

# **AGENDA**

## **LAKE COUNTY DRAINAGE BOARD and ADVISORY COMMITTEE WEDNESDAY, SEPTEMBER 21, 2016**

Advisory Committee Meeting-8:00 A.M.      Drainage Board Meeting-9:00 A.M.  
*Both Meetings Held in the Commissioner's Courtroom, Lake County Government Center  
2293 North Main Street, Crown Point, IN 46307 Phone-219-755-3745 Fax 219-755-3750*

### **Lake County Drainage Board**

Gerry J. Scheub, Chairman  
Michael C. Repay, Member  
Kyle W. Allen, Sr., Member  
Peter Katic, Drainage Board Attorney

### **Technical Support**

Bill Emerson Jr., Lake County Surveyor  
Daniel V. Gossman, Drainage Administrator  
Rich Budziak, MS4 Coordinator  
Clifford E. Duggan Jr., Legal Consultant  
Mary Ellen Kupsik, Drainage Board Secretary

**NOTE:** All motions and votes by the Advisory Committee are recommendations to the Lake County Drainage Board and are not final actions. The Lake County Drainage Board is the agency having the authority to act under Indiana Statute.

#### **1. Meeting Called to Order – Pledge of Allegiance**

**A. Emergency Exit Announcement:** In case of emergency, exit the Commissioners Courtroom and proceed to the stairs and go to the second floor and exit the building. Do not enter an elevator in an emergency. If you require assistance, an employee will escort and/or assist you. Please silence any cellular telephones during this meeting. If you receive a call/text during this meeting, please excuse yourself with as little disruption as possible.

#### **2. Roll Call**

#### **3. Agenda**

- A. Additions, Deletions, and/or Corrections**
- B. Permission to Open Bids/Proposals**

#### **4. Minutes**

- A. August 17, 2016**

#### **5. Reports – Correspondence – Information for the Record**

- A. Advisory Committee By Township**

## **B. Little Calumet River Watershed**

1. Letter from Indiana Department of Transportation regarding "slip lining" an existing culvert on I-65, 0.47 miles north of US 30.
2. Indiana Department of Natural Resources (IDNR) "Certificate of Approval" to City of East Chicago regarding beach and dune restoration at Jeorse Park Beach.
3. **Spring Street Ditch, Highland, North Twp.**
  - Letter from Spring Creek Condominium Association to County Surveyor regarding nuisance trees.
  - Previous letter from Drainage Administrator Dan Gossman to County Surveyor Bill Emerson, Jr. regarding same concern.
4. **Schererville Ditch/Dyer Ditch/Teibel Ponds, Schererville, St John Twp.**
  - Letter from Attorney Daniel Blaney to County Surveyor Bill Emerson, Jr. regarding Stonebridge Estates drainage with Teibel Ponds.
  - Response letter from Drainage Administrator Dan Gossman to Attorney Blaney.
5. Letter/Report from Asst Drainage Administrator Tom Regalado to County Surveyor Bill Emerson, Jr. regarding Clearing & Snagging Crew activity.
6. Other.

## **C. Kankakee River Watershed**

1. **Founders Creek, Cedar Creek Twp.**

Letter from County Surveyor Bill Emerson, Jr. to US Army Corps of Engineers regarding Feasibility Report.
2. Indiana Department of Natural Resources (IDNR) "Certificate of Approval" for "Construction in a Floodway" to Cedar Lake Enhancement Association regarding bank stabilization on an inlet.
3. Letter from Drainage Administrator Dan Gossman to County Surveyor Bill Emerson, Jr. and Drainage Board Chairman Gerry Scheub regarding drainage in Pheasant Ridge Unit 2.
4. **Griesel Ditch Lateral No. 14, Cedar Creek Twp.**
  - Letter from Lowell MS4 Coordinator Greg White to County Surveyor Bill Emerson, Jr. regarding schedule of cleaning for Griesel Lateral No. 14.
  - Response letter from County Surveyor Bill Emerson, Jr. to Greg White.
5. **Stoney Run Ditch East Branch, Winfield & Eagle Creek Twps.**
  - Letter from Lakes of the Four Seasons Community Manager Richard Cleveland to County Surveyor Bill Emerson, Jr. regarding the drawdown of Lake Holiday into Stoney Run Ditch.
  - Letter from Drainage Administrator Dan Gossman to County Surveyor Bill Emerson, Jr. regarding conditions for the LOFS drawdown of Lake Holiday into Stoney Run.
6. Letter/Report from Asst Drainage Administrator Tom Regalado to County Surveyor Bill Emerson, Jr. regarding Clearing & Snagging Crew activity.
7. Other

## **D. Current Projects - Little Calumet River Watershed**

1. **Hart Ditch, St John Twp.** (State Line to US Highway 30, - Dyer)
2. **Niles Ditch, Center & Winfield Twps.** (113<sup>th</sup> to Gibson Street)
3. **Cady Marsh Ditch - Highland, North Twp.** (Hart Ditch to Cline Ave, Highland)
4. **Turkey Creek Lateral No. 13 – Bank Stabilization, Schererville, St John Twp.**
5. **Main Beaver Dam Ditch, Center Twp.** (1423 Edgewater Road, Crown Point)
6. **Other**

# MINUTES

## LAKE COUNTY DRAINAGE BOARD WEDNESDAY, AUGUST 17, 2016

Advisory Committee Meeting-8:00 A.M.      Drainage Board Meeting-9:00 A.M.  
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### 1. Meeting Called to Order – Pledge of Allegiance

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### 2. Roll Call

Members Present: Chairman Gerry Scheub and Board Member, Michael C. Repay, Board Member Kyle W. Allen, Sr. [3 Present, 0 Absent]. Also Present: Lake County Surveyor Bill Emerson, Jr.; Lake County Drainage Administrator, Dan Gossman; Drainage Board Attorney, Peter Katic; Lake County Drainage Consultant Clifford E. Duggan, Jr.; Drainage Board Secretary, Mary Ellen Kupsik; North Watershed Engineering Consultant, Don Oliphant of Christopher B. Burke Engineering; and South Watershed Engineering Consultant, and Jeremy Schmitt, American Structurepoint.

### 3. Agenda

#### A. Additions, Deletions, and/or Corrections

Dan Gossman requested the following additions to the Agenda. Item Nos. 6-A & C, CBBEL review letters; Item No. 6-B, ASI review letter, and Item No. 9-A-1, Plans and Specifications for

Turkey Creek Bank Stabilization, Joliet Street to James Wittchen Drive. Motion to accept and approve the above-stated additions was made by **Michael C. Repay**, seconded by **Kyle W. Allen, Sr.** Motion carried 3-0.

#### **B. Permission to Open Bids/Proposals**

**Chairman Gerry Scheub** requested permission for **Attorney Peter Katic** to open bids under Item No. 10-A-1 below. Motion to approve same was made by **Michael C. Repay**, seconded by **Kyle W. Allen, Sr.** Motion carried 3-0.

#### **4. Minutes**

##### **A. July 20, 2016**

**Chairman Scheub** requested approval of the July 20, 2016 Minutes. Motion to approve same was made by **Michael C. Repay**, seconded by **Kyle W. Allen, Sr.** Motion carried 3-0.

#### **5. Reports – Correspondence – Information for the Record**

##### **A. Advisory Committee By Township**

##### **B. Little Calumet River Watershed**

###### **1. Main Beaver Dam Ditch, Center Twp.**

Letter from Indiana Department of Natural Resources (IDNR) to County Surveyor Bill Emerson, Jr., regarding SEA #900 request for early coordination meeting.

###### **2. Indiana State Revolving Fund report for City of Crown Point.**

###### **3. Indiana Department of Natural Resources (IDNR) letter to Christopher B. Burke Engineering regarding wetland restoration near Burns Ditch.**

###### **4. Letter from Drainage Administrator Dan Gossman to City of Crown Point regarding proposed Beacon Hill – Phase II near Main Beaver Dam Ditch.**

###### **5. Indiana Department of Natural Resources (IDNR) “Termination Notice” for “Construction in a Floodway” for BP Products regarding Lake George Canal, near Hammond, Indiana.**

###### **6. Letter/Report from Asst Drainage Administrator Tom Regalado to County Surveyor Bill Emerson, Jr. regarding Clearing & Snagging Crew activity.**

###### **7. Other.**

##### **C. Kankakee River Watershed**

###### **1. US Army Corps of Engineers letter regarding 2017 Nationwide Permit “Public Notice”**

###### **2. West Creek, Hanover Twp.**

Indiana Department of Natural Resources (IDNR) letter to Christopher B. Burke Engineering regarding permit renewal near West Creek.

###### **3. Letter to Nick Bellar of Winfield regarding regulated drain determination.**

###### **4. Letter/Report from Asst Drainage Administrator Tom Regalado to County Surveyor Bill Emerson, Jr. regarding Clearing & Snagging Crew activity.**

###### **5. Other**

##### **D. Current Projects - Little Calumet River Watershed**

###### **1. Hart Ditch, St John Twp. (State Line to US Highway 30, - Dyer)**

- Review and recommendation for approval of partial payment of \$37,951.67 from Al Walus (CBBEL). Contractor: KDM Services, LLC.

**Dan Gossman** requested approval for a partial payment to KDM Services, LLC in the amount of \$37,951.67. Motion to approve partial payment to KDM Services, LLC in the amount of \$37,951.67 was made by **Michael C. Repay**, seconded by **Kyle W. Allen, Sr.** Motion carried 3-0.

2. **Niles Ditch, Center & Winfield Twps.** (113<sup>th</sup> to Gibson Street)
3. **Cady Marsh Ditch - Highland, North Twp.** (Hart Ditch to Cline Ave, Highland)
4. **Turkey Creek Lateral No. 13 – Bank Stabilization, Schererville, St John Twp.**
5. **Main Beaver Dam Ditch, Center Twp.** (1423 Edgewater Road, Crown Point)
  - Letter from CBBEL to IDEM regarding permit.
  - Letter from CBBEL to ACOE regarding permit.
  - Letter from CBBEL to IDNR regarding permit.
  - Addendum No. 1 for Main Beaver Dam Ditch – Bank Stabilization

**Dan Gossman** stated that this item relates to the permit application process for the bids currently being opened under Item No. 10-A-1.

## 6. Other

### E. Current Projects - Kankakee River Watershed

1. **West Creek Maintenance, Hanover Twp.** (125<sup>th</sup> Ave to 133<sup>rd</sup> Ave)
2. **Singleton Ditch Maintenance US 41 to Monon Road – Phase II, Cedar Creek Twp.** (Cedar Creek to Monon Road)
  - Letter from Drainage Administrator Dan Gossman to RA Oros regarding silt fence and vegetation.
  - Review and recommendation for approval of final payment of \$24,862.09 from Drainage Administrator Dan Gossman Contractor: R.A. Oros, Inc.

