and structure backfill for miscellaneous uses as shown on the Drawings, and as called for in the Specifications.
- B. Sizes, types, and quality of crushed stone and structure backfill are specified in this Section and as noted in the plan details, but its use for replacement of unsuitable material, pavement base, and similar uses is specified in detail elsewhere in the Specifications. The Engineer may order the use of crushed stone for purposes other than those specified in other Sections, if, in his opinion, such use is advisable. Payment for same will be subject to negotiation.

**PART 2 - PRODUCTS**

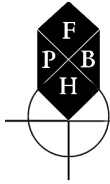
2.01 MATERIALS

- A. Aggregate: When referred to in these Specifications, compacted aggregate shall be Compacted Aggregate # 8, #9, #11 or # 53 of the specific size as required by the plans and plan details. Aggregate gradation shall be in

Sieve Sizes	COARSE AGGREGATE SIZES (PERCENT PASSING)									
	COARSE GRADED								DENSE GRADED	
	2	5	8	9	11	12	43 <sup>(1)</sup>	91	53 <sup>(1)</sup>	73 <sup>(1)</sup>
4 in. (100 mm)										
3 1/2 in. (90 mm)										
2 1/2 in. (63 mm)	100									
2 in. (50 mm)	80-100									
1 1/2 in. (37.5 mm)		100					100		100	
1 in. (25 mm)	0-25	85-98	100				70-90	100	80-100	100
3/4 in. (19 mm)	0-10	60-85	75-95	100			50-70		70-90	90-100
1/2 in. (12.5 mm)	0-7	30-60	40-70	60-85	100	100	35-50		55-80	60-90
3/8 in. (9.5 mm)		15-45	20-50	30-60	75-95	95-100				
No. 4 (4.75 mm)		0-15	0-15	0-15	10-30	50-80	20-40		35-60	35-60
No. 8 (2.36 mm)		0-10	0-10	0-10	0-10	0-35	15-35		25-50	
No. 30 (600 µm)						0-4	5-20		12-30	12-30
No. 200 (75 µm) <sup>(2)</sup>							0-6.0		5.0-10.0 <sup>(4)</sup>	5.0-12.0
Decant (PCC) <sup>(3)</sup>		0-1.5	0-1.5	0-1.5	0-1.5	0-1.5		0-1.5		
Decant (Non-PCC)	0-2.5	0-2.5	0-3.0	0-2.5	0-2.5	0-2.0		0-2.5		

Notes: 1. The liquid limit shall not exceed 25 (35 if slag) and the plasticity index shall not exceed 5. The liquid limit shall be determined in accordance with AASHTO T 89 and the plasticity index in accordance with AASHTO T 90.  
 2. Includes the total amount passing the No. 200 (75 µm) sieve as determined by AASHTO T 11 and T 27.  
 3. Decant may be 0-2.5 for stone and slag.  
 4. When slag is used for separation layers as defined in 302.01, the total amount passing the No. 200 (75 µm) sieve shall be 10.0 to 12.0.

accordance with the following gradation chart.



- All aggregate and crushed stone under paved surfaces or within 5 feet of paved surfaces shall be compacted to 95% standard proctor. All aggregate in non paved areas shall be compacted to a minimum of 90% standard proctor. The procedure for determining maximum densities for compaction control shall be in accordance with AASHTO T 99. The size and type of stone to be used shall be as shown on the plan details.
- B. Structure Backfill: Structure Backfill shall be INDOT Structure Backfill Type Type 3 which shall be a material of an acceptable quality, free from large and frozen lumps, wood, or other extraneous matter. It shall consist of crushed stone aggregate or ACBF structure backfill that meets INDOT Specification 904.05, except No. 30, No. 4, and 2 in. nominal size aggregate which shall not be used. Alternatively, Structure Backfill Type 2 may be non-removable or removable flowable backfill in accordance with INDOT Specification 213.
  - C. Riprap: Riprap shall meet INDOT specification 904.04 of the type listed in the plans.

### **PART 3 - EXECUTION**

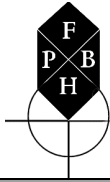
#### **3.01 INSTALLATION**

- A. Crushed stone shall be placed and compacted in accordance with INDOT Specification 211 and related specifications.
- B. Riprap shall be installed in accordance with INDOT specification 616. Riprap used for erosion control measures may be reused on the project as needed.
- C. Structure backfill shall be installed in accordance with INDOT specification 211 and 715 as applicable.
- D. Crushed stone, structure backfill and riprap shall be placed in those areas as shown on the Drawings.
- E. Structure backfill used shall not be open graded nor allow stormwater to run through the material.

#### **3.02 BROKEN CONCRETE RESTRICTION**

- A. Broken Concrete shall NOT be used as riprap.

**-END OF SECTION -**



## SECTION 02500 PARK UTILITY & TRAFFIC COORDINATION

### **PART 1 - GENERAL**

#### 1.01 SCOPE OF WORK

- A. Provide coordination with existing utility companies and the Park, which have facilities within the existing project limits of the project.
- B. Determine existing utility, size and type at potential crossings of the proposed construction with the existing utilities .
- C. Provide Traffic Control for the constructions sites and coordinate with the Park Manager as to the time of work, road closures and lane restrictions.

### **PART 2 - PRODUCTS**

#### 2.01 MATERIALS

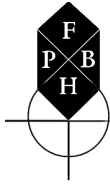
- A. Provide equipment necessary to coordinate, excavate and/or pothole existing utility crossings as needed to determine potential conflicts.
- B. Provide traffic control signage and traffic control devices in accordance with INDOT Specifications Section 801 and related material referenced specifications as referenced in 801.
  - a. Type C Construction signs as noted in the MOT plan sheets shall have the lettering FONTS and colors equal to standard R11-3 series signs.

### **PART 3 - EXECUTION**

#### 3.01 EXECUTION

##### A. UTILITIES

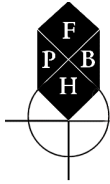
- a. The Contractor shall coordinate with existing utilities and the Park Manager prior to any excavation near, exploratory excavation or potholing of their facilities. The Contractor shall pothole or exploratory excavate potential utility crossings to determine the extent of conflicts prior to ordering any materials.



- b. The Contractor shall comply with Indiana law and shall also call Indiana Underground Plant Protection Services (Holey Moley) prior to conducting any excavation or other underground related work.
- c. Existing utility line locations as noted on the plans are based on the best data available.
- d. All crossing utilities shall be field verified for clearances with construction prior to the start of digging operations and prior to ordering any materials which could be affected such as manholes, inlets, etc. Conflicts should be immediately noted to the Engineer in writing. Utility conflicts during construction will be the responsibility of the Contractor to correct.
- e. The Contractor shall provide a minimum of 5 business days notice to any utility companies prior to excavation which is expected to uncover any given utility.

#### B. MAINTENANCE OF TRAFFIC

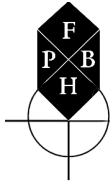
- a. The Contractor shall fully coordinate with the State Park Property Manager for all work to be conducted. The Contractor shall ensure that all traffic restrictions and road closures are coordinated with the Property Manager prior to putting any traffic control measures in place.
- b. The Contractor shall ensure that all work is scheduled so that NO work or road closures or obstructions occur during the following days:
  - i. Easter
  - ii. Mother's Day
  - iii. Memorial Day Weekend (Friday thru Monday)
  - iv. July 3<sup>rd</sup> through 5<sup>th</sup> (July 4<sup>th</sup> holiday)
  - v. Labor Day Weekend (Friday thru Monday)
  - vi. Deer Reduction Hunt days
  - vii. Thanksgiving Day Weekend (Thursday thru Monday)
  - viii. Christmas Eve and Christmas Day
  - ix. New Year's Eve and New Year's Day



- c. The Contractor shall verify the actual dates of these events for the construction year required and shall include this information in their overall submitted construction schedule. Prior to the start of work the Contractor shall also confirm with the Park Manager that no additional dates have been added to this calendar during the actual year that the work is to be constructed.
- C. During the days listed above the Contractor shall ensure that all construction equipment and materials have been removed from the construction sites, and that all open trenches have been backfilled and that the constructions sites are free of other hazardous conditions and materials.
- D. The Contractor shall always ensure that either the North or West entrance (and all roadways connecting these gates) maintain access to the main campground and pool area throughout construction. The campgrounds and pool shall be accessible by at least one of these routes.
- E. The Contractor shall ensure that all contractor and subcontractor personnel shall comply with the posted speed limits within the park.
- F. The North entrance (covered bridge) has weight and width restrictions. The Contractor shall ensure that all construction traffic, loads and materials enter and exit only through the West entrance. .

**-END OF SECTION**





## SECTION 02502 PAVEMENT PATCHING

### PART 1 -- GENERAL

#### A.01 SCOPE OF WORK

- A. This work shall consist of provide HMA patching for the installation of new structures under the existing pavement, providing patching where designated in the plans, and providing patching caused by damage during and caused by the construction activities of the projects.

#### 1.02 DEFINITIONS

- A. HMA Types (A, B, etc.) and other terms used follow the convention for the type of pavement in accordance with the INDOT 2012 Specifications, Section 402.

#### 1.03 RELATED WORK

Section 02160 – EARTHWORK  
Section 02255 – CRUSHED STONE AND STRUCTURE BACKFILL  
Section 02070 – GEOGRID  
Section 02060 – MINOR DEMOLITION & SITE CLEARING

#### 1.04 QUALITY ASSURANCE

- A. The Contractor shall perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

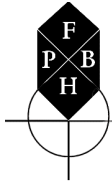
#### 1.05 SUBMITTALS

- A. The Contractor shall submit the Design Mix Formula for the HMA layers in accordance with Section 01300.

### PART 2 -- PRODUCTS

#### 2.1 MATERIALS

- A. All asphalt and aggregates used in the asphalt shall be in accordance with HMA, TYPE A in accordance with INDOT Specification 402 and related specifications.



- B. Compacted Aggregate #53s shall be in accordance with INDOT Specification 904.
- C. Tack Coat shall be in accordance with INDOT Specification 406.

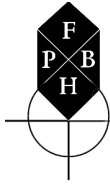
### **PART 3 -- EXECUTION**

#### **3.1 PREPARATION**

- A. Verify that all necessary subgrade preparation is completed. Remove all loose materials from area of compacted base. Do not do work when paving might be harmed by rain, snow, or low temperatures.
- B. After grading and preparation of subgrade, scarify and sprinkle area to be paved and compact to hard, smooth surface of 93% compaction.
- C. Apply weed killer according to manufacturer's instructions.
- D. Securely install headers and stakes to define boundaries and paving pattern on Drawings at correct height for specified paving thickness.
- E. Add a new base course over aggregate temporary construction roads before adding finish paving.

#### **3.2 APPLICATION**

- A. Record dates and times of placement, interruptions, tests, completion, and finish work.
- B. Uniformly apply base course materials of correct thickness. Compact subbase to 95%.
- C. Apply HMA, Aggregates and Tack Coat in accordance with the INDOT Specifications and as shown on the plan details.
- D. Apply only approved bituminous material mix and verify that bituminous material has been tested and certified at the plant.
- E. Keep delivered and applied bituminous mix temperatures under control. Cover asphalt with tarp to maintain required temperature until unloaded.



- F. Spread material in the most direct manner to minimize handling. Spread in one layer if finish paving is 3" or less. Fit and shape paving closely around catch basins, manholes, etc.

### 3.3 ROLLING AND TOLERANCES

- A. Properly slope paving surface to drain. Roll out irregularities such as humps or dips. Operate rollers only where soil has been compacted. Do not allow rollers to damage curbs or adjacent paving. After spreading, roll until surface is hard and smooth to finish elevations shown on Drawings or to match existing road profiles if elevations not shown. Roll in multiple directions until no roller marks are visible. Smoothness tolerance: 1/8" in 6'.
- B. Confirm final bituminous paving thickness at randomly selected locations. Compacted thickness within tolerance of minus 0.0" to plus 0.5". Tolerance limit 3/8" in 10' maximum deviation from grade elevations shown on Drawings. Variation from true elevation may be 1/2" or less.

### 3.4 COMPLETION, TESTING, REPAIR AND CLEAN UP

- A. Redo, repair, and recompact the work as required to meet specified standards. Remove spillover material, and clean adjacent pavements of spills. Repair any damage to adjacent areas.
- B. Before sealing, flood test pavement in presence of Engineer. Thoroughly flood paved area with water and if water ponds to depth of more than 1/8" in 6', fill and correct to provide drainage. Smooth the edges of all corrected work until repairs are invisible.

