SURVEYOR'S REPORT
FOR PARTIAL RECONSTRUCTION OF
BIG CICERO CREEK OPEN DRAIN SYSTEM

The Big Cicero Creek Joint Drainage Board, having referred the above stated regulated drain for reconstruction of to me for preparation of the reconstruction report, I submit the following specifications. The proposed work is to complete a channel improvement project by constructing a "two-stage ditch" along portions of both sides of the existing channel. The channel improvement would extend from about 2800' downstream of the intersection with the Tobin Ditch, to approximately 2000' feet west of County Road 200 West, which is upstream. The estimated cost of 13,700 linear feet project is about $ 4.7 million.

As Big Cicero Creek is a "legal drain", it is afforded the right of a statutory 75' easement (Indiana Code 36-9-27-33), as measured from the Top of each Bank for the creek. All proposed improvements will be done within this easement, therefore no damages or compensation to the landowners along the project is required or proposed.

Costs included in the estimate include Site Preparation, Channel Improvements, Bridge & Trail Replacement, Site Restoration along with Miscellaneous Items related to the construction. As a part of this report, I would recommend that no additional assessments be sought, that the project should be funded by an outside source, with repayment occurring from a portion of the current revenue stream that is captured under the maintenance assessment for the drain; at terms and schedule approved by the board.

The estimated cost is based on plans completed by Christopher Burke Engineering, as directed by the board; a portion of said plans are attached hereto and hereby made a part of this report.

The proposed work would involve the clearing of brush, trees, woody vegetation and deadfall from portions of the channel and banks. The channel would then be excavated (3' above existing channel invert) to the new grades designated on the plans. The shelf would have a 1% slope towards the ditch and would slope at 2:1 back to the existing grade throughout the project. The spoils would be removed by the contractor and disposed of in a manor as to not be placed back in any flood plain. All disturbed areas of bank slopes would then be seeded and fertilized. All tiles entering the channel that need the existing outlet replaced would be fitted with appropriate sized corrugated, non-perforated, smooth core pipe ends and animal guards. Surface water will be routed through riprap chutes and additional riprap shall be placed where bank protection is required, as deemed necessary by the Surveyor.