**Dan Gossman** requested approval for final payment to R.A. Oros, Inc. in the amount of \$24,862.09. Motion to approve final payment to R.A. Oros, Inc. in the amount of \$24,862.09 was made by **Michael C. Repay**, seconded by **Kyle W. Allen, Sr.** Motion carried 3-0.

3. **Ernie Niemeyer Creek & Levee – Phase IV, West Creek Twp.** (Stateline to US 41)
4. **2016 Stoney Run Ditch Middle Branch Lateral No. 4 Maintenance, Winfield Twp.** (145<sup>th</sup> Avenue, Leroy)
  - Letter from IDNR to County Surveyor Emerson regarding “No Permit Required”
  - Letter from Drainage Administrator Dan Gossman to IDEM regarding permit.
  - Letter from Drainage Administrator Dan Gossman to ACOE regarding permit.
5. **Other**

**Dan Gossman** requested that Item Nos. 5-B, C, D & E be made a “Matter of Public Record”. Motion to make Item Nos. 5-B, C, D & E a “Matter of Public Record” was made by **Michael C. Repay**, seconded by **Kyle W. Allen, Sr.** Motion carried 3-0.

## 6. Applications / Petitions

### A. **Bull Run Ditch, St John Twp.**

**Applicant: James & Janice Nichols**      **Agent: Landmark Engineering Ltd**  
Application to “Perform Work”, and “Place Temporary/Permanent Structure” within regulated drain for the purpose of installing culvert crossing for development of Windy Knoll Estates.

- Review letter from Thomas Burke P.E., PhD., (CBBEL)

- Review letter from Landmark Engineering

**Thomas Burke (CBBEL)** reported that this application is a request to provide a crossing over Bull Run Ditch in order to obtain access and construct a three-lot residential subdivision, east of Sheffield Avenue. After a thorough review of the supplied information by the applicant, Thomas stated that CBBEL concludes that the Applicant has satisfactorily addressed all previous comments and recommended approval with the following condition:

- 1) All disturbed areas within the 75-foot drainage easement should be properly stabilized and restored to existing conditions. All efforts should be made to limit sediment entering the waterway during construction of the proposed crossing.

Motion to approve with the above-stated condition was made by **Michael C. Repay**, seconded by **Kyle W. Allen, Sr.** Motion carried 3-0

**B. Bull Run Ditch, St John Twp.**

**Applicant: Preserve, S.J., LLC**

**Agent: Jack Slager**

Application to "Perform Work", "Connect/Discharge Into", and "Place Temporary /Permanent Structure" within regulated drain for the purpose of development of subdivision.

**DEFERRED.**

**Jeremy Schmitt (ASI)** reported that the Applicant is still calculating compensatory storage for work within a floodplain and recommended deferring this application until these calculations are reviewed by ASI. **Surveyor Bill Emerson, Jr.** added that the Applicant is going to be building in areas that are currently in a floodplain and, according to the Lake County Stormwater Ordinance, they must show how they will be compensating for that in their calculations. Motion to defer was made by **Michael C. Repay**, seconded by **Kyle W. Allen, Sr.** Motion carried 3-0.

**C. Cady Marsh Ditch, North Twp.**

**Applicant: School Town of Highland**      **Agent: Torrenga Engineering**

Application to "Perform Work", "Connect/Discharge Into" and "Place Temporary /Permanent Structure" within regulated drain for the purpose of draining athletic fields.

**Thomas Burke (CBBEL)** reported that the Highland School Corporation is requesting to place a drain tile underneath their field, which does not drain well due to the Cady Marsh Ditch bank being higher than the field and requested approval with the following four conditions:

- 1) The 8-inch PVC pipe should be SDR 26 or thicker. This should be noted on the plan set.
- 2) We recommend that the site owner sign a hold harmless agreement with the LCSO regarding potential damage to the proposed underdrain system. The LCSO is responsible for maintenance of all regulated drains in Lake County. Therefore, the LCSO performs or hires contractors to perform maintenance that often requires heavy equipment within the easement limits. Nyoplast pipe and/or catch basins lack high loading capacities when buried at minimum cover making the susceptible to damage if heavy equipment is driven over top of the structures. The LCSO will not be held liable for any damage to the proposed system during necessary maintenance operations adjacent to Cady Marsh Ditch.
- 3) The southern bank of Cady Marsh Ditch should be restored to existing conditions. We recommend that SC-250 erosion control blanket be used to stabilize the slope from the

water's edge to the top bank. An SC-250 detail and call-out should be added to the plan set. All necessary measures should be taken to minimize sediment from entering the waterway during construction activities.

- 4) The temporary stockpile should be removed from the easement limits after construction has been completed.

Motion to approve with the four conditions listed above was made by **Michael C. Repay**, seconded by **Kyle W. Allen, Sr.** Motion carried 3-0.

#### D. Other

### 7. MS4 Water Quality

#### A. Capital Projects Status Report

1. **41<sup>st</sup> Avenue Storm Sewer Project, Calumet Twp.**
  - Agreement with US Army Corps of Engineers

**Lake County Surveyor Bill Emerson, Jr.** explained that this agreement provides a summary of what work will be performed and that CBBEL has been involved in the design of this project and has been working diligently in obtaining easements from various property owners for drainage purposes. He reported that this project was started up by **Commissioner Mike Repay** who has been working closely with the Army Corps to obtain a grant and continues to be very involved in moving this project forward, which will be a great benefit to this area. **Commissioner Repay** thanked **Bill Emerson** for his involvement also.

2. **133<sup>rd</sup> Avenue / S.R. 55 Storm Drainage Project, Center Twp.**

**Lake County Surveyor Bill Emerson, Jr.** stated that this roadway location is continually getting flooded during a rain event creating dangerous traffic situations. He reported that there is currently no drainage easements at this site, but there is a mutual drain that drains multiple properties and, in order to move forward and get this area cleaned up and get the drainage way re-established, the Lake County Highway Department will be filing a Petition to the Drainage Board requesting a regulated drain be establish at this site.

3. **Upper Beaver Dam Ditch Storage/Water Quality Project**
4. **Willowdale Sanitary Sewer – Phase II & III**

**Lake County Surveyor Bill Emerson, Jr.** reported that the contractor is working on providing top soil to complete the final restoration.

5. **Williams Street, Calumet Twp.**

**Surveyor Bill Emerson, Jr.** reported that there have always been rear yard drainage issues on this street and for some reason this street was never dedicated as a county road. He stated that **Attorney Cliff Duggan** and the Commissioners have worked on getting this road dedicated to the County so now we have access and the legal right to work on correcting these drainage issues. We have met with Walsh & Kelly on their property and they have agreed to clear their property to get the water moving and county highway is going to complete the roadside drainage there. **Michael C. Repay** inquired as to a date of completion. **Rich Budziak** replied about a month and a half. **Lake County Surveyor Emerson, Jr.** stated that he would continue to ask Lake County Highway to make this project a priority.

## **6. South County Sanitary Sewer Project with ACOE**

**Lake County Surveyor Bill Emerson, Jr.** explained that the Army Corps has a program where they will pay half the cost towards performing a study on various subdivisions throughout Lake County to prioritize at least 10 subdivisions that have septic problems and water quality issues and that the Surveyor's Office will be working with the Lake County Health Department and the Army Corps on this project. He reported, to date, on two such successful projects--Hermit's Lake and Willowdale Subdivisions. **Surveyor Emerson** stated that this is a good program and he will provide updates as they become available

## **7. Kankakee River Basin Commission**

**Surveyor Bill Emerson, Jr.** added this item to the agenda in order to discuss some ideas/options with Jody Melton of the KRBC regarding Shady Shores, located next to the Kankakee River, which has had long time flooding issues. He explained that Jodi has recommended an equalization pipe from the back end of the bayou area along the Ernie Niemeyer to equalize the two between the bayou and the ditch, which would be a little of an overflow for that area, since the ditch is always lower. **Jody Melton** stated that the KRBC has \$25,000 in KRBC Funds, for Lake County which provides for the maintenance of Ernie Niemeyer west of US 41 and offered to assist in contributing towards this project with any remaining funds. **Gerry Scheub** stated that he feels this would be a very beneficial project. **Dan Gossman** stated that he will work with Jody Melton towards accomplishing this project.

### **B. MS4 Information and Correspondence**

### **C. Other.**

**Dan Gossman** requested that Item Nos. 7-A-1 B & C be made a "Matter of Public Record". Motion to make Item Nos. 7-A, B & C a "Matter of Public Record" was made by **Michael C. Repay**, seconded by **Kyle W. Allen, Sr.** Motion carried 3-0.

## **8. Financial Issues**

### **A. Little Calumet River Watershed**

1. (Handout) Approve Plans and Specification and Seek Bid Proposals for Turkey Creek Bank Stabilization at Joliet street to James Wittchen Drive

**Dan Gossman** requested recommending approval of the Plans and Specification and Seek Bid Proposals for Turkey Creek Bank Stabilization at Joliet Street to James Wittchen Drive with proposals due at next month's September 21<sup>st</sup> Drainage Board Meeting. Motion to approve same was made by **Michael C. Repay**, seconded by **Kyle W. Allen, Sr.** Motion carried 3-0.

### **B. Kankakee River Watershed**

## **9. Approve Plans/Advertise for Bids/Seek Proposals and/or Approve Plan Modifications**

- A. Little Calumet River Watershed**
- B. Kankakee River Watershed**

## **10. Receive and Open Bids/Proposals**

- A. Little Calumet River Watershed**

1. **2016 Main Beaver Dam Ditch Bank Stabilization** (1423 Edgewater Rd, Crown Point)

**Attorney Peter Katic** opened three (3) bids received all of which appeared to be in proper legal order and they were as follows:

R.A. Oros, Inc.	\$48,765.50
Austgen Equipment	\$79,172.00
KDM Services, LLC	\$44,025.75

**Lake County Surveyor Emerson, Jr.** requested taking these three bids under advisement. Motion to take these three bids under advisement was made by **Michael C. Repay**, seconded by **Kyle W. Allen, Sr.** Motion carried 3-0.