### 3.5 REPAIR OF DAMAGED PAVEMENT CAUSED BY CONSTRUCTION

- A. The Contractor shall be solely responsible for the repair of any damage caused to the park's pavement due to construction activities. This shall include, but not be limited to damage caused to areas not listed as requiring construction per the plans and pavement that is damaged due to the passage of construction equipment, haulers, vehicles, etc.

**END OF SECTION**



## **SECTION 02605 DRAINAGE STRUCTURES**

### **PART 1 - GENERAL**

#### **1.01 WORK INCLUDED**

- A. This work shall consist of setting new inlets in place as shown on the plans and all related incidental work to connect the inlets to new or existing structures.

#### **1.02 RELATED WORK**

Section 02060 – MINOR DEMOLITION & SITE CLEARING

Section 02170 - EROSION AND SEDIMENT CONTROL

Section 02610 – UNDERGROUND PIPING

Section 02160 - EARTHWORK

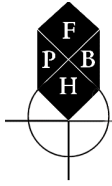
#### **1.03 SUBMITTALS**

- A. The Contractor shall submit shop drawings for proposed inlet structures including all inlet and outlet connection with planned inverts and all castings and proposed final top of casting elevation.
- B. Submittals shall be in accordance with SECTION 01300.

### **PART 2 - PRODUCTS**

#### **2.01 MATERIALS**

- A. All inlets, castings, concrete and all other materials used for the installation of precast concrete drainage inlets shall be in accordance with INDOT Specification 720 and all applicable referenced specifications.

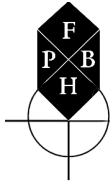


## **PART 3 - EXECUTION**

### **3.01 INSTALLATION**

- A. The Contractor shall use precast inlets. A layer of structure backfill of minimum thickness of 4 in. (100 mm) shall be used under each unit for ease in positioning. If holes are formed or field cut in precast inlets to receive the pipe structures, the pipes shall be connected directly to the precast unit, by means of a Class A concrete collar of a minimum longitudinal and radial thickness of 6 in. (150 mm). Holes formed or cut in the wrong place shall be plugged satisfactorily with a Class A concrete mixture.
- B. Excavation shall be to the established bottom of the foundations to allow for structure backfill bedding as noted above. If soft or yielding spots are encountered at this Elevation, they shall be removed, backfilled with suitable material, and tamped into place. If rock is encountered at the bottom elevation, the excavation shall be carried down to allow for minimum thickness of 6 in. for the structure backfill base that shall be tamped to the required elevation.
- C. Frames for castings shall be set in full mortar beds and secured as shown on the plans or as otherwise approved. The mortar shall be composed of 1 part cement to 2 parts No. 23 fine aggregate, by volume. Castings shall be set to the finished pavement elevation or the top of casting grade as listed on the plans so that subsequent adjustments are not necessary.
- D. Inlet and outlet pipes shall extend through walls a sufficient distance to allow for connections on the outside and concrete or mortar carefully placed around them to prevent leakage around their outlet surfaces. Unless otherwise shown, the inside ends shall be flush with the inside walls. The pipe shall be of the same size and kind as that with which it connects on the outside.
- E. Where castings are adjacent to or are surrounded by cement concrete construction, each casting shall be entirely separated from the concrete by a preformed joint filler not less than 3/8 in. (10 mm) thick. The preformed expansion joint material shall be in accordance with INDOT Specification 906.01.
- F. Grates shall be placed with the maximum dimension of the rectangular opening parallel to the direction of flow. The surface of the grate shall be flush with the top edge of the frame, wingwall, and headwall. The frame shall





- be galvanized and anchored into concrete. The frame shall be factory assembled. All joints shall be fully welded.
- G. If the completed structure is partially or completely under or at its nearest point is within 5 ft (1.5 m) of pavement, sidewalks, curbs, gutters, or similar miscellaneous existing or proposed structures, the excavated space not occupied by the newly completed structure shall be filled to an elevation that is no higher than 12 inches below the grade of the adjacent pavement surface with Compacted Aggregate #53s. If the completed structure is not located as set out above, the backfill shall be with approved material which, when compacted, shall meet the required subgrade density.
- H. Material excavated for the structure shall, if suitable, be utilized as backfill. If, in excess for that purpose, the excess shall be used in embankment where locations are available or otherwise disposed of as directed. When finally accepted, all structures shall be free from any accumulation of silt, debris, or other foreign matter.
- I. Grade and location adjustments to precast inlets and catch basins caused by unforeseen conditions shall be handled as if the units were being cast in place. All additional adjustments required due to pre-casting will be provided at no additional cost to the owner.
- J. Erosion Control Inlet protection shall be provided at all inlet structures.

**-END OF SECTION -**



## SECTION 02610 UNDERGROUND PIPING

### **PART 1 - GENERAL**

#### 1.01 WORK INCLUDED

- A. Furnishing pipe and appurtenances for culvert installation.
- B. Furnishing miscellaneous appurtenances.
- C. Installation.

#### 1.02 GENERAL REQUIREMENTS

- A. All products included in this Section shall conform to the requirements of the standard specifications referenced herein.
- B. Pipe size and material shall be as shown on the Drawings.
- C. The underground piping shall be installed as shown on the Drawings.

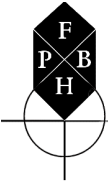
#### 1.03 RELATED SECTIONS

The specification sections listed below are an integral part of this specification and the Contractor shall be responsible for coordinating and providing these sections to other subcontractors.

- A. Section 02160 - EARTHWORK
- B. Section 02605 - DRAINAGE STRUCTURES
- C. Section 02255 - CRUSHED STONE
- D. Section 02502 - PAVEMENT PATCHING
- E. Section 02640 - CULVERT SLIPLINING

#### 1.04 SUBMITTALS

- B. Shop Drawings - for piping, fittings and other appurtenances shall be prepared and submitted in accordance with 01300.
- C. A pipe submittal shall include the following:
  - (a) structure number and location;
  - (b) manhole, inlet, or catch basin type, if applicable;



- (c) pipe length, as determined by construction engineering;
  - (d) pipe size, as shown on the plans;
  - (e) pipe material including all information required to verify conformance with these specifications.
  - (f) number and type of end sections.
- D. No fabrication or installation shall begin until shop drawings are approved by the Engineer.

## **PART 2 - PRODUCTS**

### 2.01 PIPES

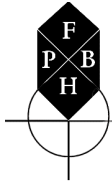
#### A. Culvert Pipe

- a. Pipe types shall be as shown and called for on the plans.
2. Pipes used for drainage shall be Corrugated Polyethylene Pipe with Smooth Interior as follows:
- 4- through 10-inch shall meet AASHTO M252, Type S.
  - 12- through 24 inch shall meet AASHTO M294, Type S or ASTM F2306. Pipe shall be joined using a bell & spigot joint meeting AASHTO M252, AASHTO M294 or ASTM F2306. The joint shall be soil-tight and gaskets, when applicable, shall meet the requirements of ASTM F477. Gaskets shall be installed by the pipe manufacturer and covered with a removable wrap to ensure the gasket is free from debris. A joint lubricant supplied by the manufacturer shall be used on the gasket and bell during assembly. Fittings shall conform to AASHTO M252, AASHTO M294, or ASTM F2306.

## **PART 3 - EXECUTION**

### 3.01 GENERAL

- A. Pipe and accessories shall be handled in such a manner as to insure that pipe is installed in sound, undamaged condition. Particular care shall be taken not to injure the pipe coating or lining (if any).
- B. Any pipe showing a distinct crack with no evidence of incipient fracture beyond the limits of the visible crack, if approved, may have the cracked portion cut off by, and at the expense of, the Contractor before the pipe is laid so that the pipe used is perfectly sound. The cut



shall be made in the sound barrel at a point at least 12 inches from the visible limits of the crack.

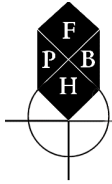
- C. Cutting of the pipe shall be done in a neat and workmanlike manner without damage to the pipe lining. Unless otherwise authorized by the Engineer, all pipe cutting shall be done by means of an approved type of power cutter. The use of hammer and chisel, or any other method which results in rough edges, chipped or damaged pipe, is prohibited.
- D. Each pipe section shall be placed into position in the trench in such manner and by such means required to cause no injury to the pipe, persons, or to any property.
- E. The Contractor shall furnish slings, straps, and/or approved devices to provide satisfactory support of the pipe when it is lifted. Transportation from storage areas to the trench shall be restricted to operations which can cause no damage to the pipe or lining.
- F. The pipe shall not be dropped from trucks onto the ground or into the trench.
- G. The Contractor shall have on the job site with each pipe laying crew, all the proper tools to handle and cut the pipe.
- H. Damaged pipe coating and/or lining shall be restored per the manufacturer's directives before installation as approved by the Engineer.

### 3.02 EXCAVATION

- A. Unless otherwise directed, the trench cross sectional dimensions shall be as shown on the plans. The trench bottom shall give full support to the pipe as shown on the plans. Recesses shall be cut to receive any projecting hubs or bells.

Where pipe is to be placed in fill sections, a portion of the fill shall be constructed prior to installation of the pipe as needed.

Where rock or boulder formation is encountered at or above the proposed trench bottom elevation, the trench shall be excavated at least 8 in. below the proposed grade, backfilled with structure backfill, and compacted in accordance with these specifications. Greater excavation will be required where rock is encountered where the fill over the pipe is to exceed 16 feet. The minimum excavation for these deeper installations shall be shall be completed as needed.



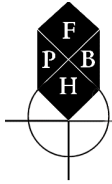
B. In case a firm foundation is not encountered at the required grade, the unstable material shall be removed to such depth that when replaced with suitable material, usually B borrow, compacted, and properly shaped, it will produce a uniform and stable foundation along the entire length of the pipe. A timber mat shall be placed to hold the pipe to line and grade if it is necessary. All trenches shall be kept free from water until any joint filling material has hardened sufficiently not to be harmed.

### 3.03 LAYING PIPE

- A. Each section of pipe shall have a full firm bearing throughout its length, true to the line and grade given. All pipes which settle or which are not in alignment shall be taken up and re-laid. Pipe shall not be laid on a frozen trench bottom. Fully bituminous coated and lined corrugated steel pipe and pipe-arches shall only be placed when the ambient temperature is 35°F (2°C) or above.  
Concrete and clay pipe shall be laid with hub up grade, with the spigot end fully extended into the adjacent hub, and with all ends fitted together tightly. Concrete pipe shall not be laid in muck or sulphate soils.
- B. Except for circular concrete pipe, pipe joints designed to accommodate seals or pipe joints requiring seals shall be sealed with approved rubber type gaskets, caulking, pipe joint sealant, elastomeric material, or sealing compound. Circular concrete pipe joints shall utilize rubber type gaskets.
- C. If the infiltration of water is a factor, each joint, regardless of the type used, shall be sealed with an approved compression type joint sealer in accordance with ASTM C 425 or ASTM C 443, whichever is applicable. Joints and stub-tee connections for plastic pipe shall be in accordance with the requirements of the respective material specifications for each type of pipe. Connections of plastic pipe to manholes, catch basins, and inlets shall be in accordance with the manufacturer's recommendations. Prior to being lowered into the trench, corrugated metal pipe sections shall be examined closely and so fitted that they will form a true line of pipe when in place. Sections which do not fit together properly shall not be used. At the time of acceptance, all pipe shall have been cleaned and be free from silt and other foreign matter. Prior to constructing a pipe extension, the existing structure shall be cleaned of all foreign materials. Existing anchors, end sections, or headwalls shall be removed as shown on the plans or as directed. All existing pipes which are damaged by the removal operation shall be replaced. Removed materials shall be disposed of in accordance with Division 1 of these specifications.

### 3.04 JOINING PIPE

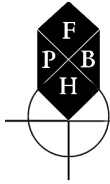




- A. Band couplers for AASHTO M 36 (M 36M) type I and type II corrugated steel pipe and pipe-arches shall have corrugations that mesh with the corrugations of the pipe sections being joined or the annular rerolled ends of those pipe sections. Band couplers with projections (dimples) may be used with pipe having either annular or helical corrugations only when corrugated band couplers will not provide a matching connection to both pipes. Band couplers for AASHTO M 36 (M 36M) type IA and IIA corrugated steel pipe and pipe-arches shall have corrugations that mesh with the corrugations of the pipe or shall be gasketed flat bands.
- B. At the connection of a pipe extension to an existing structure where the extension is a different pipe material from that in place, or a satisfactory joint cannot be obtained, a concrete collar shall be constructed. Portions of the existing structure shall be removed as shown on the plans, or as necessary, to ensure proper fit of the extension to the existing pipe. If not shown on the plans, the collar shall have a width of at least 18 in. and a thickness of at least 6 in. around the entire joint. If rigid pipe connections are of lesser strength than that of the main barrel of a pipe structure, these connections shall be encased with concrete at least 6 in. thick.
- C. Any pipe which is damaged during installation shall be repaired or replaced as directed. Slotted drain pipe or slotted vane drain pipe shall be constructed in 20 ft sections with shop fabricated elbows. The upgrade end of slotted drain pipe shall be plugged with a metal cap before backfilling. The upgrade end of slotted vane drain pipe shall be plugged with class A concrete. Such concrete shall extend 6 in. inside the upgrade end of the pipe.