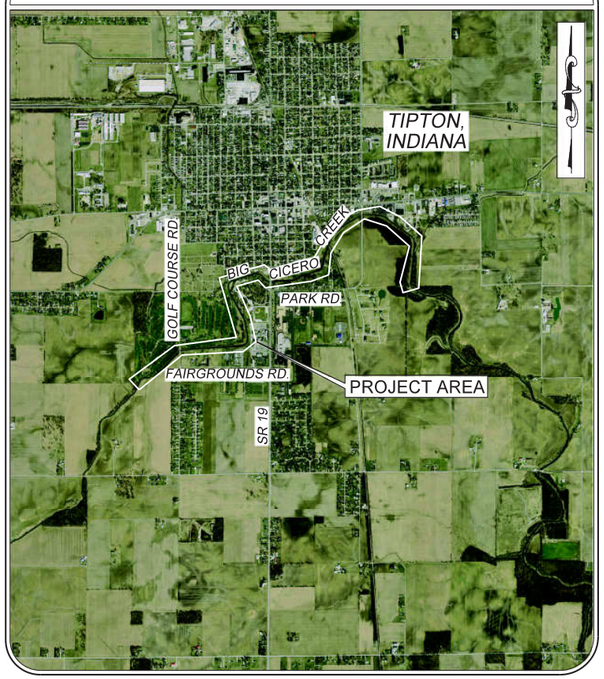
Respectfully Submitted,

Jason R. Henderson PS
Tipton County Surveyor
8-16-17

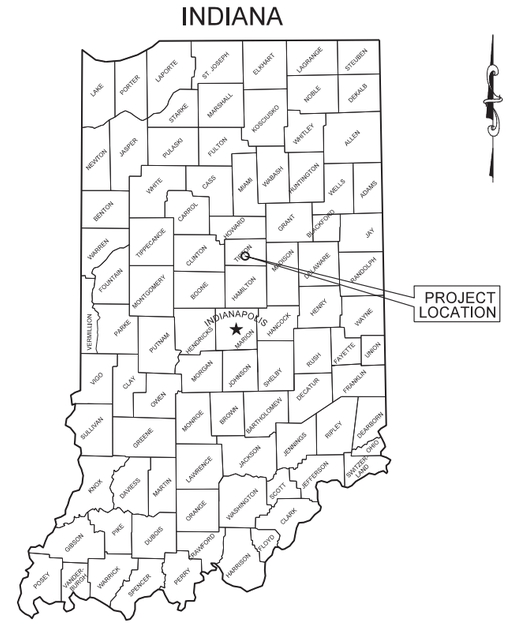
BIG CICERO CREEK
BANK STABILIZATION

TIPTON COUNTY, INDIANA

VICINITY MAP



LOCATION MAP



SHEET INDEX

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DRAINAGE BOARD MEMBERS

Mark Heirbrandt	President
Byron Loveless	Vice President
Jay Rayl	Treasurer
Bert Weaver	Member
Brad Bagwell	Member
Heather Terry	Secretary

UTILITY CONTACT INFORMATION

WATER, STORM, SEWER, ELECTRIC

TIPTON UTILITIES
REX BOYER
(765) 675-7629

GAS

VECTREN
(765) 648-3200

COMMUNICATIONS, TELEPHONE

TDS
(765) 339-7221

PREPARED FOR:

BIG CICERO CREEK JOINT DRAINAGE BOARD
101 East Jefferson Street
Tipton, Indiana 46072

PREPARED BY:

CHRISTOPHER B. BURKE ENGINEERING, LLC
PNC Center, Suite 1368 South
115 West Washington Street
Indianapolis, Indiana 46204
Phone: (317) 266-8000 FAX: (317) 632-3306

CERTIFIED:

BRIAN J. MEUNIER REGISTERED PROFESSIONAL ENGINEER INDIANA
95% PLANS

ENGINEER DATE

BRIAN J. MEUNIER, P.E.
INDIANA REGISTRATION No. PE11300321
EXPIRATION DATE: JULY 2018

BIG CICERO CREEK
BANK STABILIZATION

TIPTON COUNTY, INDIANA

11/22/2016
Project 19.R150188.00000

Indiana 811
Know what's below. Call before you dig.