**B. Kankakee River Watershed**

**11. Award Contracts, Approve Modifications, and/or Ratify Actions by County Surveyor**

**A. Little Calumet River Watershed**

**B. Kankakee River Watershed**

**12. Other Business**

**A. Other**

**Joe Hero (St. John).** Requested to comment on Item No. 6-B.

*"IDEM has issued a Section 401 Water Quality Certification, under Rule 5. The deadline for filing a complaint with the Administrative Law Judge is probably August 22<sup>ND</sup>, to be conservative. Today you heard where there is an issue of the floodplain and my understanding is that it will require greater detention area so water does not go into Bull Run Ditch. Currently, Bull Run Ditch is flooding downstream. I think that the Drainage Board should take a position with the Administrative Law Judge and IDEM before the deadline to hold off and rescind the 401 Water Quality Certification. Because what happens is if too much water goes into Bull Run Ditch upstream, it is going to impact the flooding downstream, and once the flood happens, the recession goes back into the receding waters, goes back into the ditch picking up all kinds of surface pollutants, which affects the water quality and, since Section 401 is about water quality, this Drainage Board should intervene here and make a complaint with the Administrative Law Judge hearing this case by August 22<sup>nd</sup>. I would like to see a letter go to this judge that outlines the defect, because otherwise, this thing is granted and that period expires and this project goes forward and then there is a future battle, which you cannot go back and file a complaint anymore. So, without the proper retention area because they are building in the floodplain...I heard your engineer say you need 1.5 times the normal retention storage, so I think this Board should take a position on the Preserve and make a comment and I ask the Surveyor to do it if this Board chooses not to so this is properly done and request to ask IDEM to perform a NPDES procedure instead of a Rule 5, which is much stricter and would give a better evaluation as to what should be done there."*

**Gerry Scheub** asked for a response from **Surveyor Emerson, Jr.** **Bill Emerson Jr.** replied....*"The County does not have bases to do that based on what IDEM reviews. The County's issues having to do basically with compensatory storage and floodplain issues. I understand and appreciate Mr. Hero's points kind of related to the two, but I think the information we are seeking is related more to what the DNR reviews and floodplain issues. So I don't know if we have a basis to appeal it at this point."*

**13. Adjournment**

- A. The next meeting is scheduled for Wednesday September 21, 2016 in the Lake County Commissioners' Courtroom at 8:00AM Drainage Advisory Committee and 9:00AM Drainage Board.**
- B. Motion to Adjourn.**

Motion to adjourn was made by **Michael C. Repay**, seconded by **Kyle W. Allen, Sr.**, seconded by **Gerry Scheub**. Motion carried 2-0. Meeting adjourned at 9:25 a.m.

APPROVED THIS 21<sup>st</sup> DAY OF SEPTEMBER, 2016

**LAKE COUNTY DRAINAGE BOARD**



Gerry Scheub, Chairman



Michael C. Repay, Member



Kyle W. Allen, Sr., Member

ATTEST: \_\_\_\_\_  
Mary Ellen Kupsik, Drainage Board Secretary

# **MINUTES**

## **LAKE COUNTY DRAINAGE BOARD**

### **ADVISORY COMMITTEE**

**WEDNESDAY, AUGUST 17, 2016**

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#### **2. Roll Call**

**Tom Silich, Hobart Twp.; Dave Hubinger, Center Twp.; Milan Dakich, Ross Twp.; Larry Cope, Winfield Twp.; Louise Neese, Calumet Twp.; Ken Huseman, Hanover Twp.; Harold Mussman, West Creek Twp.; Jamie Blankman, North Twp.; Jean Shepherd, St. John Twp. and John Jurs, Eagle Creek Twp. [10 Present, 1 Absent]. Also Present: Lake County Surveyor **Bill Emerson, Jr.**; **Dan Gossman**, Drainage Administrator; Legal Consultant, **Clifford E. Duggan, Jr.**; Drainage Board Attorney, **Peter Katic**; **Mary Ellen Kupsik**, Drainage Board Secretary; North Watershed Engineering Consultant, **Thomas Burke** of Christopher B. Burke Engineering, and South Watershed Engineering Consultant, **Jeremy Schmitt**, American Structurepoint, Inc.**

### 3. Agenda

#### A. Additions, Deletions, and/or Corrections

**Dan Gossman** requested the following additions to the Agenda. Item Nos. 6-A & C, CBEL review letters; Item No. 6-B, ASI review letter, and Item No. 9-A-1, Plans and Specifications for Turkey Creek Bank Stabilization, Joliet Street to James Wittchen Drive, Schererville. The above-stated additions were accepted by the Advisory Committee.

#### B. Permission to Open Bids/Proposals

### 4. Minutes

#### A. July 20, 2016

**Tom Silich** requested a motion to approve the **July 20, 2016** Lake County Drainage Advisory Board Minutes. Motion to accept and approve same was made by **Louise Neese**, seconded by **Dave Hubinger**. Motion carried.

### 5. Reports – Correspondence – Information for the Record

#### A. Advisory Committee By Township

**Surveyor Bill Emerson, Jr.** reported that Lake County has been working very closely with **Dan Repay** and the Little Calumet River Basin Commission in performing maintenance work near Turkey Creek Lateral No. 6 along I-65, and along the Norfolk Southern Railroad Line. He stated that an onsite meeting was held with LCRBC and the Evergreen Cemetery owners in order to allow access through the cemetery property to reach a marshy area of land whereby the LCRBDC has a contractor who can float his machine over to the tracks and clean and open up a culvert and then continue working on the south side and get that opened up as well. **Surveyor Emerson** added that he was very excited with the Little Calumet River Basin Commission's assistance in getting this area cleaned up.

**Harold Mussman (West Creek Twp.)** stated that property owners, **Jody and Bill Herr**, reported that there are areas at the Ackerman Farm that need to be inspected and cleaned. **Harold Mussman** also inquired as to the brush along the Ernie Niemeyer. **Dan Gossman** responded that he had a discussion with **Senator Niemeyer** who explained that **Mr. Churchill** is closing on the Nelson property and was going to start getting rid of the brush that was left from the Nelsons. Dan added that he will now be exchanging contact information between **Mr. Churchill** and the contractor to coordinate their efforts. **Harold** also reported that after several heavy rainfall events this past week, the ditches in his area are full, but not over flowing.

**John Jurs (Eagle Creek Twp.)** inquired if anyone has inspected the Quarry site to see if the pumps were shut off during the most recent heavy rainfall event. **Surveyor Emerson, Jr.** responded that the pumps were shut off at midnight when it reached 642 and continued to rise until 9:00 a.m. to 643.4. **Chris Brown** from our office performed an inspection at the site and reported that the pumps were off; the entire site was taking in water and the pits were full, as well. **Dan Gossman** stated that Chris Brown observed during his inspection that the overflow from the Singleton was dumping into the Quarry, as designed.

**Larry Cope (Winfield Twp.)** reported that due to the recent heavy rainfall events, US 231 around 5607 has flooded again and cars traveling at high speeds in the dark are hitting standing water making it a various dangerous situation. **Surveyor Emerson, Jr. and Dan Gossman** responded that they will again contact INDOT to set up another onsite meeting to address this issue.

**B. Little Calumet River Watershed**

**1. Main Beaver Dam Ditch, Center Twp.**

- Letter from Indiana Department of Natural Resources (IDNR) to County Surveyor Bill Emerson, Jr., regarding SEA #900 request for early coordination meeting.
- 2. Indiana State Revolving Fund report for City of Crown Point.**
- 3. Indiana Department of Natural Resources (IDNR) letter to Christopher B. Burke Engineering regarding wetland restoration near Burns Ditch.**
- 4. Letter from Drainage Administrator Dan Gossman to City of Crown Point regarding proposed Beacon Hill – Phase II near Main Beaver Dam Ditch.**
- 5. Indiana Department of Natural Resources (IDNR) “Termination Notice” for “Construction in a Floodway” for BP Products regarding Lake George Canal, near Hammond, Indiana.**
- 6. Letter/Report from Asst Drainage Administrator Tom Regalado to County Surveyor Bill Emerson, Jr. regarding Clearing & Snagging Crew activity.**
- 7. Other.**

**C. Kankakee River Watershed**

- 1. US Army Corps of Engineers letter regarding 2017 Nationwide Permit “Public Notice”**
- 2. West Creek, Hanover Twp.**  
Indiana Department of Natural Resources (IDNR) letter to Christopher B. Burke Engineering regarding permit renewal near West Creek.
- 3. Letter to Nick Bellar of Winfield regarding regulated drain determination.**
- 4. Letter/Report from Asst Drainage Administrator Tom Regalado to County Surveyor Bill Emerson, Jr. regarding Clearing & Snagging Crew activity.**
- 5. Other**

**Tom Silich** requested a Motion that Item Nos. 5-B and 5-C be made a “Matter of Record”. Motion to approve same was made by **Louise Neese**, seconded by **Jamie Blankman**. Motion carried.

**D. Current Projects - Little Calumet River Watershed**

- 1. Hart Ditch, St John Twp. (State Line to US Highway 30, - Dyer)**
  - Review and recommendation for approval of partial payment of \$37,951.67 from Al Walus (CBBEL). Contractor: KDM Services, LLC.

**Dan Gossman** requested recommending approval for a partial payment to KDM Services, LLC in the amount of \$37,951.67. Motion to recommend approval of same was made by **Jean Shepherd**, seconded by **Louise Neese**. Motion carried.

- 2. Niles Ditch, Center & Winfield Twps. (113<sup>th</sup> to Gibson Street)**
- 3. Cady Marsh Ditch - Highland, North Twp. (Hart Ditch to Cline Ave, Highland)**
- 4. Turkey Creek Lateral No. 13 – Bank Stabilization, Schererville, St John Twp.**
- 5. Main Beaver Dam Ditch, Center Twp. (1423 Edgewater Road, Crown Point)**
  - Letter from CBBEL to IDEM regarding permit.

- Letter from CBBEL to ACOE regarding permit.
- Letter from CBBEL to IDNR regarding permit.
- Addendum No. 1 for Main Beaver Dam Ditch – Bank Stabilization

**6. Other**

**E. Current Projects - Kankakee River Watershed**

- 1. West Creek Maintenance, Hanover Twp.** (125<sup>th</sup> Ave to 133<sup>rd</sup> Ave)
- 2. Singleton Ditch Maintenance US 41 to Monon Road – Phase II, Cedar Creek Twp.** (Cedar Creek to Monon Road)
  - Letter from Drainage Administrator Dan Gossman to RA Oros regarding silt fence and vegetation.
  - Review and recommendation for approval of final payment of \$24,862.09 from Drainage Administrator Dan Gossman Contractor: R.A. Oros, Inc.

**Dan Gossman** requested recommending approval for a final payment to RA Oros in the amount of \$24,862.09. Motion to recommend approval of same was made by **Milan Dakich**, seconded by **Louise Neese**. Motion carried.