### 3.05 TEE AND STUB-TEE CONNECTIONS

- A. At locations shown on the plans, or where directed, a stub-tee connection of the size specified shall be furnished and placed as a tee connection to corrugated metal pipe, corrugated metal pipe-arch, concrete pipe, reinforced concrete pipe, or reinforced concrete horizontal elliptical pipe.
- B. The stub-tee connection to a corrugated metal pipe or pipe-arch shall be constructed of corrugated metal and the length of the stub shall be no less than that which readily accommodates the connecting band. It shall be made by shop welding a stub of corrugated metal pipe to the corrugated metal pipe or pipe-arch at the time of fabrication. Where field conditions warrant, stub-tee or other connections may be field connected by using shop fabricated saddle connectors. Welds, flame cut edges, and damaged spelter coating shall be regalvanized or painted with zinc dust-zinc oxide paint in accordance with



Federal Specification TT-P641, type II or MIL-P-21035. Where applicable, damaged bituminous coating shall be repaired with asphalt mastic in accordance with AASHTO M 243. The pipe connection to the stub shall be made by means of connecting bands of required size or by means of concrete collars as directed.

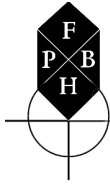
- C. The stub-tee connection to concrete pipe, reinforced concrete pipe, or reinforced concrete horizontal elliptical pipe may be field constructed or factory constructed.  
The concrete used in the stub shall be of the same proportions as that used in the construction of such pipe. The length of the concrete stub shall be no less than 6 in. nor more than 12 in. The pipe connection to the concrete stub shall be made by means of a cement mortar bead or concrete collar or as directed.

### 3.06 BACKFILLING

- A. All pipes shall be backfilled with structure backfill or flowable backfill. Structure backfill shall be placed in accordance with INDOT Specification 211. Flowable backfill shall be placed in accordance with INDOT Specification 213.07 as shown on the plans or as directed. Prior to placing flowable backfill, all standing water shall be removed from the trench. If the water cannot be removed from the trench, structure backfill shall be used in lieu of flowable backfill to an elevation 2 ft (0.6 m) above the groundwater. The remainder of the trench shall be backfilled as shown on the plans.
- B. All pipes, except underdrains, will be visually inspected for acceptance a minimum of 30 days after the completion of backfill operations. Pipes that cannot be visually inspected shall be video inspected for acceptance in accordance with INDOT Specification 718.07. The Engineer will determine the sections of pipe to be video inspected. A copy of the video inspection shall be provided in a format acceptable to the Engineer prior to performing the mandrel testing.
- C. After the visual or video inspection, the Contractor shall check pipe deflection by performing a mandrel test for all pipes manufactured from materials listed in the following table or as otherwise directed.

#### D. PIPES REQUIRED TO BE MANDREL TESTED

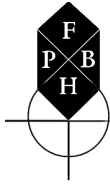
Pipe Material Standard	INDOT Spec	AASHTO	ASTM
Corrugated Polyethylene Pipe	907.19	M 294	
Ribbed Polyethylene Pipe	907.20	F 894	
Smooth Wall Polyethylene Pipe	907.21	F 714	
Profile Wall PVC Pipe*	907.22	M 304	



Smooth Wall PVC 907.23 M 278 F 679

\* Mandrel testing will not be required for profile wall polyvinyl chloride pipe in accordance with 907.22 that also is in accordance with ASTM F 949.

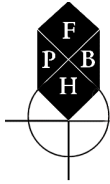
- E. The mandrel shall have a minimum of 9 arms or prongs and a diameter that is 95% of the nominal pipe diameter. The Contractor shall provide a proving ring that is 95% of the nominal pipe diameter for each mandrel. The Contractor shall pull the mandrel through the pipe by hand. If the mandrel does not pass through the pipe, the Contractor shall measure and report the minimum diameter of the deficient pipe to the Engineer.
- F. If the minimum diameter of the deficient pipe is between 92.5% and 95.0% of the nominal pipe diameter, the Contractor shall provide an evaluation of the deficient pipe prepared by a professional engineer. The evaluation shall consider the severity of the deflection and its effects on structural integrity, environmental conditions, and the design service life of the pipe. A report summarizing the evaluation and including the professional engineer's recommendation for acceptance, remediation, or replacement of the pipe shall be submitted to the Engineer for final determination.
- G. If the minimum diameter of the deficient pipe is equal to or less than 92.5% of the nominal pipe diameter, the deficient pipe shall either be replaced or a remediation plan shall be prepared by a professional engineer and submitted to the Engineer for final determination. The deficient pipe shall be replaced if the professional engineer's remediation plan recommends replacement of the pipe or if the pipe has been damaged. Deficient pipe shall at a minimum be replaced between the nearest pipe joints or to the nearest structure. Replaced or remediated pipe sections shall be mandrel tested a minimum of 30 days after the completion of backfill operations.
- H. Commercial and private drive pipes are excluded from the mandrel testing and video inspection requirements.
- I. Where material other than structure backfill or flowable backfill is permitted and used for backfilling, it shall be of such nature that compacts readily. That portion around and for 6 in. above the top of the pipe shall be free from large stones. This material shall be placed in layers not to exceed 6 in., loose measurement, and each layer compacted thoroughly by means of mechanical tamps.
- J. Where coarse aggregate is used for structure backfill, geogrid shall be installed along the sides of the trench to prevent surrounding soil infiltration into the voids left in the coarse aggregate.



- K. An adequate earth cover, as shown on the plans, shall be placed over the structure before heavy equipment is operated over it. Backfill for slotted drain pipe and slotted vane drain pipe shall consist of class A concrete on both sides of the pipe. During the backfilling and paving operations, the slot shall be covered to prevent infiltration of material into the pipe.

### 3.07 PIPE END SECTIONS, ANCHORS, GRATED BOX END SECTIONS, AND SAFETY METAL END SECTIONS

- A. Pipe end sections, anchors, grated box end sections, and safety metal end sections shall be constructed as shown on the plans or as directed. Straps or hook bolts required for anchors shall be as shown on the plans. Anchor straps shall be placed at both the upstream and downstream end of each corrugated aluminum alloy, corrugated steel, or structural plate pipe or pipe-arch with a diameter or span of 42 in. or greater. Hook bolts and anchor straps shall be placed at both the upstream and downstream end of each corrugated aluminum alloy, corrugated steel, or structural plate pipe or pipe-arch with a diameter or span of 84 in. or greater.
- B. A dimpled connection band shall be used for connecting pipe end sections and safety metal end sections to ends of corrugated metal pipe whose end corrugations are not perpendicular to the centerline of the pipe. Grated box end sections shall be constructed according to the required pipe size and surface slope of the grated box end section specified at each location. Precast units shall be cast as a single complete unit except for the toewall which shall be cast in place. They shall be set and leveled on a 6 in. (150 mm) thick bed of coarse aggregate. If precast units are used and the adjoining pipe is to be field connected directly to the precast unit, the connection shall be made using a class A concrete collar of 6 in. (150 mm) minimum longitudinal and radial 430 thickness. Inserts for approved lifting devices may be cast in the bottom slab of the precast sections. The number and location of lifting devices needed for handling shall be determined by the fabricator. All reinforcement shall have a minimum cover of 1 1/2 in. (40 mm) and shall have a minimum lap of 21 in. (540 mm). The type A construction joint between the floor and the wall is optional for cast in place units.



### 3.08 PIPE CUTS / EXTENSIONS

- A. Where shown on the plans or as directed, existing pipe shall be cut and removed and a new portion replaced as necessary for extensions. The means of joining the existing cut pipe to the new pipe extension shall be as listed in Subsection 3.04 of this Section of the specifications. All cuts shall be clean and neat and done so as to allow for a solid joint to be achieved with the connection to any required pipe extensions.
- B. Prior to constructing a pipe extension, the existing structure shall be cleaned of all foreign materials. Existing anchors, end sections, or headwalls shall be removed as shown on the plans or as directed. All existing pipes which are damaged by the removal operation shall be replaced. Removed materials shall be disposed of in accordance with Division 1 of these specifications.

### 3.09 PAVEMENT REPLACEMENT

- A. Where a structure is to be placed under an existing pavement, the pavement removal and replacement shall be as shown on the plans and as specified in Section 02502.

### 3.10 ENCASEMENT

- A. In the event an underground pipe shall have cover of less than 12” between the top of the pipe and the bottom of the base layer of HMA, Reinforced Concrete, CLASS III pipe shall be used as specified in the plans and the backfill will be as shown in the SHALLOW COVER PIPE BACKFILL DETAIL as shown on the plans.

### 3.11 SEWER PROXIMITY TO WATER MAINS

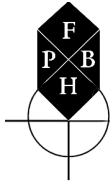
#### A. Longitudinal Installation

A. Whenever possible, storm sewers (culverts included) and sanitary sewers shall be laid with a minimum of 10 feet horizontal separation between the sewer and potable water lines. Should a lateral separation of 10 feet not be possible, then the following measures taken:

B. The storm or sanitary sewer shall be constructed of pressure rated, water grade pipe. The Storm sewers or Sanitary Sewer pipe shall be as listed below. This sewer pipe shall be as follows:

a) Storm Culvert Pipe:





1) ASTM D2241, SDR 26 – 160 psi, Color shall be Green.

C. The Contractor shall encase potable water piping with concrete (full encasement, 6" minimum thickness on all sides) where trench excavations pass within 8 feet of a storm drainage structure or inlet.

B. Crossing Installations

1. Any crossings of water mains and sewers shall be made at an angle of greater than or equal to 45 degrees.

2. In a crossing situation, water and sewer mains shall be separated by 18 inches where possible.

3. If 18 inches vertical separation is not possible then the sewer shall be constructed of water grade, pressure rated pipe as noted above and a poured concrete cradle shall be provided between the two pipes to support the top crossing pipe over the bottom pipe.

4. If the water main must cross under the sewer, then the water main shall be encased in concrete with an encasement a minimum thickness of 6" on all sides of the water main and the encasement extending for a length of 10 feet on either side of the sewer crossing.

5. In no case shall the water and sewer mains be placed in contact regardless of the pipe materials used.

3.12 CAPPING/ABANDONING EXISTING STRUCTURES AND PIPES

A. All pipe structures directed to be capped and abandoned shall be as shown on the plans. The abandonment shall be accomplished by filling the structure with class A concrete or Flowable Fill after the existing drainage has been maintained or the new pipe has been installed. The entire length of the pipe to be abandoned shall be filled so that no voids remain within the structure. Alternate methods for abandoning pipe structures may be used; however, the Contractor shall submitted these alternate means for approval of the Engineer before they may be used.

**-END OF SECTION**



## SECTION 02923 LANDSCAPE GRADING

### **PART 1 - GENERAL**

#### 1.01 WORK INCLUDED

Final grading of topsoil for finish landscaping.

#### 1.02 RELATED SECTIONS

Section 02160 - EARTHWORK

Section 02936 - SEEDING

### **PART 2 - PRODUCTS**

- A. Topsoil: Excavated Material free of rocks, roots larger than 1/2-inch, subsoil, debris and large weeds.

### **PART 3 - EXECUTION**

#### 3.01 EXAMINATION

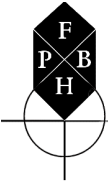
- A. Verify that trench backfilling has been inspected.
- B. Verify substrate base has been contoured and compacted.

#### 3.02 SUBSTRATE PREPARATION

- A. Eliminate uneven areas and low spots.
- B. Remove debris, roots, branches, stones, in excess of 1/2-inch in size. Remove subsoil.
- C. Scarify subgrade to depth of 3-inches where topsoil is scheduled. Scarify in areas where equipment is used for hauling and spreading topsoil and has compacted subsoil.

#### 3.03 PLACING TOPSOIL

- A. Place topsoil in areas where seeding, planting are to occur to the thickness as scheduled. Place topsoil during dry weather.



- B. Fine grade topsoil eliminating rough or low areas. Maintain profile and contour of subgrade.
- C. Remove roots, weeds, rocks and foreign material while spreading.
- D. Manually spread topsoil close to trees, plants and building to prevent damage.
- E. Lightly compact placed topsoil.
- F. Remove surplus subsoil and topsoil from site.
- G. Leave stockpile area and site clean and raked, ready to receive landscaping.

#### 3.04 TOLERANCES

- A. Top of topsoil; Plus or minus 1/2-inch.