11/22/2016
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GENERAL NOTES

1. CONTRACTOR shall not perform work on any day between the hours of 7:00 p.m. to 7:00 a.m. or on Sunday and Holdays without prior approval from OWNER.
2. There shall be no storage of equipment, materials, debris, soil, etc. in streets, parking areas, or the public right-of-way without written permission from Tipton County.
3. There shall be no storage of equipment, materials, debris, soil, etc. within the floodway of Big Cicero Creek.
4. Coordinate locations for all required access with OWNER and ENGINEER.
5. CONTRACTOR shall minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during construction operations. CONTRACTOR shall not close or obstruct streets, walks, parking areas, or other adjacent occupied or used facilities without permission from OWNER and authorities having jurisdiction. CONTRACTOR may cross roads and streets during the performance of the work, if necessary, at the approval of OWNER and Tipton County. CONTRACTOR shall protect all roads and streets at heavy-equipment crossings as needed to protect pavement. CONTRACTOR shall provide road barriers and/or a flag person to control traffic during all times when construction equipment is crossing public roads or when otherwise warranted.
6. CONTRACTOR shall be responsible to secure the construction site against unauthorized entrance by persons and vehicles outside of and during working hours. The cost of any additional security measures deemed necessary by CONTRACTOR shall be incidental to the contract. If CONTRACTOR fails to maintain security or safety measures at the project site, OWNER may at the expiration of a period of 48 hours, after having given CONTRACTOR written notice, proceed to provide additional measures as deemed necessary, and the cost thereof shall be deducted from any compensation due, or which may become due to CONTRACTOR under this contract.
7. CONTRACTOR shall allow OWNER, ENGINEER, OWNER'S REPRESENTATIVE(s), and other contractors working for OWNER access to the site at all times.
8. If CONTRACTOR finds a conflict, error or discrepancy in the construction documents or plans, CONTRACTOR shall report it immediately to ENGINEER in writing or by email before proceeding with the work affected thereby and shall obtain a written interpretation or clarification from ENGINEER.
9. All work shall be constructed in accordance with the lines and grades shown on the plans. The full responsibility for keeping alignment and grade shall rest upon CONTRACTOR at no additional cost to OWNER.
10. CONTRACTOR shall be fully responsible to OWNER for all acts and omissions of his SUB-CONTRACTORS, suppliers, and other persons and organizations performing or furnishing any of the work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR'S own acts and omissions. CONTRACTOR shall assume sole obligation for the payment of any monies due to any SUB-CONTRACTOR, supplier, or other person or organization, except as may be otherwise required by laws and regulations.
11. CONTRACTOR shall obtain permission from the necessary stakeholders for all work performed outside of OWNER'S right-of-way.
12. CONTRACTOR shall stake out and mark limits of construction so they are clearly visible. All construction activities shall be performed within the designated construction limits.
13. OWNER does not bear any responsibility for the cost of injuries to CONTRACTOR, SUBCONTRACTOR, or employees injured during the course of the contract. CONTRACTOR shall be responsible for the transport of injured employees needing medical or other attention.
14. CONTRACTOR shall, at all times, keep the premises free from accumulation of waste materials or rubbish caused by his/her employees or work and prevent the spread of debris during windy conditions. At the completion of work, CONTRACTOR shall leave the premises in a neat, clean, and orderly fashion.
15. CONTRACTOR shall power wash any mechanical equipment or vehicle to be used on the job site to remove all mud and debris prior to unloading on the site. No other vehicles/machines shall be permitted in the project area. All other equipment or project-related vehicles must be parked in specified parking areas.
16. CONTRACTOR shall immediately remove mud tracked by vehicles onto the public roadways when the road is in use, otherwise, before a closed section is returned to service.
17. Temporary traffic control is the responsibility of the CONTRACTOR. The CONTRACTOR shall coordinate with Tipton County and/or other authorities having jurisdiction to determine exact traffic control requirements.
18. Shop drawings or product certification information of all constructed or supplied project materials shall be submitted to OWNER or ENGINEER for review prior to implementation or installation. Shop drawings are required for the following project components: permanent and temporary seed mixes, hydromulch, aggregates, riprap, geotextile, borrow source (if applicable), and geotechnical testing information.
19. Upon substantial completion and again at final completion of construction, prior to demobilization, CONTRACTOR shall ensure that all excess construction materials and debris, including soil, aggregate, trash, temporary erosion control measures, and miscellaneous construction materials are removed from the project site and disposed of properly. All disturbed areas shall be restored to the satisfaction of OWNER and ENGINEER.
20. Upon completion of the work and prior to acceptance of the project, CONTRACTOR shall be required to furnish the ENGINEER with one set of marked-up prints showing the as-built location of improvements, field changes, and details not on original drawings.
21. CONTRACTOR shall attend a pre-construction meeting at the project site prior to beginning work.
22. CONTRACTOR shall submit a project schedule for review by OWNER and ENGINEER prior to beginning work. Submit revised schedules with each application for payment.
23. CONTRACTOR shall attend monthly progress meetings throughout the course of work at a location mutually agreed upon by OWNER, ENGINEER, and CONTRACTOR.
24. CONTRACTOR shall take photographs of the site and construction throughout progress of work, acceptable to ENGINEER. Submit photographs with each application for payment electronically in JPEG format.
25. CONTRACTOR shall provide, maintain, and pay for temporary facilities and utilities as required to complete the work. Remove temporary facilities prior to the application for final payment.
26. CONTRACTOR shall restore existing and permanent facilities used during construction to original condition or as otherwise specified.
27. Substitutions will only be considered within 15 days after the date established in the notice to proceed unless a product becomes unavailable through no fault of the CONTRACTOR. The burden of proof for establishing a substitute as equal or superior is upon the CONTRACTOR.