- 3. Ernie Niemeyer Creek & Levee – Phase IV, West Creek Twp.** (Stateline to US 41)
- 4. 2016 Stoney Run Ditch Middle Branch Lateral No. 4 Maintenance, Winfield Twp.** (145<sup>th</sup> Avenue, Leroy)
  - Letter from IDNR to County Surveyor Emerson regarding “No Permit Required”
  - Letter from Drainage Administrator Dan Gossman to IDEM regarding permit.
  - Letter from Drainage Administrator Dan Gossman to ACOE regarding permit.
- 5. Other**

**Tom Silich** requested a motion that Item Nos. 5-D and 5-E be made a “Matter of Record”. Motion to approve same was made by **Dave Hubinger**, seconded by **John Jurs**. Motion carried.

**6. Applications / Petitions**

**A. Bull Run Ditch, St John Twp.**

**Applicant: James & Janice Nichols Agent: Landmark Engineering Ltd**  
 Application to “Perform Work”, and “Place Temporary/Permanent Structure” within regulated drain for the purpose of installing culvert crossing for development of Windy Knoll Estates.

- Review letter from Thomas Burke P.E., PhD., (CBBEL)
- Review letter from Landmark Engineering

**Thomas Burke (CBBEL)** reported that this application is a request to provide a crossing over Bull Run Ditch to obtain access for the construction of a three-lot residential subdivision, east of Sheffield Avenue. After a thorough review of the supplied information by the Applicant, Thomas stated that CBBEL concludes that the Applicant has satisfactorily addressed all previous comments and recommended approval with the following condition:

- 1) All disturbed areas within the 75-foot drainage easement should be properly stabilized and restored to existing conditions. All efforts should be made to limit sediment entering the waterway during construction of the proposed crossing.

**Tom Silich** requested recommending a motion to approve with the above-stated condition. **Jean Shepherd** recommended approval, with the above-stated condition, seconded by **Dave Hubinger**. Motion carried.

**Jean Shepherd** inquired if this something that the Town of St. John approved or does the County approve. **Thomas Burke** explained that this site was approved by DLZ for the Lake County Plan Commission, because this subdivision is located in unincorporated Lake County.

**B. Bull Run Ditch, St John Twp.**

**Applicant: Preserve, S.J., LLC**

**Agent: Jack Slager**

Application to "Perform Work", "Connect/Discharge Into", and "Place Temporary /Permanent Structure" within regulated drain for the purpose of development of subdivision.

**TABLED.**

**Dan Gossman** stated that this Application is within the town limits of St. John and referred to the "Handout" provided by Structurepoint, which Jeremy Schmitt (ASI) explains that part of the Applicant's development will be within the floodplain and their engineer is still in process of determining how much compensatory storage they will be providing for their development and until that information has been received and reviewed, **Dan Gossman** stated that this Application is Tabled.

**C. Cady Marsh Ditch, North Twp.**

**Applicant: School Town of Highland**      **Agent: Torrenga Engineering**

Application to "Perform Work", "Connect/Discharge Into" and "Place Temporary /Permanent Structure" within regulated drain for the purpose of draining athletic fields.

**Dan Gossman** referred to the "Handout" review letter provided by CBBEL and Thomas Burke from CBBEL went on to report that the School's field is lower than the top of the Cady Marsh Ditch Bank, so when it rains heavily, the field does not drain and the Applicant is requesting putting in a perforated drain underneath field to drain back to the ditch. He recommended requesting approval with the following conditions.

- 1) The 8-inch PVC pipe should be SDR 26 or thicker. This should be noted on the plan set.
- 2) We recommend that the site owner sign a hold harmless agreement with the LCSO regarding potential damage to the proposed underdrain system. The LCSO is responsible for maintenance of all regulated drains in Lake County. Therefore, the LCSO performs or hires contractors to perform maintenance that often requires heavy equipment within the easement limits. Nyoplast pipe and/or catch basins lack high loading capacities when buried at minimum cover making the susceptible to damage if heavy equipment is driven over top of the structures. The LCSO will not be held liable for any damage to the proposed system during necessary maintenance operations adjacent to Cady Marsh Ditch.
- 3) The southern bank of Cady Marsh Ditch should be restored to existing conditions. We recommend that SC-250 erosion control blanket be used to stabilize the slope from the water's edge to the top bank. An SC-250 detail and call-out should be added to the plan set. All necessary measures should be taken to minimize sediment from entering the waterway during construction activities.
- 4) The temporary stockpile should be removed from the easement limits after construction has been completed.

**Tom Silich** requested recommending approval with the above-stated four conditions. Motion to recommend approval of same was made by **Jamie Blankman**, seconded by **Louise Neese**. Motion carried.

**D. Other**

**7. MS4 Water Quality**

**A. Capital Projects Status Report**

**1. 41<sup>st</sup> Avenue Storm Sewer Project, Calumet Twp.**

- Agreement with US Army Corps of Engineers

**Lake County Surveyor Bill Emerson, Jr.** explained that CBBEL has been involved in the design of this project and this agreement provides a summary of work that will be performed and currently, **Al Walus, from CBBEL**, has been working diligently in obtaining easements for drainage purposes from various property owners as part of this project and should be a great benefit to this area.

**2. 133<sup>rd</sup> Avenue / S.R. 55 Storm Drainage Project, Center Twp.**

**Surveyor Bill Emerson, Jr.** reported that we have been trying unsuccessfully to get property owners, NRCS and other involved entities on board to get this project accomplished. He stated that the Surveyor's Office has now reached out to the Lake County Highway Department to Petition the Drainage Board to reestablish the drain at this location, since the intersection is continually flooding after rainfall events.

**3. Upper Beaver Dam Ditch Storage/Water Quality Project**

**4. Willowdale Sanitary Sewer – Phase II & III**

**Surveyor Bill Emerson, Jr.** reported that, to date, the contractor, Gough, Inc., is still performing restoration of the disrupted soil by providing some erosion blankets and regrading of the topsoil.

**5. Williams Street, Calumet Twp.**

**Surveyor Bill Emerson, Jr.** reported that there have always been rear yard drainage issues on this street and for some reason this street was never dedicated as a county road. He stated that **Attorney Cliff Duggan** and the Commissioners have worked on getting this road dedicated to the County so now we have access and the legal right to work on correcting these drainage issues.

**6. South County Sanitary Sewer Project with ACOE**

**Surveyor Bill Emerson, Jr.** reported that this project is currently in its planning stages. He explained that the Army Corps has a program where they will pay half the cost towards performing a study on various subdivisions to figure out solutions for septic problems and water quality issues, particularly in the South Lake County areas. He reported, to date, on two such successful projects--Hermit's Lake and Willowdale Subdivisions. **Surveyor Emerson** stated that this is a good program and he will provide updates as they become available.

7. Kankakee River Basin Commission

**Surveyor Bill Emerson, Jr.** reported that the County is considering working with the Kankakee River Basin Commission regarding the Shady Shores bayou area. This site continually takes on a lot of water during heavy rainfall events and then the water becomes very stagnant. **Jody Melton**, from the KRBC, has been reaching out his willingness to potentially place an equalization pipe between the Shady Shores (Shelby) and Ernie Niemeyer area.

- B. MS4 Information and Correspondence
- C. Other.

8. Financial Issues

- A. Little Calumet River Watershed
- B. Kankakee River Watershed

9. Approve Plans/Advertise for Bids/Seek Proposals and/or Approve Plan Modifications

A. Little Calumet River Watershed

- 1. (Handout) Approve Plans and Specification and Seek Bid Proposals for Turkey Creek Bank Stabilization at Joliet Street to James Wittchen Drive

**Dan Gossman** requested recommending approval of the Plans and Specification and Seek Bid Proposals for Turkey Creek Bank Stabilization at Joliet Street to James Wittchen Drive with proposals due at next month's September 21<sup>st</sup> Drainage Board Meeting. Motion to recommend approval of same was made by **Jean Shepherd**, seconded by **John Jurs**. Motion carried.

B. Kankakee River Watershed

10. Receive and Open Bids/Proposals

A. Little Calumet River Watershed

- 1. 2016 Main Beaver Dam Ditch Bank Stabilization (1423 Edgewater Rd, Crown Point)

[BIDS TO BE OPENED AT TODAY'S LAKE COUNTY DRAINAGE BOARD MEETING AT 9:00 A.M.]

B. Kankakee River Watershed

11. Award Contracts, Approve Modifications, and/or Ratify Actions by County Surveyor

- A. Little Calumet River Watershed
- B. Kankakee River Watershed

12. Other Business

- A. Other

**Jeff Huet (Schererville Public Works Director)** inquired as to the status of the ditch between the Scherwood Club Golf Course and the Golfview Drive (Golfview Subdivision). **Surveyor Bill Emerson, Jr.** replied that he and his staff have been out at this location with **Commissioner Scheub** and will be out again shortly to shoot elevations in order to prepare plans and

specifications for this project. **Dan Gossman** added that prior to work being performed, letters will be sent out to the involved property owners and will copy the Town of Schererville of same.

**13. Adjournment**

**A. The next meeting is scheduled for Wednesday September 21, 2016 in the Lake County Commissioners' Courtroom at 8:00AM Drainage Advisory Committee and 9:00AM Drainage Board.**

**B. Motion to Adjourn.**

Meeting adjourned at 8:40 a.m.

**E. Current Projects - Kankakee River Watershed**

1. **West Creek Maintenance, Hanover Twp.** (125<sup>th</sup> Ave to 133<sup>rd</sup> Ave)
2. **Singleton Ditch Maintenance US 41 to Monon Road – Phase II, Cedar Creek Twp.** (Cedar Creek to Monon Road)
3. **Ernie Niemeyer Creek & Levee – Phase IV, West Creek Twp.** (Stateline to US 41)
4. **2016 Stoney Run Ditch Middle Branch Lateral No. 4 Maintenance, Winfield Twp.** (145<sup>th</sup> Avenue, Leroy)
  - Letter from IDNR to County Surveyor Bill Emerson, Jr. regarding “No Permit Required” from IDNR.
5. **2016 Cedar Creek Maintenance, Cedar Creek Twp.** (Lake Dale to 171<sup>st</sup> Ave)
  - Letter from IDNR to County Surveyor Bill Emerson, Jr. regarding scheduling SEA.
6. **2016 McConnell Ditch Maintenance, Cedar Creek Twp.** (Morse St to 171<sup>st</sup> Ave)
7. **2016 Singleton Ditch Maintenance, Cedar Creek & Eagle Creek Twps.** (Monon Rd to Mississippi St)
8. **Other**

**6. Applications / Petitions**

**A. Bull Run Ditch, St John Twp.**

**Applicant: Preserve, S.J., LLC**

**Agent: Jack Slager**

Application to “Perform Work”, “Connect/Discharge Into”, and “Place Temporary /Permanent Structure” within regulated drain for the purpose of development of subdivision.