#### 3.05 PROTECTION

- A. Protect landscaping and other features remaining as final work.
- B. Protect utilities and paving.

#### 3.06 SCHEDULES

- A. Compacted topsoil thickness at the following areas:
  - 1. Seeded Grass: 3-inches.
  - 2. Sod: 2-inches.

**-END OF SECTION -**



## SECTION 02936 SEEDING

### **PART 1 - GENERAL**

#### 1.01 WORK INCLUDED

- A. Seeding, mulching.
- B. Maintenance.

#### 1.02 RELATED SECTIONS

- A. Section 02160 - EARTHWORK
- B. Section 02923 - LANDSCAPE GRADING

#### 1.03 DEFINITIONS

- A. Weeds: Includes Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimber Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

#### 1.04 MAINTENANCE DATA

- A. Includes maintenance instructions, cutting method and maximum grass height.

#### 1.05 QUALITY ASSURANCE

- A. Provide seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.

#### 1.06 REGULATORY REQUIREMENTS

- A. Comply with regulatory agencies for herbicide composition.
- B. Provide certificate of compliance from authority having jurisdiction indicating approval of seed mixture.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, protect and handle products to site under provisions of Division I.
- B. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable.



- C. Deliver fertilizer in waterproof bags showing weight, chemical composition, and name of manufacturer.

1.08 MAINTENANCE SERVICE

Maintain seeded areas immediately after placement until grass is well established and exhibits a vigorous growing condition for two cuttings. Maintenance shall include regular waterings of the applied mixture.

**PART 2 - PRODUCTS**

2.01 SEED MIXTURES

Seed mixtures for all portions of the project with the exception of the area shall be as follows:

A. PERMANENT SEED MIXTURE:

<u>Scientific Name</u>	<u>Common Name</u>	<u>Ounces/Acre</u>
<b>Permanent Grasses/Sedges:</b>		
Andropogon gerardii	Big Bluestem	12.00
Carex comosa	Bristly Sedge	2.00
Carex cristatella	Crested Oval Sedge	1.00
Carex lurida	Bottlebrush Sedge	2.50
Carex spp.	Prairie Sedge Mix	2.00
Carex vulpinoidea	Brown Fox Sedge	4.00
Elymus virginicus	Virginia Wild Rye	8.00
Glyceria striata	Fowl Manna Grass	1.00
Panicum virgatum	Switch Grass	2.00
Scirpus atrovirens	Dark Green Rush	2.00
Scirpus cyperinus	Wool Grass	0.50
Spartina pectinata	Prairie Cord Grass	3.00
	<b>Total</b>	<b>40.00</b>
<b>Forbs:</b>		
Alisma spp.	Water Plantain (Various Mix)	1.00
Asclepias incarnata	Swamp Milkweed	2.00
Aster novae-angliae	New England Aster	0.50
Coreopsis tripteris	Tall Coreopsis	1.00
Eupatorium maculatum	Spotted Joe-Pye Weed	0.25
Iris virginica	Blue Flag	4.00
Liatris spicata	Marsh Blazing Star	1.00
Lobelia cardinalis	Cardinal Flower	0.25
Lobelia siphilitica	Great Blue Lobelia	0.50
Lycopus americanus	Common Water Horehound	0.25
Sagittaria latifolia	Common Arrowhead	0.75





<u>Scientific Name (continued)</u>	<u>Common Name</u>	<u>Ounces/Acre</u>
Silphium terebinthinaceum	Prairie Dock	1.00
Verbena hastata	Blue Vervain	1.50
Zizia aurea	Golden Alexanders	0.75
<b>Total</b>		<b>14.75</b>

B. TEMPORARY SEED MIXTURE: (Refer also to Erosion & Sediment Control Specifications)

<u>Scientific Name</u>	<u>Common Name</u>	<u>Ounces/Acre</u>
Avena sativa	Common Oat	360.00
Lolium multiflorum	Annual Rye	100.00
<b>Total</b>		<b>460.00</b>

C. SLIDE CORRECTION SEED MIXTURE

<u>Species or Mixture</u>	<u>Seeding Rates (lbs/ac)</u>	<u>Seeding Dates (without mulch)</u>
<i>General mix</i>		
white clover	8	Aug. 1-Sept. 1
Perennial rye grass	5	
Annual rye grass	8	Aug. 15-Sept. 15
Creeping red fescue	10	Mar.1-May 1
<i>Sun and Partial Shade Mix</i>		
Kentucky 31 fescue and one of the following:	20	Mar.1-May 1 and Aug.1-Oct.1
spring oats, buckwheat	30	Mar. 1-May 1
creeping red fescue	20	Mar. 1-May 1
<i>Appalow sericea lespedeza:</i>		
red top	10	Mar. 1-June 1
birdsfoot trefoil	2	Mar. 1-Sept. 15
flatpea	10	Mar. 1-Sept.15
cereal rye, wheat, barley	30	Aug. 1-Sept. 15
cereal rye, wheat, barley	30	Sept. 15-Oct.1



## 2.02 ACCESSORIES

Mulching Material: Oat or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry. Hay or chopped cornstalks are not acceptable.

Water: Clean, fresh and free of substance of water or matter which could inhibit vigorous growth of grass.

Erosion Control Blanket: Shall be excelsior blankets consisting of 100% weed free straw matrix stitched to a double net. The blanket shall use 100% biodegradable natural netting that is wildlife friendly. Photodegradable netting is NOT acceptable. The blanket shall be suitable for use on slopes as steep as 0.75 to 1. Staples provided with the blanket shall allow for a minimum drive depth of 6" into the soil.

Stakes: Softwood lumber, chisel pointed.

String: Inorganic fiber.

Fertilizer: Shall be standard 12-12-12 Commercial Mixture. The Fertilizer Standards shall be governed by the rulings of the Indiana Seed Commissioner.

## **PART 3 - EXECUTION**

### 3.01 PREPARATION

Soil: Till soil thoroughly to a minimum depth of 2".

Apply fertilizer to soil at rate of 20 pounds per 1000 square feet immediately prior to seeding.

Rake or lightly till fertilizer into soil.

When topsoil is exceedingly dry, moisten to a depth of 4", 48 to 72 hours prior to start of seeding.

Perform watering to prevent run off.

### 3.02 SEEDING:

Sow grass/sedge/forb seed uniformly over entire area in 2 operations at rate shown in the seed mixture.



Apply second seeding at right angles over the first.

Seeding operation may be by broadcast method or drill equipment.

Lightly cover seed by hand raking or dragging lawn areas to depth of 1/4”.

Smooth and firm seeded areas with a 200# roller and water with a fine spray.

Cover all sloped areas (steeper than 3 to 1 slopes), drainage areas disturbed by linear ditch grading and other areas where erosion may occur with erosion control blanket. Anchor securely in place per the manufacturer’s directives.

Mulch all seeded areas at a minimum rate of 1 Ton/acre. Mulch shall be held in place as contractor will be responsible for replacing mulch which has blown away prior to adequate seeding germination. Mulch shall be held in place by one of the following methods.

1. Tilling or punching mulch into the soil.
2. Commercially produced mulch binder, which is non-toxic for humans, fish, wildlife and plants.
3. Binder twine fastened down with pegs spaced 6 feet or less apart.
4. Erosion Control Blanket shall be held in place with wire staples as produced by the erosion control blanket manufacturer for that purpose. The Staples shall be placed at 12” c-c minimum spacing or closer if recommended by the manufacturer.

### 3.03 VEGETATION ESTABLISHMENT

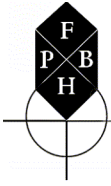
Provide maintenance until grass and plant growth is well established.

Provide necessary landscape care including fertilizing, weed eradication, watering, and replacement of unsuitably established seeded areas.

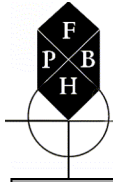
Establishment period for growth:

Seeded areas: extend until uniform stand of grasses/sedges/forbs is established over entire area.

**-END OF SECTION-**



**DIVISION 3**  
**CONCRETE**



## SECTION 03200 CONCRETE REINFORCEMENT

### **PART 1 - GENERAL**

#### 1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required and install all concrete reinforcement as shown on the Drawings and specified herein.

#### 1.02 RELATED WORK

- A. Section 03300 - Cast-in-Place Concrete

#### 1.03 SUBMITTALS

- A. Shop drawing submittals shall be in accordance with Section 01300.
- B. The following shall be submitted for review prior to the fabrication of reinforcement.
  - 1. Placing drawings for steel reinforcement, including provisions for all wall penetrations.
  - 2. Bar bending details.
- C. The following shall be submitted at the time of shipment of reinforcing steel.
  - 1. Certified copy of mill test on each heat of reinforcing steel fabricated showing physical and chemical analysis.

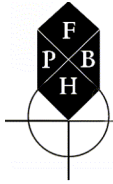
#### 1.04 REFERENCE STANDARDS

- A. Steel reinforcement in concrete shall conform to INDOT specifications 703 and 910.01 unless otherwise specified herein.

#### 1.05 PRODUCT DELIVERY AND HANDLING

- A. Reinforcing shall be substantially free from mill scale, rust, dirt, grease, or other foreign matter.
- B. Reinforcement shall be shipped and stored with bars of the same size and shape fastened in bundles with durable tags, marked in a legible manner with





waterproof markings showing the same designations as shown on the submitted placing drawings.

- C. Reinforcing steel shall be stored off the ground and shall be protected from moisture and kept free from dirt, oil, or other injurious contaminants.

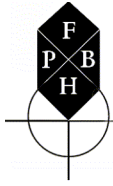
## **PART 2 - PRODUCTS**

### **2.01 MATERIALS**

- A. Materials shall be new, of domestic manufacture, and shall conform to the following material specifications.
  - 1. Concrete reinforcing bars: ASTM A 615, Grade 60 minimum deformed bars.
  - 2. Welded steel wire fabric: ASTM A 185.
  - 3. Concrete reinforcing bars used for shear or torsion stirrups or ties: ASTM A 615, Grade 60 deformed bars.
  - 4. Plastic protected bar supports: CRSI Bar Support Specifications, Class 1 - Maximum Protection.
  - 5. Stainless steel protected bar supports: CRSI Bar Support Specifications, Class 2 - Moderate Protection.
  - 6. Precast concrete block bar supports: CRSI Bar Support specifications, Precast Blocks with Wires.
  - 7. Tie wires for reinforcement: 16-gauge or heavier, black annealed wire.

### **2.02 FABRICATION OF REINFORCEMENT**

- A. Fabrication tolerances shall be in accordance with the CRSI, Code of Standard Practice-Fabrication.
- B. Bars shall be cold bent.
- C. Bars shall be bent around a revolving collar having a diameter of not less than that recommended by the CRSI, Code of Standard Practice-Detailing. Hooks shall conform to the same Code.

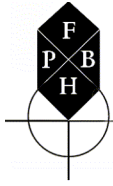


- D. Bars that are to be butt spliced, placed through limited diameter holes in metal or have a threaded end shall have the applicable end(s) saw-cut.

### **PART 3 - EXECUTION**

#### **3.01 INSTALLATION**

- A. Surface condition, bending, spacing, and tolerances of placement of reinforcement shall conform to the CRSI, Code of Standard Practice-Field Erection.
- B. Except as otherwise indicated on the Drawings, the minimum concrete cover of reinforcement shall be as follows:
1. Concrete cast against and permanently exposed to earth; 3-in.
  2. Concrete surfaces in contact with soil, water, sewage, sludge or exposed to the weather; 2-in.
  3. Concrete surfaces not in contact with soil, water, sewage, sludge or exposed to the weather:
    - a. Beams, girders, columns: principal reinforcement, ties, stirrups or spirals; 1-1/2-inch;
    - b. walls and bottom steel of slabs; 1-in;
    - c. Shells and top steel of slabs; 3/4-in.
- C. Reinforcement which is to be exposed for a considerable length of time after being placed shall be painted with a heavy coat of neat cement slurry.
- D. No reinforcing bars shall be welded either during fabrication or erection unless specifically called for on the Drawings, specified herein, or with prior written approval of the Engineer. All bars that have been welded, including tack welds, without such approval shall be immediately removed from the work. When welding of reinforcement is approved or called for, it shall conform to the AWS Structural Welding Code-Reinforcing Steel, AWS D1.4.



### 3.02 REINFORCEMENT AROUND OPENING

Not used

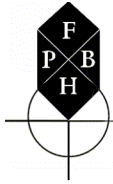
### 3.03 SPLICING OF REINFORCEMENT

Except as otherwise indicated on the Drawings, compression embedment and lap splices shall be 40 diameters, but not less than 18 inches.