CONSTRUCTION NOTES

1. CONTRACTOR shall clearly mark all underground utilities, culverts, and underground drains prior to construction.
2. Responsibility for the repair of utilities and structures when broken or otherwise damaged shall be borne by CONTRACTOR. Materials damaged by CONTRACTOR during handling or placement operations shall be replaced in-kind by CONTRACTOR at CONTRACTOR'S sole expense. Such damaged materials shall be removed from the site by CONTRACTOR.
3. CONTRACTOR shall deploy suitable equipment for the excavation, compaction, and grading of soil to construct the work. CONTRACTOR shall perform excavation to the lines and grades shown on the plans.
4. Positive drainage shall be provided and maintained at all times. CONTRACTOR shall be responsible for all costs associated with dewatering of any excavation in order to provide positive drainage and any costs associated with the disposal of such water.
5. Provide sheeting, shoring, bracing, or other protection measures as required to maintain safe excavations. Sloping or benching for excavations greater than twenty (20) feet shall be designed by a registered professional engineer.
6. All non-native fill material shall be approved by the ENGINEER prior to placement.
7. On-site excavated soils, except topsoil, may be considered suitable for fill provided proper moisture content is maintained during placement and subject to inspection and approval by the ENGINEER. A portion of the excavated soils may exhibit natural moisture content above optimum moisture. These soils may require air-drying and/or chemical modification prior to placement.
8. Topsoil is not suitable for use as fill material unless approved by ENGINEER.
9. Uniformly grade areas to create a smooth surface to the cross-sections, lines, and elevations indicated on the drawings. Provide a smooth transition between existing grades and new grades.
10. Topsoil shall be placed in one loose lift in all areas where the underlying soils will not support vegetative growth. If adequate topsoil volumes are not available from on-site sources, CONTRACTOR shall amend available soil to produce a suitable growth medium or import topsoil from offsite. The final surface shall be graded smooth to final design grades. All significant surface variations, including vehicle tire or equipment track ruts, shall be smoothed out with a grader box or other method. Final grading performed by dozers shall be done in a manner such that the track cleats are oriented parallel to the contours to minimize runoff velocity down the slope and to help maintain moisture in the topsoil.

DEMOLITION NOTES

1. CONTRACTOR shall be responsible for the protection of all facilities during the entire period of service. Any damages to the existing facilities, roads, or other property caused by CONTRACTOR or SUBCONTRACTOR shall be repaired at CONTRACTOR's expense and in a manner and schedule approved by OWNER.
2. All large trash/debris within excavator reach from the bank shall be removed from the channel.
3. Open burning is not permitted onsite.
4. Items noted or otherwise identified to be salvaged (if any) shall be returned to OWNER in the original condition.
5. Notify ENGINEER immediately upon the discovery of any hazardous materials.
6. Protect and maintain survey benchmarks from disturbance.
7. Protect existing vegetation, structures, utilities, and other items to remain.
8. All demolition items shall be removed from the site at CONTRACTOR'S expense and disposed of in accordance with all local, state and federal regulations.
9. Regularly clean-up and remove demolished materials from the site so that they do not accumulate.

PERMITTING NOTES

1. The OWNER will obtain the following permits for this project:
   a. Indiana Department of Natural Resources Construction in a Floodway Permit.
   b. Indiana Department of Environmental Management Section 401 Water Quality Certification.
   c. United States Army Corps of Engineers Section 404 Permit.
   d. Indiana Department of Environmental Management Rule 5 Permit.

   Copies of all permits obtained will be provided to the CONTRACTOR by the OWNER. The CONTRACTOR is responsible for compliance with permit conditions and requirements. The CONTRACTOR shall be responsible for obtaining all other permits and/or licenses as required by law/ordinance or regulation.
2. Do not work in the waterway from April 1 through April 30 without prior written approval from the Indiana Department of Natural Resources Division of Fish and Wildlife.
3. Do not cut any trees suitable for Indiana bat roosting (greater than 3-inches DBH, living or dead, with loose hanging bark) from April 1 to September 30.

UTILITY NOTES

1. CONTRACTOR shall call the Indiana Underground Plant Protection Service ("Indiana 811") by dialing 811 at least 48 hours prior to commencement of land-disturbing activities to schedule a utility locate. It is CONTRACTOR'S responsibility to verify the location of all existing utilities and to report any discrepancies or omissions with the existing utilities shown on the plans to ENGINEER immediately.
2. CONTRACTOR shall protect all existng utilities as required to prevent damage.
3. All utilities must be fully operational and accessible throughout the project unless otherwise coordinated with and approved by OWNER, ENGINEER, and utility company at least two (2) days in advance of the proposed interruption.
4. Any and all damage to existing utilities must be repaired in kind at CONTRACTOR'S expense.

GENERAL CONSTRUCTION SEQUENCE

This General Construction Sequence has been assembled for project guidance and may be adjusted to meet the CONTRACTOR'S specific plans. However, the sequence of steps 1 through 4 shall not be altered. The CONTRACTOR shall generally perform the following steps to complete the project.

1. Stake the construction limits.
2. Locate, mark, and protect all existing utilities.
3. Construct staging area and construction entrance.
4. Install temporary erosion control measures as indicated on the drawings.
5. Perform necessary clearing and grubbing.
6. Excavate and grade banks as indicated on the drawings.
7. Stabilize all disturbed areas of the project that are completed, as work proceeds, with temporary or permanent seeding as indicated by the seeding schedule provided. Temporary seeding shall be applied during the winter months, with permanent seeding occuring during the optimum seeding dates.
8. Remove temporary erosion control measures upon OWNER'S approval and after vegetation is established and approved by the ENGINEER.
9. Perform post construction maintenance on new vegetation as necessary.