- Letter from County Surveyor Bill Emerson, Jr. to IDEM regarding Lake County review.
- Indiana Office of Environmental Adjudication order for Scheduling Prehearing Conference.
- Letter from Casboni Bros. regarding withdraw of objection to IDEM Section 401 Certification.

**B. Hart Ditch / Plum Creek, St John Twp.**

**Applicant: Enbridge Energy, Limited Partnership**

Application to “Perform Work” within regulated drain for the purpose of routine pipeline maintenance.

**C. Other**

**7. MS4 Water Quality**

**A. Capital Projects Status Report**

1. **41<sup>st</sup> Avenue Storm Sewer Project, Calumet Twp.**
2. **133<sup>rd</sup> Avenue / S.R. 55 Storm Drainage Project, Center Twp.**
3. **Upper Beaver Dam Ditch Storage/Water Quality Project**
4. **Willowdale Sanitary Sewer – Phase II & III**
5. **Williams Street, Calumet Twp.**
6. **South County Sanitary Sewer Project with ACOE**
7. **Hawthorne Hills – Storm Sewer Video Inspection**

- Request for proposals from Drainage Administrator Dan Gossman for video inspection of storm sewers.

**B. MS4 Information and Correspondence**

1. Inspection report from MS4 Compliance Inspector Chris Brown to County Surveyor Bill Emerson, Jr. and Drainage Board Chairman Gerry Scheub regarding standing water near Morse Street and 171<sup>st</sup> Avenue.

2. Inspection report from MS4 Compliance Inspector Chris Brown to County Surveyor Bill Emerson, Jr. regarding drainage concerns in Farmington Meadows Subdivision.

**C. Other.**

**8. Financial Issues**

- A. Little Calumet River Watershed
- B. Kankakee River Watershed

**9. Approve Plans/Advertise for Bids/Seek Proposals and/or Approve Plan Modifications**

- A. Little Calumet River Watershed
- B. Kankakee River Watershed

**10. Receive and Open Bids/Proposals**

**A. Little Calumet River Watershed**

**1. 2016 Turkey Creek Bank Stabilization, St John Twp. (Joliet Street to James Wittchen Drive, Schererville)**

- Sign in sheet from Mandatory Pre-Bid
- Addendum No. 1
- IDNR letter to County Surveyor Bill Emerson, Jr. regarding scheduling SEA.
- IDEM Permit Application
- USACE Permit Application

**B. Kankakee River Watershed**

**11. Award Contracts, Approve Modifications, and/or Ratify Actions by County Surveyor**

**A. Little Calumet River Watershed**

**1. 2016 Main Beaver Dam Ditch Bank Stabilization (1423 Edgewater Rd, Crown Point)**

R.A. Oros, Inc.	\$48,765.50
Austgen Equipment	\$79,172.00
KDM Services, LLC	\$44,025.75

**B. Kankakee River Watershed**

**12. Other Business**

**A. Other**

**13. Adjournment**

- A. The next meeting is scheduled for Wednesday October 19, 2016 in the Lake County Commissioners' Courtroom at 8:00AM Drainage Advisory Committee and 9:00AM Drainage Board.
- B. Motion to Adjourn.



Handout 5-B-1  
9-21-16

September 20, 2016

Indiana Department of Transportation  
100 North Senate Avenue  
Room N642  
Indianapolis, IN 46204

Attention: Bill Schmidt, PE  
Hydraulics Engineer

Subject: **Culvert Replacement/Maintenance under I-65**  
**Watercourse:** Tributary to Turkey Creek  
**Applicant:** INDOT  
**Engineer:** INDOT  
(CBBEL Project No. 93-169)

Dear Mr. Schmidt:

At the request of the Lake County Surveyor's Office (LCSO), Christopher B. Burke Engineering, LLC (CBBEL) has performed a review of the material submitted for the subject project by Indiana Department of Transportation (INDOT). The submitted drainage memorandum includes five proposals for full replacement or slip-lining of an existing 7 ft. diameter Corrugated Metal Pipe (CMP). The existing culvert is located under I-65, approximately 0.5 miles north of US-30 on an Unnamed Tributary to Turkey Creek (UNT). The UNT does not contain mapped floodplain or floodway according to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Lake County, IN, Panel 252 of 480, dated January 18, 2012. It appears the drainage area is just less than one square mile; therefore, no permit from the Indiana Department of Natural Resources – Division of Water (IDNR-DOW) is required. The purpose of the CBBEL review was to comment on compliance with the Lake County, Indiana Stormwater Management Ordinance (Ordinance) and standard engineering methods CBBEL received the following items for review:

- Hydraulic Memo (2 Pages), prepared by INDOT, dated September 6, 2016.

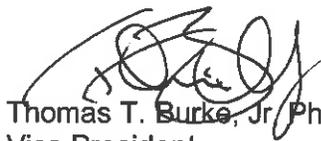
CBBEL staff has reviewed the supplied information and provides the following comments:

1. It is our understanding that this memorandum represents a study level analysis. We assume that plans and specifications will be prepared upon selecting a recommended culvert replacement method. The finalized calculations, plans, and specifications should be forwarded to the LCSO for review at that time.
2. The memorandum states that the designer used the IDNR-DOW hydraulic analysis calculator. We assume this is in reference to the new IDNR-DOW Peak Discharge Determination System. It is our understanding that IDNR-DOW will provide verification of any resultant flowrate from this tool. INDOT should provide this documentation to show that the flowrate used in this analysis was verified and accepted by IDNR-DOW.

3. The waterbody located directly east of the existing culvert is shown as a Freshwater Forested/Scrub wetland according to the U.S. Fish and Wildlife Service Wetland Mapper. INDOT should comment on possible impacts to this wetland during construction and any significant changes to the hydrologic parameters of the wetland (i.e. reduced water level, etc.) with an upsized culvert.
4. INDOT should submit the HY8 analysis and topographic survey for review.
5. INDOT should clarify why the Q100 water surface elevation is only 101.87 ft. when the referenced flow line of the culvert is 100.00 ft. Backwater depths are shown to range from 2.4 ft. to 3.6 ft. indicating the upstream surface elevation should be higher than noted.

If you have any questions, please do not hesitate to call (847) 823-0500.

Sincerely,



Thomas T. Burke, Jr. PhD, PE  
Vice President  
Head, Water Resources Department

CC: Bill Emerson, Jr. – Lake County Surveyor  
Dan Gossman – LCSO  
Mary Ellen Kupsik – LCSO

DCO\  
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5-B-1  
9-21-16



# INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue  
Room N642  
Indianapolis, Indiana 46204

PHONE: (317) 233-2096  
FAX: (317) 233-4929

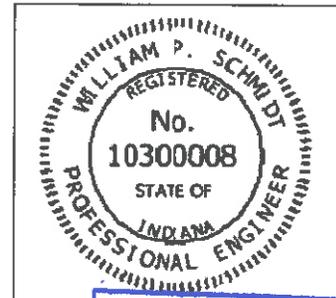
**Michael R. Pence, Governor**  
**Brandye Hendrickson, Commissioner**

September 6, 2016

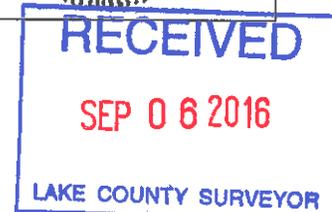
TO: Steve Vanes  
LaPorte Bridge Asset Engineer

FROM: Alex Schwinghamer, EI  
Hydraulics Engineer

THROUGH: Bill P Schmidt, PE  
Hydraulics Engineer



SUBJECT: Hydraulic Memo  
Status: Final  
Str. #: I65-045-253.18A  
County: Lake  
Location: I-65, 0.47 miles North of US 30



The existing structure has an urban watershed of commercial development and open spaces. Hydrology was performed with the DNR hydraulic analysis calculator, hydraulic analysis was performed with HY8, and the tail water elevation was calculated using a field surveyed cross-section. The cross section was located about 10' downstream of the existing culvert.

Site Parameters		
Drainage Area	0.976	sq. mi.
Q <sub>100</sub> Discharge	266	cfs
Q <sub>100</sub> Water Surface Elevation	101.81	ft.
Legal Drain	Yes	
CIF Permit Needed	No	

Culvert Properties						
Parameter	Existing	Proposal 1	Proposal 2	Proposal 3	Proposal 4	Proposal 5
Structure	CMP Dia. 7 ft	HDPE Liner ID 6 ft w/ Headwall	CIPP ID 6.67	CMP Dia. 8 ft	RCP ID 7 ft	Semi-Smooth Pipe ID 8 ft
Road Overflow Below Q <sub>100</sub> Elevation	No	No	No	No	No	
Backwater	3.57 ft.	3.37 ft.	2.76 ft.	2.82 ft.	2.43 ft.	2.81 ft.
2% EP Outlet velocity	10.38 ft/s	11.23 ft/s	11.01 ft/s	9.87 ft/s	11.04 ft/s	9.87 ft/s
Rip Rap Size		Class 2	Class 2	Class 1	Class 2	Class 1

The assumed flow line elevation of the outlet is at 100.0 ft. The proposed culverts in the table above are approved and final. The existing structure is a corrugated metal pipe with a diameter of 7 ft. .

- Proposal 1 is to install a HDPE liner that has an inner diameter of 6 ft and an outer diameter of 77 in. This proposal will require a headwall at the inlet and class 2 rip rap at the outlet for scour protection.



## INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue  
Room N642  
Indianapolis, Indiana 46204

PHONE: (317) 233-2096  
FAX: (317) 233-4929

**Michael R. Pence, Governor**  
**Brandye Hendrickson,**  
**Commissioner**

- Proposal 2 is to install a cured in place pipe (CIPP) that has an inner diameter of 6.67 ft. This proposal will require class 2 rip rap at the outlet for scour protection.
- Proposal 3 is to replace the existing structure with a corrugated metal pipe that has a diameter of 8 ft. This proposal will require matching inverts, length of pipe, and class 1 rip rap at the outlet to protect against scour.
- Proposal 4 is to replace the existing structure with a reinforced concrete pipe that has an inner diameter of 7 ft. This proposal will require matching inverts, length of pipe, and class 2 rip rap at the outlet to protect against scour.
- Proposal 5 is to replace the existing structure with a semi smooth spiral wound pipe that has an inner diameter of 8 ft. This proposal will require matching inverts, length of pipe, and class 1 rip rap at the outlet to protect against scour.

Please note that no sump is needed for the replacements since there is a free fall at the outlet of the pipe and no soil will be able to hold in place.

This culvert is a part of the Deep River regulated drain. Correspondence with the county surveyor will be necessary.