- A. Except as otherwise indicated on the Drawings, tension lap splices shall be in accordance with the ACI 315 Detailing Manual. Class B splices shall be used in accordance with ACI 318.
- B. Except as otherwise indicated on the drawings, splices in circumferential reinforcement in circular walls shall be Class B splices. Adjacent bars shall not be spliced within the required lap length.
- C. Compression type mechanical connectors may be used only where expressly shown on the drawings or if approved in writing by the Engineer. The splice shall include concentric bearing from one bar to the other bar and shall be capable of developing 125 percent of specified yield strength. Splices in adjacent bars shall be offset at least 30 bar diameters unless otherwise shown on the Drawings.
- D. Splices in welded wire fabric shall be lapped not less than 1-1/2 courses or 12-in. The spliced fabrics shall be tied together with wire ties at least 24-in. on center.
- E. Horizontal wall reinforcing bar splices shall be staggered with no more than 50 percent of the bars spliced within the required lap length. Class B splices shall be used.

### 3.04 ACCESSORIES

- A. The Contractor is solely responsible for determining, providing, and installing accessories such as chairs, chair bars, and the like in sufficient quantities and strength to adequately support the reinforcement to prevent its displacement during the erection of the steel and the placement of concrete and to provide spacings of bars with adequate cover as shown on the drawings or specified herein. Tie wire ends shall be directed away from the surface of the structure.
- B. Precast concrete blocks with wires shall be used where the reinforcing steel is to be supported over soil.

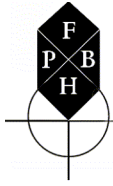


- C. Precast concrete blocks with wires or plastic protected bar supports shall be used to support reinforcing steel on formwork. If the bottom of the precast blocks will be exposed to view after the removal of forms, the color and appearance of the block shall match that of the adjacent concrete.
- D. Alternate methods of supporting top steel in slabs, such as steel channels supported on the bottom steel or vertical reinforcing steel fastened to the bottom and top mats, may be used if accepted by the Engineer.

### 3.05 INSPECTION

- A. In no case shall any reinforcing steel be covered with concrete until the amount and position of the reinforcement has been observed by the Engineer and his permission given to proceed with the concreting, unless otherwise agreed. The Engineer shall be given ample prior notice of the availability of set reinforcement for his review.

**-END OF SECTION-**



## SECTION 03300 CAST-IN-PLACE CONCRETE

### PART 1- GENERAL

#### 1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment and incidentals required to place all cast-in-place concrete, reinforcing steel, forms, and miscellaneous related items, including sleeves, ringlets, anchor bolts, stone veneer anchors, inserts and embedded items, as shown on the Drawings and specified herein.

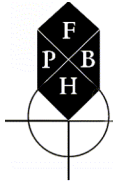
#### 1.02 RELATED WORK

- A. Section 03345 - Concrete Finishing
- B. Section 03200 - Concrete Reinforcement

#### 1.03 DESCRIPTION

- A. Concrete shall be of Portland cement, fine aggregate, coarse aggregate, water and admixtures as specified and shall be ready-mixed, or transit-mixed concrete produced by a plant acceptable to the Engineer. All constituents, including admixture, shall be batched at the central batch plant.
- B. Reinforced concrete shall conform to INDOT Specification 702, Concrete, Class "C".
- C. All testing and inspection services required will be provided by the Contractor. Cost of such work, except as specifically stated otherwise, will be paid for by the Contractor. Methods of test will comply in detail with the latest applicable ASTM Methods of Test.
- D. Samples of constituents and of concrete as placed will be subjected to laboratory tests. All materials incorporated in the work shall conform to accepted samples.
- E. Under special circumstances, the Engineer may allow minor deviations from the material requirements specified, provided the resulting concrete quality is not adversely affected or provided a suitable adjustment in cement content is made to compensate for such deviations without cost to the Owner.





#### 1.04 SUBMITTALS

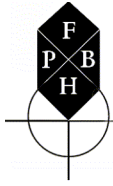
- A. The Contractor shall submit to the Engineer for approval a proposed design mix for each concrete strength and type required by this Specification. See Paragraph 1.05 for additional information required. An additional mix design for each type and strength of concrete to be placed by pumping shall be submitted to the Engineer for acceptance.
- B. The Contractor shall submit to the Engineer for acceptance, as provided in Section 01300, shop drawings showing placement of all joints of plywood forms, and rustications. Contractor shall specify what methods of form bracing he intends to use.

#### 1.05 QUALITY ASSURANCE

- A. The actual acceptance of aggregates and development of mix proportions to produce concrete conforming to the specific requirements shall be determined by means of prior laboratory tests made with the constituents to be used on the work.
- B. Well in advance of placing concrete, the Contractor shall discuss with the Engineer the proposed source of materials and concrete mixture which he proposes to use. He shall furnish samples of aggregate and cement for testing, deliver them to the organization designated by the Engineer, and shall permit ample time for the laboratory to develop a proposed design mix to modify the design of the mix within the limits of these specifications.
- C. The limiting strengths, water contents and cement factors of INDOT Specification 702.02 shall apply.

High early strength Portland cement is allowed as an option on this project. When high early strength Portland cement is permitted, the same strength requirements shall apply except that the indicated strengths shall be attained at seven (7) days instead of twenty-eight (28) days.

- C. If, during the progress of the work, it is impossible to secure concrete of the required workability and strength with the materials being furnished, the Engineer may order such changes in proportions or materials, or both, as may be necessary to secure the desired properties. All changes so ordered shall be made at the Contractor's expense.
- D. If the materials from the sources originally accepted change in characteristics, the Contractor shall, at his expense, have made new acceptance tests of



aggregates and establishment of new basic mixtures by the acceptable testing laboratory being employed on the work.

- E. Concrete shall be of such consistency and mix composition that it can be readily worked into the corners and angles of the forms and around the reinforcement, inserts, and wall castings without permitting materials to segregate or free water to collect on the surface, due consideration being given to the methods of placing and compacting.

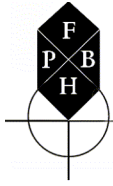
#### 1.06 ACCEPTANCE TESTS

- A. Conformity of aggregates to these Specifications, and the actual proportions of cement, aggregates, and water necessary to produce concrete conforming to the requirements set forth herein, shall be determined by tests made with representative samples of the materials to be used on the work. Tests will be made by the laboratory selected by the Engineer and shall comply with ASTM Specification C-39.
- B. Cement shall be subject to testing to determine that it conforms to the requirements of this Specification. Methods of testing shall conform to the appropriate specification, but the place, time, frequency, and method of sampling will be determined by the Engineer in accordance with the particular need.
- C. Samples of fine and coarse aggregates shall be furnished for examination and testing at least three weeks before the Contractor proposes to use them in the work.

## **PART 2 - PRODUCTS**

#### 2.01 MATERIALS

- A. Materials shall conform to INDOT Specification 702, Class "C" Concrete.
- B. Grout shall be non-shrink epoxy and be proportioned with sand in strict accordance with the manufacturer's instructions for the use intended. Non-shrink grout shall conform with the Corps of Engineers Specification for Non-Shrink Grout, CRD-C621-82B. The mixed epoxy grout system shall have a minimum "working life" of 45 minutes at 75°F.
- C. Flowable Fill used on the project shall conform to INDOT Specification 213 and referenced specifications.



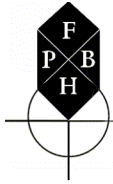
## **PART 3 EXECUTION**

### **3.01 MEASURING MATERIALS**

- A. Materials shall be measured by weighing except as otherwise specified or where other methods are specifically authorized by the Engineer. The apparatus provided for weighing the aggregates and cement shall be suitably designed and constructed for this purpose. Scales shall have been certified by the local Sealer of Weights and Measures within one year of use. Each size of aggregate and the cement shall be weighed separately. The accuracy of all weighing devices shall be such that successive quantities can be measured to within one per cent of the desired amount. Cement in standard packages (sacks) need not be weighed, but bulk cement and fractional packages shall be weighed.
- B. Water shall be measured by volume or by weight. The water-measuring devices shall be capable of control to 1/2% accuracy. All measuring devices shall be subject to approval. Admixtures shall be dispensed either manually with use of calibrated containers or measuring tanks, or by means of an approved automatic dispenser designed by the manufacturer of the specific admixture.

### **3.02 MIXING**

- A. Concrete shall be ready-mixed, or transit-mixed, as produced by equipment acceptable to the Engineer. No hand-mixing will be permitted. Adding water in controlled amounts during the mixing cycle shall be done only with the express approval of, and under the direction of the Engineer.
- B. Ready-mix or transit-mixed concrete shall be transported to the site in watertight agitator or mixer trucks loaded not in excess of rated capacities for the respective conditions as stated on the name plate. Discharge at the site shall be within 1 1/2 hours after water was first introduced to the mix. Central mixed concrete shall be plant-mixed a minimum of 1 1/2 minutes per batch and then shall be truck-mixed or agitated a minimum of 8 minutes. Agitation shall begin immediately after the premixed concrete is placed in the truck and shall continue without interruption until discharged. Transit-mixed concrete shall be mixed at mixing speed for at least 10 minutes immediately after charging the truck, followed by agitation without interruption until discharged.
- C. All central plant and rolling stock equipment and methods shall conform to the latest Truck Mixer and Agitator Standards of the Truck mixer manufactures, Bureau of the National Ready-Mixed Concrete Association, as well as ACI Standard 318, Chapter 5, and ASTM Specification C94.



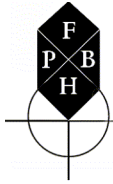
- D. The retempering of concrete or mortar which has partially hardened, that is mixing with or without additional cement, aggregate, or water, will not be permitted.
- E. Attention is called to the importance of dispatching trucks from the batching plant so that they shall arrive at the site of the work just before the concrete is required, thus avoiding excessive mixing of concrete while waiting or delays in placing successive layers of concrete in the forms.

### 3.03 FIELD TESTS

- A. Sets of three field control cylinder specimens will be taken at random by the Contractor during the progress of the work, in conformity with ASTM Designation C31; the total number of specimens taken on the project may average one set per 20 cu yds, and in general not less than one set of specimens will be taken on any one day. When average ultimate 28-day strength of control cylinders in any set falls below the required ultimate strength or below proportional minimum 7-day strengths where proper relation between 7- and 28-day strengths have been established by tests, proportions, water content, or temperature conditions shall be changed to secure the required strengths. See also Section 03300, paragraph 3.10, Failure to Meet Requirements.
- B. The Contractor shall cooperate in the making of such tests to the extent of allowing free access to the work for the selection of samples, providing an insulated closed curing box for specimens, affording protection to the specimens against injury or loss through his operations, and furnishing material and labor required for the purpose of taking concrete cylinder samples, curing boxes, and shipping boxes. All shipping of specimens will be paid for by the Contractor. Curing boxes shall be acceptable to the Engineer.
- C. Slump tests will be made in the field by the Contractor and observed by the Engineer.

### 3.04 INSPECTION AND CONTROL

- A. The preparation of forms, placing of reinforcing steel, conduits, pipes, and sleeve, batching, mixing, transportation, placing and curing of concrete shall be at all times under the inspection of the Engineer.
- B. The Contractor will also engage the services of an independent testing laboratory to establish the basic mixtures of concrete as required by the specifications and shall complete the testing.



- C. Air entrainment shall be measured by the Engineer or his representative at the time of concrete deposit in accordance with ASTM Designation C231.

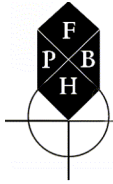
### 3.05 CONCRETE APPEARANCE

- A. Concrete for every part of the work shall be of homogeneous structure which, when hardened, will have the required strengths, durability and appearance.
- B. Forms, mixtures and workmanship shall be such that concrete surfaces, when exposed, will require no finishing.
- C. When concrete surfaces are stripped, the concrete when viewed in good lighting from 10 ft away shall be pleasing in appearance, and at 20 ft shall show no visible defects.

### 3.06 FORMS

- A. Forms shall be used for all concrete masonry, including footings. Forms shall be so constructed and placed that the resulting concrete will be of the shape, lines, dimensions, appearance, and to the elevations indicated on the Drawings.
- B. Forms for all exposed exterior and interior concrete walls shall be Type A-C exterior grade plywood with "A" veneer exterior on casting side. Rustications shall be at the location and to the details shown on the Drawings. Moldings for chamfers and rustications shall be milled and planed smooth.
- C. Forms for all other cast-in-place concrete shall be made of wood, metal, or other accepted material. Wood forms shall be constructed of sound lumber or plywood of suitable dimensions, free from knotholes and loose knots. Where used for exposed surfaces, boards shall be dressed and matched. Plywood shall be sanded smooth and fitted with tight joints between panels. Metal forms shall be of an approved type for the class of work involved and of the thickness and design required for rigid construction.
- D. Edges of all form panels in contact with concrete shall be flush within 1/32-in. and forms for plane surfaces shall be such that the concrete will be plane within 1/16-in. in 4 ft. Forms shall be tight to prevent the passage of mortar and water and grout.
- E. Forms for walls shall have removable panels at the bottom for cleaning, inspection, and scrubbing-in of bonding paste. Forms for walls of considerable height shall be arranged with tremies and hoppers for placing concrete in a





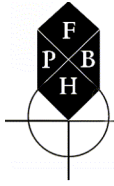
manner that will prevent segregation and accumulation of hardened concrete on the forms or reinforcements above the fresh concrete.