EROSION & SEDIMENT CONTROL NOTES

1. The temporary erosion control systems installed by CONTRACTOR shall be properly maintained as indicated on the plans or as directed by OWNER or ENGINEER to control erosion and siltation at all times during the life of the contract. This work shall include repair of the various systems, removal of trapped sediment, and cleaning or replacement of erosion control measures. Accumulated silt in the work area shall be removed from the site as an incidental cost to the project or shall be used on-site if approved by OWNER. Any additional materials and work required by ENGINEER to control erosion shall be measured and paid for as specified. If CONTRACTOR fails to maintain the erosion control systems as directed by ENGINEER, OWNER may at the expiration of a period of 48 hours, after having given CONTRACTOR written notice, proceed to maintain the systems as deemed necessary, and the cost thereof shall be deducted from any compensation due to CONTRACTOR.
2. CONTRACTOR shall install temporary erosion control measures as indicated on the erosion control plans prior to commencement of land-disturbing activites.
3. Additional erosion control measures may be required as conditions warrant.
4. CONTRACTOR shall repair erosion damage to the finished surfaces at no additional cost to OWNER.
5. CONTRACTOR shall perform post-construction maintenance on new vegetation for a period of one (1) year from substantial completion. If the condition of vegetation is not acceptable at the end of the one (1) year period, the CONTRACTOR shall continue maintenance and/or re-seed until conditions are acceptable to the OWNER.

PROJECTION & DATUM INFORMATION

Coordinate System: NAD 83 Indiana State Plane East Zone
Vertical Datum: NAVD 88
Units: U.S. survey feet.

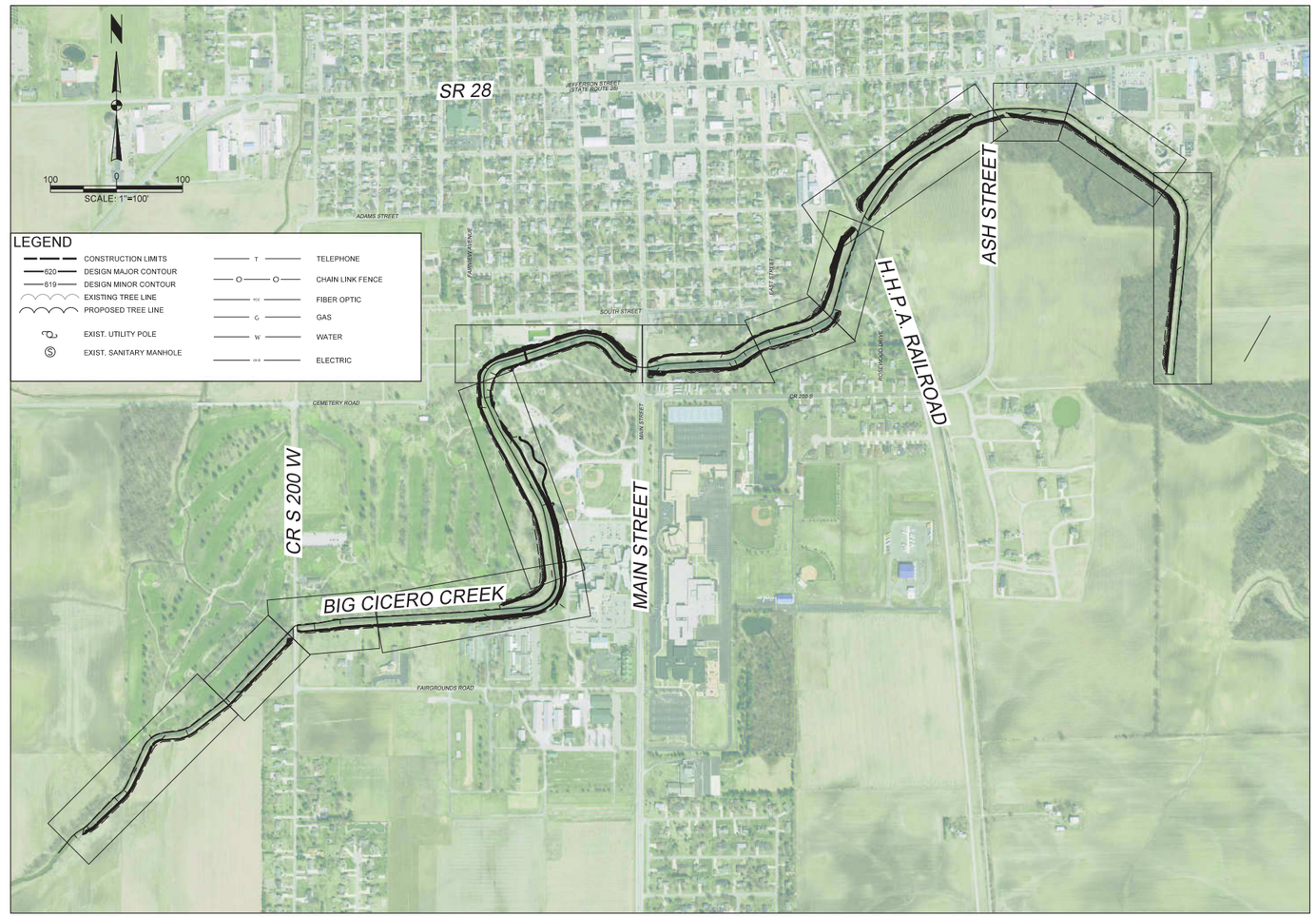
GPS CONTROL
Control was established using the National Geodetic Survey's On-Line Positioning User Service (OPUS) in conjuction with a GPS survey of the local control points near the site. GPS-RTK was used to collect topogiaphic data and planimetric features within the survey limits, where possible. Detailt regarding the base station control point and its NGS-CPUS solution are as follows:

OPUS Pt#100: Capped Iron Rebar Set
SPCS Northing: 1826259.335'
SPCS Easting: 219965.547'
NAVD88 Elevation: 859.42' (Established from BM D-207)
Latitude: N 40^ 15' 42.051" (NAD83)
Longitude: W 86^ 03' 14.660" (NAD83)

CORS BASE STATIONS USED FOR OPUS SOLUTION

CODE	DESIGNATION	LATITUDE	LONGITUDE
IUCO	INDIANA UNIV. CORS	N 39^10'26.605"	W 86^30'23.183"
OHMR	MERCER CO. CORS	N 40^32'45.583"	W 84^37'50.637"
OHDR	DARKE CO. CORS	N 40^05'58.258"	W 84^36'35.266"

BENCHMARK INFORMATION
BM D-207
Elev: 879.71' (NAVD88)
NGS (USC&GS) Brass Disk stamped "D207 1946"
Described per NGS Datasheet:
About 2.7 miles west along SR 28 from the courthouse at Tipton, at a north-south gravel road intersection 69 feet and across the highway from a 24-inch brick corner fence post, 40 feet south of the centerline of the highway, 16 feet east of the centerline of the gravel road, 18 feet north of a telephone pole, 9 feet south of a 12-inch round concrete fence corner post, about 1 foot above the highway, and set in the top of a concrete post projecting 6 inches.



CHRISTOPHER B. BURKE ENGINEERING, LLC.
PNC Center, Suite 1368 South
115 West Washington Street
Indianapolis, Indiana 46204
(317) 266-8000 FAX: (317) 632-3306

PROJECT:

BIG CICERO CREEK
BANK STABILIZATION

TIPTON COUNTY, INDIANA

NO.	DATE	NATURE OF REVISION	CHKD.
E	11/03/16	95% DESIGN	BWM
D	10/11/16	50% DESIGN	BWM
C	1/22/2016	PRELIMINARY SHELF LAYOUT - REVISION 2	BWM
B	12/22/2015	PRELIMINARY SHELF LAYOUT - REVISED	BWM
A	10/27/2015	PRELIMINARY SHELF LAYOUT	BWM

FILE NAME: R:\2015\15-0188.00000\Work Hub\Design\150188_GN1.dgn

DSGN.		BJM
DWN.		KMB
CHKD.		BWM
SCALE:	AS NOTED	
DATE:	11/22/2016	

BRIAN J. MEUNIER REGISTERED PROFESSIONAL ENGINEER INDIANA
95% PLANS

TITLE:

GENERAL NOTES
AND SITE PLAN

PROJECT NO. 15-0188.00000
SHEET 2 OF 31
DRAWING NO. GN1