If you have any questions or comments, please contact me at (317) 233-6951.  
AJS

cc: file

Kate Francis  
Coordinator 8

5-B-2  
9-21-16



STATE OF INDIANA  
DEPARTMENT OF NATURAL RESOURCES  
CERTIFICATE OF APPROVAL  
LAKE MICHIGAN

**APPLICATION #** : LM-204

**MAILED: September 08, 2016**

**LAKE** : Lake Michigan

**APPLICANT** : City of East Chicago  
Milton Reed  
4127 Lombardy Street  
East Chicago, IL 46312

**AGENT** : US Army Corps of Engineers, Chicago District  
Matthew Shanks  
231 South LaSalle Street, Suite 1500  
Chicago, IL 60604

**AUTHORITY** : IC 14-29-1 with 312 IAC 6

**DESCRIPTION** : Native beach and dune species, native herbaceous plants and shrubs will be planted on the existing breakwater to provide essential fish and wildlife habitat. Also, glacially derived cobble will be used to construct rock reef fish habitats. The fish habitats will be constructed as two cobble mounds (approximately 354 cubic yards each) that will be 17.6' in diameter with a maximum height of 3.5' above the lake bottom with side slopes of 2:1. The mounds will be approximately 400' and 500' southeast of the existing breakwater elbow. In addition, the removal of invasive plant species will occur as needed. Details of the project are contained in information and plans received at the Division of Water on June 28, 2016, July 5, 2016 and August 1, 2016.

**LOCATION** : DOWNSTREAM: At Jeorse Park Beach near East Chicago, Calumet Township, Lake County  
Section 23, T 37N, R 9W, Whiting Quadrangle  
UTM Coordinates: Downstream 4610403 North, 464432 East  
UPSTREAM:  
UTM Coordinates: Upstream 4611557 North, 464069 East

**APPROVED BY** :   
James J. Hebenstreit, PE, Assistant Director  
Division of Water

**APPROVED ON** : September 8, 2016

Included: Notice Of Right To Administrative Review - General Conditions - Special Conditions - Service List

STATE OF INDIANA  
DEPARTMENT OF NATURAL RESOURCES

**NOTICE OF RIGHT TO ADMINISTRATIVE REVIEW**

**APPLICATION #: LM- 204**

This signed document constitutes the issuance of a permit by the Department of Natural Resources, subject to the conditions and limitations stated on the pages entitled "General Conditions" and "Special Conditions".

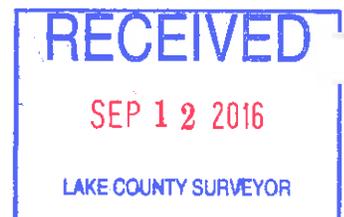
The permit or any of the conditions or limitations which it contains may be appealed by applying for administrative review. Such review is governed by the Administrative Orders and Procedures Act, IC 4-21.5, and the Department's rules pertaining to adjudicative proceedings, 312 IAC 3-1.

In order to obtain a review, a written petition must be filed with the Division of Hearings within 18 days of the mailing date of this notice. The petition should be addressed to:

Director  
Division of Hearings  
Indiana Government Center North, Room N501A  
100 North Senate Avenue  
Indianapolis, Indiana 46204

The petition must contain specific reasons for the appeal and indicate the portion or portions of the permit to which the appeal pertains.

If an appeal is filed, the final agency determination will be made by the Natural Resources Commission following a legal proceeding conducted before an Administrative Law Judge. The Department of Natural Resources will be represented by legal counsel.



**STATE OF INDIANA  
DEPARTMENT OF NATURAL RESOURCES**

**GENERAL CONDITIONS**

**APPLICATION #: LM- 204**

- (1) If any archaeological artifacts or human remains are uncovered during construction, federal law and regulations (16 USC 470, et seq.; 36 CFR 800.11, et al) and State Law (IC 14-21-1) require that work must stop and that the discovery must be reported to the Division of Historic Preservation and Archaeology within 2 business days.

Division of Historic Preservation and Archaeology  
Room W274  
402 West Washington Street  
Indianapolis, IN 46204

Telephone: (317) 232-1646, FAX: (317) 232-8036

- (2) This permit must be posted and maintained at the project site until the project is completed.
- (3) This permit does not relieve the permittee of the responsibility for obtaining additional permits, approvals, easements, etc. as required by other federal, state, or local regulatory agencies. These agencies include, but are not limited to:

<u>Agency</u>	<u>Telephone Number</u>
Lake County Drainage Board	
Little Calumet River Basin Development Commission	(219) 595-0599
Indiana Department of Environmental Management	(317) 233-8488 or (800) 451-6027
Local city or county planning or zoning commission	

- (4) This permit must not be construed as a waiver of any local ordinance or other state or federal law.
- (5) This permit does not relieve the permittee of any liability for the effects which the project may have upon the safety of the life or property of others.
- (6) This permit may be revoked by the Department of Natural Resources for violation of any condition, limitation or applicable statute or rule.
- (7) This permit shall not be assignable or transferable without the prior written approval of the Department of Natural Resources. To initiate a transfer contact:

Mr. Michael W. Neyer, PE, Director  
Division of Water  
Room W264  
402 West Washington Street  
Indianapolis, IN 46204

Telephone: (317) 232-4160, Toll Free: (877) 928-3755  
FAX: (317) 233-4579

- (8) The Department of Natural Resources shall have the right to enter upon the site of the permitted activity for the purpose of inspecting the authorized work.
- (9) The receipt and acceptance of this permit by the applicant or authorized agent shall be considered as acceptance of the conditions and limitations stated on the pages entitled "General Conditions" and "Special Conditions".

STATE OF INDIANA  
DEPARTMENT OF NATURAL RESOURCES

**SPECIAL CONDITIONS**

APPLICATION #: LM- 204

**PERMIT VALIDITY** : This permit is valid for 60 months from the "Approved On" date shown on the first page. If work has not been completed by September 08, 2021 the permit will become void and a new permit will be required in order to continue work on the project.

This permit becomes effective 18 days after the "MAILED" date shown on the first page. If both a petition for review and a petition for a stay of effectiveness are filed before this permit becomes effective, any part of the permit that is within the scope of the petition for stay is stayed for an additional 15 days.

**CONFORMANCE** : Other than those measures necessary to satisfy the "General Conditions" and "Special Conditions", the project must conform to the information received by the Department of Natural Resources on: June 28, 2016, July 5, 2016 and August 1, 2016. Any deviation from the information must receive the prior written approval of the Department.

<u>Number</u>	<u>Special Condition</u>
( 1 )	revegetate all bare and disturbed areas with a mixture of grasses (excluding all varieties of tall fescue), legumes, and native shrub and hardwood tree species as soon as possible upon completion
( 2 )	minimize and contain within the project limits all tree and brush clearing
( 3 )	do not work below the Ordinary High Water Mark of Lake Michigan (581.5' IGLD 1985) from May 1 through June 30 without the prior written approval of the Division of Fish and Wildlife
( 4 )	do not cut any trees suitable for Indiana bat or Northern Long-eared bat roosting (greater than 3 inches dbh, living or dead, with loose hanging bark, or with cracks, crevices, or cavities) from April 1 through September 30
( 5 )	do not use broken concrete or slag as artificial reef habitat
( 6 )	minimize the movement of resuspended bottom sediment from the immediate project area
( 7 )	inspect structural erosion and sediment control practices daily and repair as necessary until all construction is complete and disturbed areas are permanently stabilized
( 8 )	do not excavate or place fill in any riparian wetland
( 9 )	the sand/soil acting as the "planting medium" placed in the voids of the gaming boat breakwater between the armor stone, must be completely "clean" material (free from all contaminants), since the soil and the plantings may be washed into Lake Michigan by storm waves and torrential rain events. Sand may "not" be taken from the bed of Lake Michigan as part of the proposed "planting medium"
( 10 )	any vegetation/plantings placed on the lakeward side of the gaming boat breakwater that are washed into Lake Michigan after a storm event must be completely removed from the beach and water and disposed of in an appropriate manner



**STATE OF INDIANA  
DEPARTMENT OF NATURAL RESOURCES**

**SPECIAL CONDITIONS**

**APPLICATION #: LM- 204**

- ( 11) before and after construction of the offshore Cobble Mound reef structures, monitor the condition of the beach width. Watch for: (a) the Cobble Mounds focusing wave energy along a particular portion of the beach, causing excessive erosion; and (b) the Cobble Mounds dissipating wave energy, creating a low energy condition allowing more sand (tombolo/wider beach) or algal mats to accumulate between the cobble structures and the beach. If either of these 'high energy' or 'low energy' conditions occurs, report them to the Department of Natural Resources for evaluation
- ( 12) prior to any construction in the waters of Lake Michigan, submit a "Notice to Mariners" to the U.S. Coast Guard warning ships and boaters of the construction occurring immediately adjacent to the Ameristar gaming boat breakwater, East Chicago marina and shipping lanes at the entrance channel to the Indiana Harbor and Ship Canal
- ( 13) if the offshore Cobble Mound Reefs do not perform as anticipated or are ever abandoned in the future, or creates a negative impact on the recreational beach, or the bottom of Lake Michigan, the Cobble Mound reef material must be completely removed from the bottom of Lake Michigan, unless another beneficial use for the material/structures can be presented to and approved in writing by the Indiana Department of Natural Resources
- ( 14) if any change is made to the design plans as outlined in the permit application, those changes must be reported to the Department of Natural Resources, and receive written approval before any changes may be implemented
- ( 15) obtain written permission for any additional construction work or activities in the waters of, or on the bed of, Lake Michigan, which is not explicitly covered under the existing permit application
- ( 16) the exact coordinates (latitude and longitude) of the two new Cobble Mound fish habitat structures must be provided in writing to DNR Division of Water Steve Davis (219-874-8316, sdavis@dnr.in.gov), and to the appropriate federal agencies (contact information below) responsible for documenting and mapping structures in navigable waters
  - (1) 9th Coast Guard District; (216-902-6074)
  - (2) NOAA NOS, Coast & Geodetic Survey Mapping & Charting Branch; (301-713-4516)
  - (3) Detroit District Corps of Engineers (313-226-6828)
- ( 17) during construction of the two Cobble Mounds on the bed of Lake Michigan, any dredged or excavated sand associated with the natural or native lakebed material of Lake Michigan shall remain in the general vicinity of the dredging or excavation activity
- ( 18) any equipment, cables or pipes placed in the waterway must be clearly marked with navigation buoys described in 312 IAC 5-4 in a manner that would be visible to any watercraft operating in the area
- ( 19) any equipment and/or cables left in a public waterway in times of limited visibility must, in addition to the requirement listed above, be marked with flashing amber warning lights and reflective signage warning watercraft operators of the hazards
- ( 20) any construction equipment left overnight at the site must be illuminated
- ( 21) the cobble mounds should extend no higher than 5 feet below the Lake Michigan Ordinary High Water Mark