- F. Molding or bevels shall be placed to produce a 3/4-inch chamfer on all exposed projecting 90° corners. Similar chamfers strips shall be provided at horizontal and vertical extremities of all wall placements to produce "clean" separation between successive placements as called for on the Drawings.
- G. Forms shall be sufficiently rigid to withstand vibration, to prevent displacement or sagging between supports, and constructed so the concrete will not be damaged by their removal. The Contractor shall be entirely responsible for their adequacy.
- H. Forms, including new pre-oiled forms, shall be oiled before reinforcement is placed, with an approved non-staining oil or liquid form coating not having a paraffin base.
- I. Before form material is re-used, all surfaces in contact with concrete shall be thoroughly cleaned, all damaged places repaired, all projecting nails withdrawn, all protrusions smoothed and, in the case of wood forms, preoiled.
- J. Form ties encased in concrete shall be designed so that after removal of the projecting part, no metal shall be within 1-inch of the face of the concrete. That part of the tie to be removed shall be at least 1/2-inch diameter or be provided with a wood or metal cone at least 1/2-inch diameter and 1-inch long. Form ties in concrete exposed to view shall be the Richmond "Tyscru" cone-washer type, or approved equal.

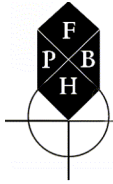
Throughbolts or common wire shall not be used for form ties.

### 3.07 PLACING AND COMPACTING

- A. Unless otherwise permitted, the work begun on any day shall be completed in daylight of the same day.
- B. Place no concrete until reinforcing, steel, pipes, conduits, sleeves, hangers, anchors, and other work required to be built into concrete have been inspected and approved by the Engineer. Remove water and foreign matter from forms and excavation. Place no concrete on frozen soil, and provide adequate protection against frost action during freezing weather. All soil preparation below slabs and footings shall be approved by the Engineer before placing concrete.



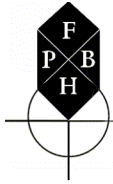
- C. Transport concrete from mixer to place of final deposit as rapidly as practicable by methods which prevent separation of ingredients and displacement of reinforcement, and which avoid rehandling. Deposit no partially hardened concrete.
- D. "Cold joints" are to be avoided unless called for on the Drawings. If they occur they are to be treated as bonded construction joints.
- E. At construction joints the surfaces of the concrete already placed, including vertical and inclined surfaces, shall be thoroughly cleaned of foreign materials, laitance, and weak concrete and roughened with suitable tools to expose a fresh face. At least two hours before and again shortly before the new concrete is deposited, the joints shall be saturated with water. After glistening water disappears, the joints shall be given a thorough coating of neat cement slurry mixed to the consistency of very heavy paste. The surfaces shall receive a coating at least 1/8-inch thick, well scrubbed-in by means of stiff bristle brushes whenever possible. New concrete shall be deposited before the neat cement dries.
- F. Deposit concrete to maintain, until the completion of the unit, a horizontal plastic surface, vertical lifts of deposited concrete shall not exceed 24-inches and preferably 18-inches.
- G. Chutes for conveying concrete shall be of U-shaped design and sized to ensure a continuous flow of concrete. Flat (coal) chutes shall be not employed. Chutes shall be metal or metal-lined and each section shall have approximately the same slope. The slope shall not be less than 25 nor more than 45 degrees to the horizon and shall be such as to prevent the segregation of the ingredients. The discharge end of the chute shall be provided with a baffle plate or spout to prevent segregation. If the discharge end of the chute is more than 5 feet above the surface of the concrete in the forms, a spout shall be used, and the lower end maintained as near the surface of deposit as practicable. When the operation is intermittent, the chute shall discharge into a hopper. Chutes shall be thoroughly cleaned before and after each run, and the debris and any water shall be discharged outside the forms. Concrete shall not be allowed to flow horizontally over distances exceeding 5 feet. Concrete Washouts as provided in the plans shall be provided and used for the cleaning of all concrete equipment. The Contractor shall ensure that concrete is not washed onto the ground or drainage ways of the park.
- H. The pumping of concrete is an acceptable method. The proposed equipment and concrete mix shall be submitted to the Engineer prior to usage for approval.



- I. In thin sections of considerable height, concrete shall be placed using suitable hoppers, spouts with restricted outlets, or otherwise, as required or approved.
- J. Concrete during and immediately after depositing shall be thoroughly compacted by means of suitable tools. Internal type mechanical vibrators shall be employed to produce required quality of finish. Vibration shall be done by experienced operators under close supervision and shall be carried on long enough to produce homogeneity and optimum consolidation without permitting segregation of the solid constituents or “pumping” or migration of air. All vibrators shall be supplemented by proper wooden spade to prevent puddling adjacent to forms and to remove bubbles and honeycomb. This is essential for the top lifts of walls. All vibrators shall travel at least 10,000 rpm and be of adequate capacity. At least one vibrator shall be used for every 10 cu. yds. of concrete placed per hour. In addition, one spare vibrator in operating condition shall be on the site.
- K. Concrete slabs on the ground shall be well-tamped into place and foundation material shall be wet tamped, and rolled until thoroughly compacted prior to placing concrete.
- L. Concrete shall be deposited continuously in layers of such thickness that no concrete will be deposited on concrete which has hardened sufficiently to cause the formation of seams and planes of weakness within the section. If a section cannot be placed continuously, construction joints may be located at points as provided for in the Drawings or as acceptable to the Engineer.
- M. Concrete Repair as noted in the plans shall include the filling of all voids behind the apparent failure of the existing concrete with a concrete mixture as noted in these specifications.

### 3.08 CURING AND PROTECTION

- A. Protect all concrete work against injury from the elements and defacements of any nature during construction operations.
- B. Concrete placed at air temperature below 40° F shall have a minimum temperature of 60° F. When the air temperature is below 40° F or near 40° F and falling, the water and aggregates shall be heated before mixing. Accelerating chemicals shall be so protected that the temperature at the surface will not fall below 50° F for at least 7 days after placing. The Contractor shall submit for acceptance by the Engineer the methods he proposes to use against low temperatures. No salt, manure, or other chemicals shall be used for protection.



- C. All concrete, particularly exposed surfaces, shall be treated immediately after concreting or cement finishing is completed to provide continuous moist curing above 50° F for at least 7 days, regardless of the ambient air temperature. Walls and vertical surfaces may be covered with continuously saturated burlap, or other approved means; horizontal surfaces, slabs, etc. in the liquid retaining structures shall be ponded to a depth of 1/2-inch or kept continuously wet by use of sprinklers.
- D. In cold weather supplementary continuous warm curing (above 50° F) shall provide a total of 350-day degrees (i.e., 5 days 70° F, etc.) of heat.
- E. Wherever practicable, finished surface and slabs shall be protected from the direct rays of the sun to prevent checking and crazing.
- F. Concrete deposited in hot weather shall have a placing temperature which will not cause a difficulty from loss of slump, flash set or cold joints, and in any case the temperature of concrete being placed shall not exceed 90° F. If necessary the Engineer may direct the Contractor to immediately cover plastic concrete with polyethylene sheeting to prevent rapid loss of moisture due to excessive ambient temperature and/or low humidity. This work will be part of the Contract price and not an extra.

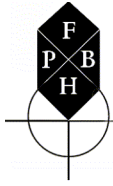
### 3.09 REMOVAL OF FORMS

- A. Except as otherwise specifically authorized by the Engineer, forms shall not be removed before the concrete has attained a strength of at least 30 percent of the ultimate strength prescribed by the design, and not before reaching the following number of day-degrees (whichever is the longer):

Beams and slabs	500
Walls and vertical surfaces	100

\*Day-degree: Total number of days times average daily air temperature at surface of concrete. For example, 5 days at a daily weighted average temperature of 60° F equal 300 day-degrees. Temperatures below 50° F not to be included.

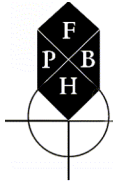
- B. Shores shall not be removed until the concrete has attained at least 60% of the specified strength and also sufficient strength to support safely its own weight and the construction live loads upon it.



### 3.10 FAILURE TO MEET REQUIREMENTS

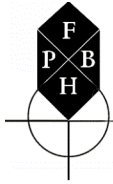
- A. Should the strengths shown by the test specimens made and tested in accordance with the above provisions fall below the values required, the Engineer shall have the right to require changes in proportions as outlined above to apply on the remainder of the work. Furthermore, the Engineer shall have the right to require additional curing on those portions of the structure represented by the test specimens which failed, the cost of such additional curing to be at the Contractor's expense. In the event that such additional curing does not give the strength required, as evidenced by core and/or load tests, the Engineer shall have the right to require strengthening or replacement of those portions of the structure which fail to develop the required strength. The cost of all such core borings and/or load tests and any strengthening or concrete replacement required because strengths of test specimens are below that specified, shall be entirely at the expense of the Contractor. In such cases of failure to meet strength requirements the Contractor and Engineer shall confer to determine what adjustment, if any, can be made in conformity with Sections 15 and 17 of ASTM Specification C94 for Ready-mixed Concrete.
- B. When the tests on control specimens of concrete fall below the required strength, the Engineer will permit check tests for strengths to be made by means of typical cores drilled from the structure in accordance with ASTM Methods C42 and C39. In case of failure of the latter, the Engineer, in addition to other recourses, may require, at the Contractor's expense, load tests on anyone of the slabs, beams, foundations, walls, and columns in which such concrete was used. Test need not be made until concrete has aged 60 days.
- C. Slabs or beams, under load test, shall be loaded with their own weights plus a superimposed load of 2 times design live load. The load shall be applied uniformly over portion being tested in acceptable manner, and left in position for 24 hours. The structure shall be considered satisfactory if deflection "D" in feet, at end of 24-hour period does not exceed value:
- D equals  $0.001 (L \times L)/t$ , in which "L" is span in feet, "t" is depth of slab or beam in inches.
- D. If deflection exceeds "D" in the above formula, the concrete shall be considered faulty unless within 24 hours after removal of the load, slab or beam under test recovers at least 75% of observed deflection.
- E. Should the strength of test cylinders fall below 60% of the required minimum 28 day strength, the concrete shall be rejected and shall be removed and replaced.





### 3.11 PATCHING AND REPAIRS

- A. It is the intent of these Specification to require forms, mixture of concrete and workmanship so that concrete surfaces, when exposed, will require no patching.
- B. As soon as the forms have been stripped and the concrete surfaces exposed, fins and other projections shall be removed, recesses left by the removal of form ties shall be filled, and surface defects which do not impair structural strength shall be repaired. Clean all exposed concrete surfaces and adjoining work stained by leakage of concrete, to approval of the Engineer.
- C. Immediately after removal of forms remove plugs and break off metal ties as required by Paragraph 3.06. Holes are then to be promptly filled upon stripping as follows: moisten the hole with water, followed by a 1/16-inch brush coat of neat cement slurry mixed to the consistency of a heavy paste. Immediately plug the hole with a 1-1.5 mixture of cement and concrete sand mixed slightly damp to the touch (just short of "balling"). Hammer the grout into the hole until dense, and an excess of paste appears on the surface in the form of a spiderweb. Trowel smooth with heavy pressure. Avoid burnishing.
- D. When patching or repairing exposed surfaces the same source of cement and sand as used in the parent concrete shall be employed. Adjust color if necessary by addition of proper amounts of white cement. Rub lightly with a fine carborundum stone at an age of 1 to 5 days if necessary to bring the surface down with the parent concrete. Exercise care to avoid damaging or staining the virgin skin of the surrounding parent concrete. Wash thoroughly to remove all rubbed matter.
- E. Defective concrete and honeycombed areas as determined by the Engineer shall be chipped down reasonably square and at least 1-inch deep to sound concrete by means of hand chisels or pneumatic chipping hammers. Irregular voids or surface stones need not be removed if they are sound, free of laitance, and firmly imbedded in the parent concrete, subject to Engineer's final inspection. If honeycomb exists around reinforcement, chip to provide a clear space at least 3/8-inch wide all around the steel. For areas less than 1-1/2-inch deep, the patch may be made in the same manner as described above for filling form tie holes, care being exercised to use adequately dry (non-trowelable) mixtures and to avoid sagging. Thicker repairs will require build-up in successive 1-1/2-inch layers on successive days, each layer being applied (with slurry, etc.) as described above. To aid strength and bonding of the multiple layer repairs, the Engineer may order the use of non-shrink, non-metallic grout.



Additives for non-shrink grout shall be as recommended by the manufacturer but shall conform to the Corps of Engineers Specification for Non-Shrink Grout, CRO-C621-82B. The grout shall consist of the following minimum cement/sand proportions:

<u>Material</u>	<u>Volumes</u>	<u>Weights</u>
Cement	1.0	1.0
Sand	1.5	1.5

- F. For very heavy (generally formed) patches, the Engineer may order the addition of pea gravel to the mixture and the proportions modified as follows: (Non-shrink additives by manufacturer)

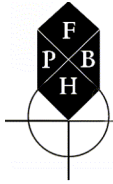
<u>Material</u>	<u>Volumes</u>	<u>Weights</u>
Cement	1.0	1.0
Sand	1.0	1.0
Pea Gravel	1.5	1.5

### 3.12 MODIFICATION AND REPAIR TO EXISTING CONCRETE

- A. Cut, repair, reuse, demolish, excavate or otherwise modify parts of the existing structures or appurtenances, as indicated on the Contract Drawings, specified, or necessary to permit completion of the work. Finishes, joints, reinforcements, sealants, etc. are specified under respective sections of Specification. All work shall conform with other requirements of this Section and details shown on the Drawings or within this section.
- B. Mix proportions of materials used in the modifications and repair to existing concrete as indicated on the drawings shall be:
1. When new material other than non-shrink grout is shown to be connected to existing concrete, use the following cement mixtures depending on the depths called for on the drawings:

- a. Less than 2" in depth

<u>Material</u>	<u>Volume</u>
Cement	1.0
Sand	2.0
Water = 5 gals/100 lbs cement	



- b. From 2" to 12" in depth

<u>Material</u>	<u>Volume</u>
Cement	1.0
Pea Gravel	2.5
Sand	2.0
Water = 5 gals/100 lbs cement	

- c. Greater than 12 " in depth

Material

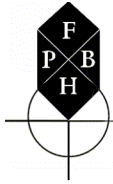
Concrete as specified under 2.01-MATERIALS in this section

2. Non-Shrink Grout - As specified under 3.11 "Patching and Repairs (E) or (F) in this section.
3. Epoxy Bonding Agent
  - a. Epoxy bonding agent shall be used on all repairs and shall be a two component epoxy adhesive specifically formulated for bonding old concrete to new (plastic) cement. Component A shall be an epoxy resin and Component B shall be an epoxy hardener. The epoxy bonding agent shall be "Sikastix 370, Sikadur Hi-Mod", by Sika Corporation, Lyndhurst NJ; "Pro bond 821 or 822" by Protex Industries, Denver, CO; "Concresive 1170" by Adhesive Engineering company, San Carlos, CA; or approved equal.
  - b. The mixing ratio shall be as recommended by the manufacturer for the ambient temperature when placed. Furnish manufacturer's specific instruction for specific job application and obtain Engineer's review prior to purchase.
  - c. Epoxy bonding agent shall conform to ASTM C-881 and corresponding tests for bond strength and shrinkage as specified in ASTM C-882, C-883, and C-884.
  - d. The properties of the cured material shall meet the following.

Compressive Strength (ASTM D-695)

48 hour - 1,000 psi

28 day - 8,500 psi



Tensile Strength (ASTM D-638)  
14 day - 4,000 psi

Bond Strength (ASTM C-882 or C-884) - 1,500 psi

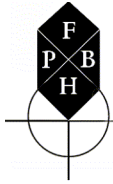
- e. Approval requirements: The Contractor must furnish notarized certification that the material proposed for use meets all of the above requirements and that the material has been previously used successfully for the purpose described.

C. Demolition of Existing Concrete

1. Concrete shown to be removed on the Drawings shall be done by line drilling or saw cutting at limits on concrete to be removed, followed by jack-hammering in areas where concrete is to be taken out. The Contractor shall be responsible for removing concrete in such a manner that surrounding concrete or existing reinforcing to be left in place, and existing in-place equipment, is not damaged. Sawcutting at limits of concrete to be removed shall be done if indicated on the Drawings, or otherwise approved by the Engineer. The Contractor shall be responsible for the means and methods used, and for temporary support where needed.
2. If rebar is cut, new Rebar shall be installed with epoxy  $\frac{3}{4}$ " from the existing cutoff reinforcement.

D. Connection to Existing Concrete

1. Roughen surface of existing concrete to be connected to new materials by sand-blasting, chipping, or scarifying. Thoroughly clean area of concrete, to receive new materials, of loose particles and dust or other contamination objects.
2. Existing reinforcing as shown on the Drawings to be left in place shall be wire brushed to remove rust or concrete on the bar. The existing reinforcing shall be cut, if lapped rebar limits are reached and tied to new rebar. New rebar shall be provided with a minimum of one inch of cover all around and at ends of the bar. The reinforcing shall be thoroughly cleaned of loose- particles and dust before incorporating in new materials.
3. New steel shall be added with existing at 12" max c-c all ways unless otherwise noted on the plans. See Section 3200 for additional information. If not shown on the plans the minimum size of the rebar shall be No. 5.



#### Connection Methods:

Method A: After existing concrete surface has been roughened and cleaned as specified above, apply epoxy bonding agent at connection surface. The field preparation and application of the epoxy bonding agent shall conform strictly with the manufacturer's recommendations. Immediately pour new cement mixture or non-shrink grout as detailed on the drawings.

Method B: Drill holes for dowels to the diameter recommended by the epoxy bonding agent manufacturer. The drilled hole shall first be filled with epoxy bonding agent, then dowels shall be inserted by tapping. These holes shall be blown clear of loose particles and dust prior to installing epoxy bonding agent. Where shown on the Drawings, expansion bolts shall be installed in place of bonded dowels. Pour new cement mixture as detailed on the drawings.

- E. Where existing reinforcing is exposed due to saw cutting and existing concrete is removed, a coating or surface treatment of epoxy protectorant shall be applied to the entire cut surface. The protectorant shall be Sikagard 62 by Sika Corporation, Duralprep A.C. by Euclid Chemical, or an approved equal. The epoxy protectorant shall be formulated for the intended application, and applied according to manufacturer's recommendations.

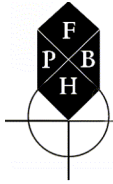
### 3.13 INSTALLATION SCHEDULE

- A. Concrete for all structures shall have minimum compressive strength at 28 days of 4,000 psi.
- B. Concrete fill and duct encasement- shall have a minimum compressive strength at 28 days of 2,500 psi.

### 3.14 FIELD CONTROL

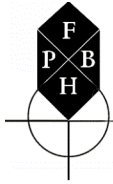
- A. The Contractor shall advise the Engineer of his readiness to proceed at least 24 hours prior to each concrete placement. The Engineer will inspect the preparations for concreting including the preparation of previously placed concrete, the reinforcing and the alignment and tightness of formwork. No placement shall be made without the inspection and acceptance of the Engineer.





- B. The Engineer may have cores taken from any questionable area in the concrete work such as construction joints and other locations as required for determination of concrete quality. The results of tests on such cores shall be the basis for acceptance, rejection or determining the continuation of concrete work.
  
- C. The Contractor shall cooperate in the obtaining of cores by allowing free access to the work and permitting the use of ladders, scaffolding and such incidental equipment as may be required. The Contractor shall repair all core holes to the satisfaction of the Engineer. The work of cutting and testing the cores will be at the expense of the Contractor.

**-END OF SECTION-**



## SECTION 03345 CONCRETE FINISHING

### **PART 1 - GENERAL**

#### 1.01 SCOPE OF WORK

- A. Furnish all labor, materials, equipment, and incidentals required to finish cast-in-place concrete surfaces as specified herein.

#### 1.02 RELATED WORK

- A. Section 03300 Cast In Place Concrete

#### 1.03 SCHEDULE OF FINISHES

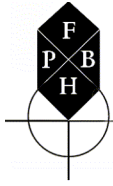
- A. Concrete for the project shall be finished in the various specified manners either to remain as natural concrete or to receive an additional applied finish or material under another section.
- B. The base concrete for the following conditions shall be finished as noted and as further specified herein:
  - 1. Exterior concrete excluding slabs and walking surfaces, and exposed interior concrete; Rubbed Finish.
  - 2. Concrete where not exposed in the finished work and not scheduled to receive an additional applied finish or material; off-form finish.

#### 1.04 RESPONSIBILITY FOR CHANGING FINISHES

### **PART 2 - PRODUCTS**

#### 2.01 MATERIALS

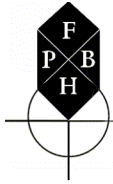
- A. Not used.



## **PART 3 - EXECUTION**

### **3.01 FORMED SURFACES**

- A. Forms shall not be stripped before the concrete has attained a strength as specified in Section 03300.
- B. Care shall be exercised to prevent damaging edges or obliterating the lines of chamfers, rustications or corners when removing the forms or doing any other work adjacent thereto.
- C. Clean all exposed concrete surfaces and adjoining work stained by leakage of concrete, to the satisfaction of the Engineer.
- D. Concrete not exposed or to be buried in the finished work shall have off-form finish with fins and other projections removed and tie cones and defects filled as specified under Section 03300. This shall include all headwall faces of headwalls that are to receive a stone veneer. However, the faces of such stone veneer headwall backers shall receive surface finish bonding agent at the time that mortar is added for the stone veneer.
- E. Rubbed Finish (to be used on all exposed headwall and wingwall faces and culvert interior surfaces);
  - 1. Immediately upon stripping forms and before concrete has changed in color, all fins shall be carefully removed with a hammer. While the wall is still damp apply a thin coat of medium consistency neat cement slurry by means of bristle brushes to provide a bonding coat within all pits, air holes or blemishes in the parent concrete; avoid coating large areas of the finished surface with this slurry.
  - 2. Before the slurry has dried or changed color, apply a dry (almost crumbly) grout consisting of one volume cement to 1-1/2 volumes of clean masonry sand having a fineness modulus of approximately 2.25 and complying with the gradation requirements of the ASTM for such a material. Grout shall be uniformly applied by means of damp (neither dripping wet nor dry) pads of coarse burlap approximately 6-in. square used as a float. Grout shall be well scrubbed into the pits and air holes to provide a dense mortar in the imperfections to be patched.



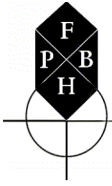
3. Allow the mortar to partially harden for one or two hours depending upon the weather. If the air is hot and dry, keep the wall damp during this period using a fine, fog spray. When the grout has hardened sufficiently so it can be scraped from the surface with the perpendicular edge of a steel trowel without damaging the grout in the small pits or holes, cut off all that can be removed with a trowel. Grout allowed to remain on the wall too long will get too hard and will be difficult to remove.
4. Allow the surface to dry thoroughly and rub it vigorously with clean dry burlap to completely remove any dried grout. No visible film of grout should remain after this rubbing. The entire cleaning operation for any area must be completed the day it is started. Do not leave grout on surfaces overnight. Allow sufficient time for grout to dry after it has been cut with the trowel so it can be wiped off clean with the burlap.
5. On the day following the repair, of pits, air holes and blemishes, the walls again shall be wiped off clean with dry, used pieces of burlap containing old hardened mortar which will act as a mild abrasive. After this treatment, there shall be no built-up film remaining on the parent surface. If, however, such is present a fine abrasive stone shall be used to remove all such material without breaking through the surface film of the original concrete. Such scrubbing shall be light and sufficient only to remove excess material without working up a lather or mortar or change the texture of the concrete.
6. A thorough wash-down with stiff bristle brushes shall follow the final bagging or stoning operation in order that no extraneous materials remain on the surface of the wall. The wall shall be sprayed with a fine fog spray periodically to maintain a continually damp condition for at least 3 days after the application of the repair grout.

### 3.02 FLOORS AND SLABS

Not used

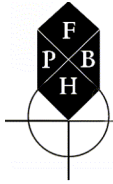
### 3.03 APPROVAL OF FINISHES

- A. All concrete surfaces, when finished, will be inspected by the Engineer.
- B. Surfaces which, in the opinion of the Engineer, are unsatisfactory shall be refinished or reworked until accepted by the Engineer.



**-END OF SECTION-**





## SECTION 03405 PRE-CAST WHEEL STOPS

### **PART 1 - GENERAL**

#### 1.01 DESCRIPTION

- A. Section includes specifications for precast concrete wheel stops for vehicular parking stalls in parking structures and parking lots as indicated.