STATE OF INDIANA  
DEPARTMENT OF NATURAL RESOURCES

SERVICE LIST

APPLICATION #: LM- 204

City of East Chicago  
Milton Reed  
4127 Lombardy Street  
East Chicago, IL 46312

US Army Corps of Engineers, Chicago District  
Matthew Shanks  
231 South LaSalle Street, Suite 1500  
Chicago, IL 60604

City of East Chicago  
Jezeel Rodriguez  
4444 Railroad Avenue  
East Chicago, IN 46312

Indiana Department of Natural Resources  
Brian Breidert  
100 West Water Street  
Michigan City, IN 46360-1310

Indiana Department of Natural Resources  
Steve Davis  
100 West Water Street  
Michigan City, IN 46360-1310

Indiana Department of Natural Resources  
Division of Law Enforcement  
District 10 Headquarters  
100 West Water Street  
Michigan City, IN 46360

Lake County Drainage Board  
2293 North Main Street  
Crown Point, IN 46307

Little Calumet River Basin Development  
Commission  
Dan Repay  
900 Ridge Road  
Munster, IN 46321

Staff Assignment:

Administrative  
Environmental  
Fish and Wildlife  
Law Enforcement  
Historic Preservation & Archaeology

Markita Shepherdson, CFM  
J. Matthew Buffington  
Nathan D. Thomas  
Tom Torsell  
Cathy Draeger-Williams

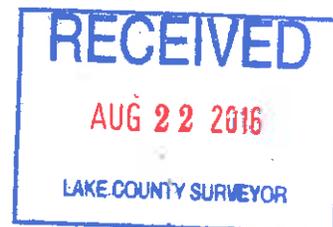


5-B-3  
9-21-16

Spring Creek Condominium  
Association, Inc.

## Memo

To: Lake County Surveyor  
From: Peter Bylen  
Date: 8/19/2016  
Re: County property behind 9324 Spring Creek Drive (Highland)



A hazardous condition exists with trees on county property behind 9324 Spring Creek Drive where limbs are currently brushing against the side of the building, roof and even the windows of a unit. At the very least these limbs need to be removed and plans made to remove the trees as they pose a hazard. Please confirm that this matter will **get** the county's attention.

A handwritten signature in black ink, appearing to read "Peter Bylen".

---

Peter Bylen, Property Manager  
1st American Management Company, Inc., as Agent for  
Spring Creek Condominium Association, Inc.  
3408 Enterprise Avenue  
Valparaiso IN 46383  
(219) 464-3536 x 310  
(219) 465-6014, fax  
[pbylen@1stpropertymanagers.com](mailto:pbylen@1stpropertymanagers.com)





# Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

5-B-3  
9-21-16

Bill Emerson, Jr.  
County Surveyor

May 24, 2016

Bill Emerson, Jr.  
Lake County Surveyor  
2293 North Main Street  
Crown Point, Indiana 46307

RE: Spring Street Ditch – Inspection  
9316 Spring Creek Drive, Highland  
North Township

Dear Bill,

As per your direction, an inspection of the banks of the Spring Street Ditch was conducted on Tuesday May 24, 2016 at 9316 Spring Creek Drive in Highland. The inspection was prompted by landowner, Jocelyn Riley, with regard to the trees along the banks of the ditch (see attached photographs) and bank erosion. Ms. Riley explained in detail that the trees were hindering the flow and others had fallen on the top of the bank.

It is evident that the land within the easement is well kept by the Spring Creek Condominium Association by the appearance of the lawn, even the property not owned by the association. However, though we recognize that no action on our part is required by law, ordinance or precedent for trees that fall on top of the ditch banks, at your direction I will have our drainage clearing and snagging crew to inspect the site and remove the trees in question that are obstructing the flow.

Although there is minimal erosion in this area, the stream is functioning properly, and the minimal erosion does not rise to the level of a priority bank repair. The property owner should be aware that they are free to make whatever improvements they deem appropriate after applying to the Lake County Drainage Board.

Respectfully,

Daniel V. Gossman  
Drainage Administrator

Encl

Cc: Gerry Scheub, Chairman Lake County Drainage Board  
Tom Regalado, Assistant Drainage Administrator  
Cliff Duggan, Legal Advisor  
Peter Katic, Lake County Drainage Board Attorney  
Jamie Blankman, North Township Advisory Committee Representative  
Lake County Drainage Board & Advisory Committee  
Peter Visclosky, U.S. Congressman – 1<sup>st</sup> District Indiana  
Jocelyn Riley, 9316 Spring Creek Drive Highland





**Bill Emerson, Jr.**  
*County Surveyor*

# *Office of the Lake County Surveyor*

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750





5-B-4  
9-21-16

BLANEY & WALTON  
ATTORNEYS AT LAW

DANIEL C. BLANEY  
dblaney@blaneyandwalton.com

ALISA L. RUDE  
Alisa@blaneyandwalton.com

124 EAST STATE STREET  
P.O. BOX 500  
MOROCCO, INDIANA 47963  
(219) 285-2008

FACSIMILE  
(219) 285-6899

EARL D. WALTON (Retired)  
ROBERT S. NESBITT (1948-1989)

August 31, 2016

Bill Emerson, JR., Surveyor  
Dan Gossman  
Government Center  
2293 N. Main St. 3<sup>rd</sup> Floor  
Crown Point, IN 46307

Gentlemen:

I have a client, John and Hong Brannen, who live at 1126 E. Cambridge Dr, Schererville; this is in the subdivision that is immediately behind the old Menards store.

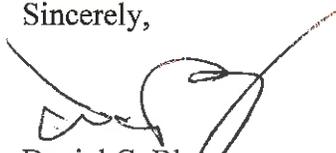
The Brannen's have been having trouble for the past several years with water getting into their basement. I have met with Dave VanDyke of Precision Development and Dave was kind enough to take me to show how the water leaves the subdivision into the Schererville ditch, into the Dyer ditch and into the Little Calumet. It appears that the ditch coming out of the subdivision, Schererville ditch, needs some maintenance on it. It appears to me that the water table has been raised in the subdivision due to inadequate drainage.

I would appreciate it, if you would have Dan give me a call to discuss this situation.

There has been trouble with beaver dams down near the point where the Schererville ditch joins the Dyer ditch and it raises the stream about 3 to 4 feet. I did not see any beaver dams however on the tour with VanDyke.

I would appreciate hearing from you.

Sincerely,

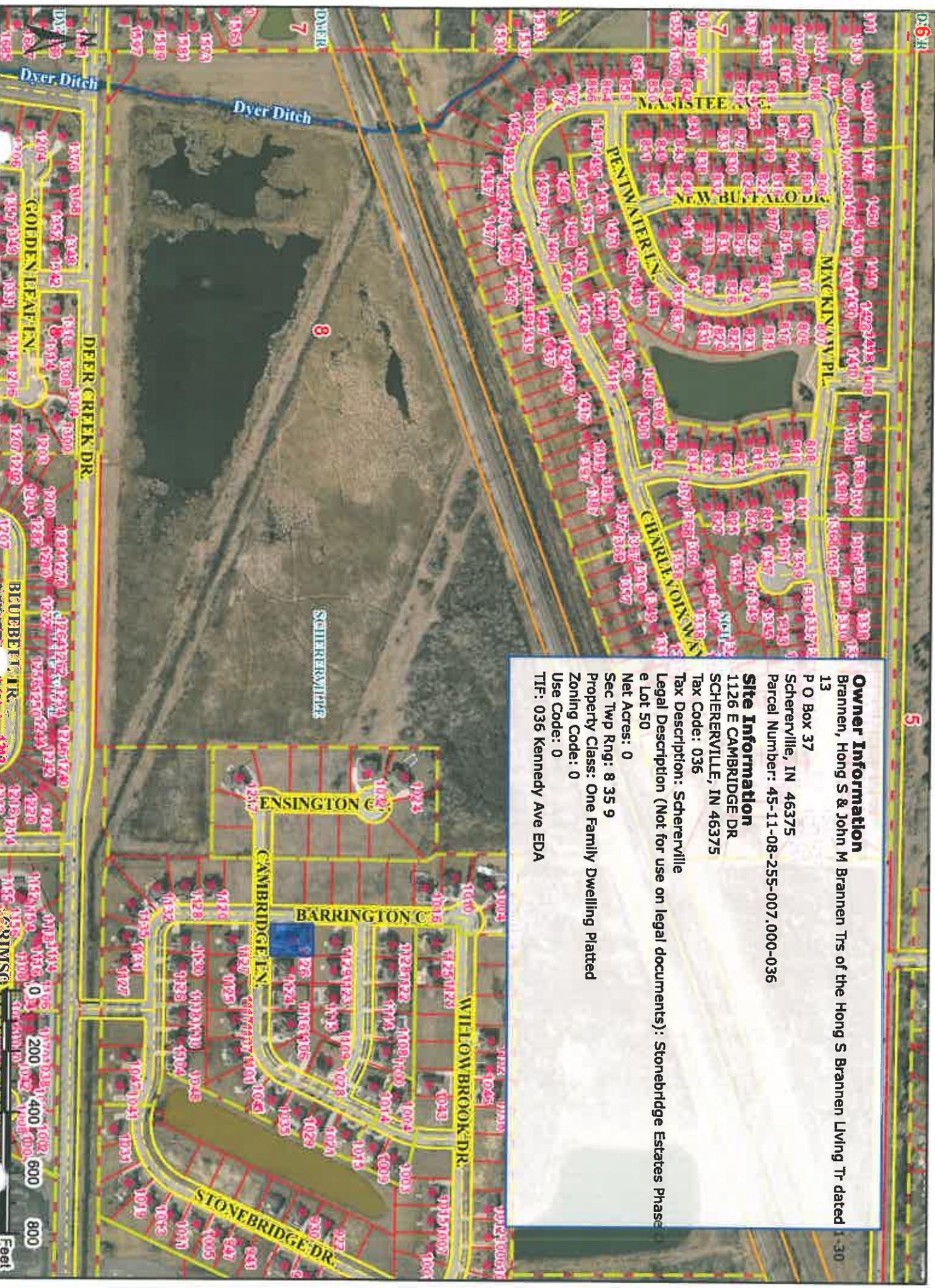


Daniel C. Blaney

DCB/ceh

cc: John Brannen





**Owner Information**  
 Brannen, Hong S & John M Brannen Trs of the Hong S Brannen Living Tr- dated 13  
 P O Box 37  
 Schererville, IN 46375  
 Parcel Number: 45-11-08-255-007.000-036

**Site Information**  
 1126 E CAMBRIDGE DR  
 SCHERERVILLE, IN 46375

**Tax Code: 036**  
**Tax Description: Schererville**  
**Legal Description (Not for use on legal documents): Stonebridge Estates Phase e Lot 50**  
**Net Acres: 0**  
**Sec Twp Rng: 8 35 9**  
**Property Class: One Family Dwelling Platted**  
**Zoning Code: 0**  
**Use Code: 0**  
**TIF: 036 Kennedy Ave EDA**

5-B-4  
9-21-16



# Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

*Bill Emerson, Jr.*  
*County Surveyor*

September 12, 2016

Daniel C. Blaney  
Blaney & Walton, Attorneys at Law  
124 East State Street  
P.O. Box 500  
Morocco, Indiana 47963

RE: Schererville Ditch/Dyer Ditch at Teibel Ponds  
Schererville, St John Township

Dear Mr. Blaney,

Lake County Surveyor Bill Emerson, Jr. has asked that I respond to your letter dated August 31, 2016 in reference to the Schererville Ditch, Dyer Ditch and what we refer to as the Teibel Ponds. I have included several documents for your review that will give a little history of the ditches and ponds.