#### 1.02 SUBMITTALS

- A. Shop Drawings: Submit shop drawings of stops, including installation details and attachment details to at-grade concrete and asphalt pavement, for approval.
- B. Product Data: Submit manufacturers' product data of precast stops and epoxy adhesive for approval.

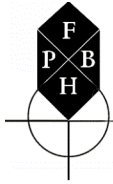
#### 1.04 QUALITY ASSURANCE:

- A. Precast wheel stops shall be manufactured for the intended purpose by a company or firm specializing in the manufacture of precast concrete parking appurtenances.
- B. When resetting existing wheel stops, verify each one is suitable for reuse, complete and whole, and without major spalling, or cracking.

### **PART 2 - PRODUCTS**

#### 2.01 MATERIALS

- A. Wheel Stops: Precast, 3.5% minimum air-entrained concrete; 4000 psi minimum compressive strength. Each stop shall be reinforced with two No. 4 deformed steel reinforcing bars, minimum. Provide chamfered corners and drainage slots on underside, and provide holes for dowel-anchoring to substrate. Unless indicated otherwise, provide stops of half octagonal configuration and 72- inch length.



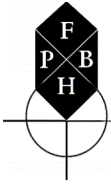
- B. Adhesive for Anchoring Stops to Parking Structure Slabs, At-Grade Concrete Pavements, and At-Grade Asphalt Pavements: Epoxy adhesive manufactured for the purpose.
- C. Adhesive for Bonding Dowel to Wheel Stop: As proposed by Contractor and approved by the Engineer, suitable for application.
- D. Steel Bars for Installation: 1/2" diameter steel dowels or No. 4 steel reinforcing bars.

### **PART 3 - EXECUTION**

#### **3.01 INSTALLATION**

- A. Securely attach wheel stops into at-grade concrete and at-grade asphalt pavement with not less than two steel dowels embedded in holes cast into wheel stops. All dowels to be driven flush or recessed to top of wheel stop.
- B. At concrete pavement, drill holes in pavement for dowels.
- C. At parking structure slabs, epoxy to slab.

**-END OF SECTION-**



**DIVISION 4**  
**MASONRY**



## SECTION 04850 DRY STACK STONE WALL REPAIR

### **PART 1 - GENERAL**

#### 1.01 SCOPE OF WORK

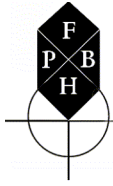
- A. Furnish all labor, materials, and equipment required to perform the work noted as Stone New – Stone Repair – and Stone Reconstruct as shown on the Drawings and specified herein.
- B. This work shall consist of removing all existing stone in order to construct new footers and drainage items, then reinstall existing whole stone, along with a mix of new stone, and portions of existing stone that can be salvaged.
- C. It is broadly estimated that 1/3 of the existing dry stack stones will need to be replaced. Contractor is responsible for determining the amount of new stone that will be required, and the amount of existing stone that can be reused in whole or in part.

#### 1.02 RELATED WORK NOT INCLUDED

- A. Division 2
- B. Concrete work is included in Division 3

#### 1.03 SUBMITTALS

- A. The Contractor shall submit to the Architect/Engineer, samples of all stone proposed for use, prior to their use. The decision as to whether proposed stone is considered acceptable rests with the sole discretion of the Engineer.
- B. The Contractor shall ensure that all work is performed by a qualified stone masons. The Contractor shall submit the qualifications of the stone masons that will be working on the project. The stone mason shall have a minimum of 10 years experience in similar type of work.
- C. Review methods and procedures related to stone repair including, but not limited to, the following:
- D. Verify stone repair specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
- E. Materials, material application, sequencing, tolerances, and required clearances.
- F. The Contractors shall make submittals in accordance with Section 01300.



#### 1.04 QUALITY-CONTROL PROGRAM:

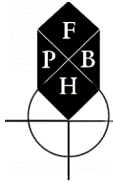
Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging masonry. Include provisions for supervising worker performance and preventing damage.

- A. Stone Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of the historic treatment work, including protection of surrounding materials and Project site.
- B. Qualifications of Personnel: Work shall be performed by first class craft persons qualified in historic masonry. Proof of adequate training and/or experience shall be furnished upon request by the Engineer. One skilled journeyman mason shall be present at all times and shall personally direct the work.

## **PART 2 - MATERIALS**

#### 2.01 STONE

1. Stone, New – Provide new stone or existing field stone in the vicinity of the work may be used if in compliance with following Sections.
2. Stone, Repair – Reuse existing stones if they can be located on site (herein referred to as reclaimed stone) and are in an acceptable condition for resetting. An acceptable condition is defined as the stone that is intact and without more than 15% chipping of the outer edges or face of the pieces, and the piece is not friable, can be cut or cleaved to match dimensional use, and can be reset without the stone further fracturing. The Contractor shall gain the approval of the Engineer for all stone that is to be reset. The Contractor shall provide new stone if missing stones cannot be located on site. At locations indicated, remove stone that has deteriorated or is damaged beyond repair or is to be reused. Carefully remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.
3. Stone, Reconstruct – Use existing stone from the existing wall and reuse the stone for the wall reconstruction. Stones shall be rearranged as close as possible to the existing pattern.



4. Stone Pattern: - The repair shall closely match the existing bedding and striations. Old stone, new stone, and reclaimed or recut stone shall be intermixed in a random pattern when reset in order to provide a natural appearance, with weathering over time providing a uniform look. An entire section of new stone will not be accepted.
5. Repaired surfaces are to have a uniform appearance as viewed from 50 feet away.

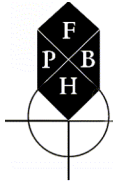
## 2.02 DELIVERY, STORAGE, AND HANDLING

- A. Deliver new stone to Project site strapped together in suitable packs or pallets or in heavy-duty crates and protected against impact and chipping.
- B. Handle all stone to prevent overstressing, chipping, defacement, and other damage.

## 2.03 PERFORMANCE REQUIREMENTS

- A. Source Limitations: Obtain each type of material for repairing historic masonry from single source with resources to provide materials of consistent quality in appearance and physical properties.
- B. Stone Matching Existing: Natural building stone of variety, color, texture, grain, veining, finish, size, and shape that match existing stone and with physical properties of selected existing stone.
  1. For existing stone that exhibits a range of colors, textures, grains, veining, finishes, sizes, or shapes, provide stone that proportionally matches that range rather than stone that matches an individual color, texture, grain, veining, finish, size, or shape within that range
- C. Quarrying New Stone: Have quarry clearly label the direction of rift or bedding planes when rough stone is quarried, to facilitate cutting stones so that natural bedding planes are as required.
- D. Cutting New Stone: Regardless of how existing stone was cut and set, cut each new stone so that, when it is set in final position, the rift or natural bedding planes match the rift orientation of existing stones and are predominantly horizontal.
- E. Do not use products or tools that could do the following:





- a. Remove, alter, or harm the present condition or future preservation of existing surfaces, including surrounding surfaces not in contract.
  - b. Leave residue on surfaces.
- F. Store stone for reuse. Store off ground, on skids, and protected from weather.

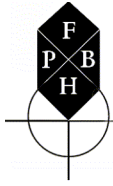
## **PART 3 - EXECUTION**

### 3.01 WORK SEQUENCE

Work shall be conducted as follows: Perform stone repair work in the following sequence, which includes work specified in this and other Sections

### 3.02 CLEANING

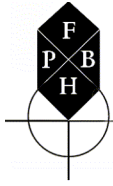
- A. Remove plant growth.
1. Removing Plant Growth: Completely remove visible plant, moss, and shrub growth from masonry surfaces. Carefully remove plants, creepers, and vegetation by cutting at roots and allowing remaining growth to dry as long as possible before removal. Remove loose soil and plant debris from open masonry joints to whatever depth they occur.
  2. Apply cold water by intermittent spraying to keep surface moist.
  3. Use perforated hoses or other means that will apply a fine water mist to entire surface being cleaned.
  4. Apply water in cycles.
  5. Continue spraying until surface encrustation has softened enough to permit its removal by water wash, as indicated by cleaning tests.
  6. Remove soil and softened surface encrustation from surface with cold water applied by low-pressure spray.
  7. Repeat cleaning procedure, where needed to produce cleaning effect established by mockup.
- B. Mold, Mildew, and Algae Removal:
1. Wet surface with water applied by low-pressure spray.
  2. Apply mold, mildew, and algae remover by brush or low-pressure spray.



3. Scrub surface with medium-soft brushes until mold, mildew, and algae are thoroughly dislodged and can be removed by rinsing. Use small brushes for mortar joints and crevices. Dip brush in mold, mildew, and algae remover often to ensure that adequate fresh cleaner is used and that surface remains wet.
4. Rinse with water applied by low-pressure spray to remove mold, mildew, and algae remover and soil.
5. Repeat cleaning procedure, where needed to produce cleaning effect established by mockup.

### 3.03 MOCK-UP SECTION

- A. Samples for Verification: For the following:
  - B. Each type of replacement stone. Include sets of Samples to show full range of color, texture, grain, veining, and finish to be expected. Provide sets of at least three Samples for each type, but no fewer than necessary to indicate full range and the proportion of variations within range.
  - C. Mockups: Prepare mockups of historic treatment to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation.
  - D. Stone Repair: Prepare sample areas for each type of stone indicated to have repair work performed. If not otherwise indicated, size each mockup not smaller than two adjacent whole units or approximately 48 inches in least dimension. Construct sample areas in locations in existing walls unless otherwise indicated. Demonstrate quality of materials, workmanship, and blending with existing work.
  - E. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
  - F. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
  - G. Face Bedding: Setting of stone with the rift or natural bedding planes (strata) vertical and parallel to the wall plane rather than horizontal or "naturally bedded," which holds bedding planes together by gravity.



### 3.04 STONE HEADWALL, NEW

- A. Regardless of the stone size the face of the reconstructed wall shall be flush vertical with minor variations needed to obtain an historical look. The wall and stone courses shall be set level with uniform horizontal joints.

### 3.05 STONE HEADWALL, REPAIR

- A. The Contractor shall remove any damaged and loose mortar, foreign material and stone and set new or reclaimed stone from the site into the area to be repaired. The Contractor shall ensure that the dimensions of the repair stone allow for horizontal joints that will match the existing joints.

### 3.06 STONE HEADWALL, RECONSTRUCT

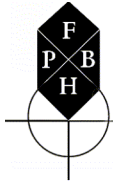
- A. The Contractor shall remove the existing stone wall in such a manner as to prevent existing stone from being damaged. The Stone will be placed in a storage area on site in such a manner and location that will prevent damage to the removed stone. The removed stone shall be reset on to the new concrete footer as close as possible to the original pattern. Each removed stone shall be examined to ensure that it will be acceptable for reuse during the reconstruction. All stone that is considered unsuitable for resetting due to fracturing during removal shall remain on site for use and may be field cut and shaped for use at another site on the project where the stone may be of some use in repairs.
- B. Reclaimed stone may require field cutting or cleaving to match required dimensions. The wall and stone courses shall be set level with uniform horizontal joints.

### 3.07 FIELD CUTTING OF EXISTING STONE

- A. Field stone that exists on site that is either to be reset, or re-laid into a new, repaired or reconstructed wall may be cut down in dimension to fit into the new wall; however all field cuts will take place in such a way that the surface that is to be cut will not be placed on the exposed face of the headwall. Hand tools or mechanical means may be used to achieve field cutting. If field cutting of the existing stone consistently results in fracturing or damaging of the existing stone to such an extent that only 20% of the stone remains, then the piece can not be reused.

### 3.08. SETTING STONES

1. Remove in an undamaged condition as many whole stone units as possible.
2. Remove mortar, loose particles, and soil from stone by cleaning with hand chisels, brushes, and water.



3. Remove sealants by cutting close to stone with utility knife and cleaning with solvents.
4. Store stone for reuse. Store off ground, on skids, and protected from weather.
5. Deliver cleaned stone not required for reuse to Owner unless otherwise indicated.
6. Clean masonry surrounding removal areas by removing mortar, dust, and loose particles in preparation for stone replacement.
7. Replace removed damaged stone with other removed stone and salvaged stone in good condition, where possible, or with new stone matching existing stone. Do not use broken units unless they can be cut to usable size.
8. Before setting, inspect to verify that each stone has been cut so that, when it is set in final position, the rift or natural bedding planes are predominantly horizontal.
9. Install stone on concrete step footers into bonding and coursing pattern of existing stone. If cutting is required, use a motor-driven saw designed to cut stone with clean, sharp, unchipped edges. Finish edges to blend with appearance of edges of existing stone.
10. Maintain joint width for replacement stone to match existing joints.

**-END OF SECTION-**