The ponds that were constructed were part of a regional stormwater storage facility that was partially funded by INDOT in order to relieve INDOT of providing its own stormwater detention basins as part of their highway improvements for the US 30 and US 41 corridors in 1995 and 1996. These ponds were designed and constructed to hold/retain stormwater. They were never designed to be dry bottom ponds.

While it is true that obstructions sometimes occur in both the Schererville and Dyer Ditches, the county has an excellent working relationship with each municipality and when notified by a property owner a coordinated effort is used to remove the obstruction. These areas are also what we refer to as one of our "hot spots", which we check on a regular basis.

The Lake County Surveyor/Lake County Drainage Board is currently reviewing with the Town of Schererville, the town's proposal for walking/hiking trails around the ponds. This includes some minor repairs of culverts to restore some function of stormwater retainage in the ponds. The county is also looking into verifying that the ponds current elevations are near to what they were designed for and constructed to. If there is a significant discrepancy, the County and the Town will have to prepare plans to restore the ponds to their original design and capacity. As you can see in the attached aerial photograph, the fully constructed ponds in 1998 held a significant amount of stormwater. But this has decreased in the aerial of 2005 and especially in the 2013 aerial.



# Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

*Bill Emerson, Jr.*  
County Surveyor

The county has been contacted by a couple of residents within the Stonebridge Estates Subdivision regarding the same issue as your clients. Unfortunately, this area was designed to hold a significant amount of stormwater, which in turn will increase the water table for the surrounding area.

If you need additional information or have any questions, please do not hesitate to contact our office.

Sincerely,

Daniel V. Gossman  
Drainage Administrator

Cc: Bill Emerson, Jr., Lake County Surveyor  
Jean Shepherd, St John Township Advisory Committee Representative  
Lake County Drainage Board & Advisory Committee



1998 Aerial



2005 Aerial



2013 Aerial



## **DYER/SCHERERVILLE STORMWATER MANAGEMENT PONDS**

### **Introduction**

The Dyer/Schererville Stormwater Management Ponds receive stormwater runoff from Dyer Ditch, Schererville Ditch, and a small, unnamed ditch that enters the South Pond on its south side (Figure 15). Dyer Ditch flows north along the west side of the South Pond where water is released from the ditch to the pond during high flows. When the South Pond exceeds its holding capacity, an outlet pipe on the north side releases water into the North Pond. The Schererville Ditch flows northwest before entering the North Pond on its southeast side. The North Pond releases water back into Schererville Ditch through an outlet on the pond's southwest side. Just north of the South Pond, the Schererville and Dyer Ditches join and flow northwest away from the area. The Dyer/Schererville Stormwater Management Ponds were given high priority due to erosive forces and breakdowns that have altered the intended hydrology of the facility.

### **North Pond**

The Schererville Ditch flows northwest into the North Pond. The North Pond then releases water back into the Schererville Ditch through an outlet on its southwest bank (Figure 15). The majority of the problems encountered on the North Pond were caused by high flows which have eroded the grade control structures on the southwest bank.

At Site A (Figures 15 and 16), high flows have eroded an outlet below the intended holding capacity of the pond. This site would benefit from the construction of a standard parabolic riprap spillway outlet (Appendix E) at an estimated cost of \$6,000. Parabolic, armored structures can handle large flows and can dissipate their energy.

Site B (Figures 15 and 17) illustrates the concrete outlet structure that was built to carry water from the North Pond back to the Schererville Ditch. It is not functioning because of the lowered water level created by the eroded outlet described above and possibly because it was built above grade. This structure, which had previously failed, should be destroyed and its materials used in construction of the outlet recommended for Site A.

### **South Pond**

The South Pond receives water from Dyer Ditch and from a small ditch that drains agricultural land to the south during large runoff events (Figure 15). The South Pond releases water through an outlet pipe into the North Pond when its carrying capacity has been exceeded. Agricultural erosion and large volumes of water traveling at high velocities have had notable impacts on the South Pond.

At Site C (Figures 15 and 18), erosion has occurred on the inlet/outlet structure between Dyer Ditch and the western bank of the South Pond. The area should be resloped, seeded with a slope stabilization mix, and stabilized with coconut fabric and riprap (Appendix A and B). This project is estimated at \$1,500.

Figures 15 and 18 of Site D depict the steep, eroded western banks of Dyer Ditch. The landowner farms up to the edge of the ditch. Installation of a 30-ft-wide filter strip (Appendix H) would improve water quality and would cost \$400-\$1,200 (not including USDA cost-share) for

the entire reach near the ponds. Filter strips may also decrease maintenance needs within the South Pond by preventing sediment loss from the land.

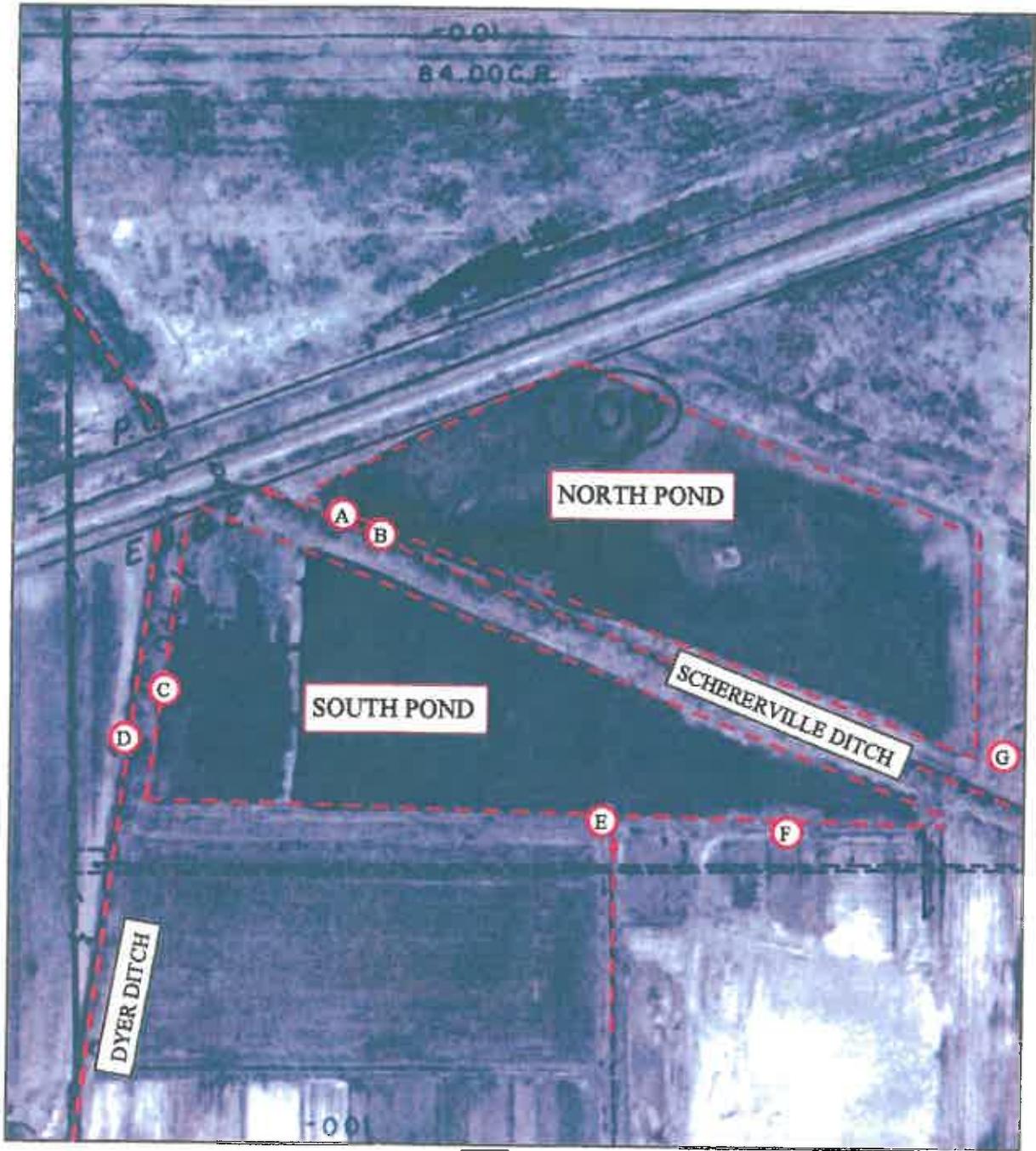
At Site E (Figures 15 and 19), An inlet pipe has introduced sediment and caused erosion near the southeast corner of the South Pond (Site E; Figures 15 and 19). Planting cattails (*Typha* sp.) and river bulrush (*Scirpus fluviatilis*) and lining the site with riprap would cost approximately \$500.

Erosion caused by overland, sheet-flow runoff was documented on the south bank of the South Pond at Site F (Figures 15 and 19). Three eroded holes like that in Figure 19 were noted during the survey. Check dams/grade controls (Appendix I) costing 300 dollars each could be installed at these sites. The eroded holes should be backfilled to repair the damage, and check dams or grade control structures costing about \$300 each should be installed to allow the water to be released slowly to South Pond. A second, more expensive option would be the installation of a berm with riprap-armored outlets to South Pond (Appendix D). The berm would cost an estimated \$8,000 including seeding

Figure 19 (Site G) depicts typical erosion on Schererville Ditch east of both the North and South Ponds. A riprap toe (Appendix J) could be constructed on the banks of this area costing approximately \$5/ft. Riprap toe stabilization structures stabilize stream banks and protect their bases from undercutting. The project would also decrease the sediment loading to the North Pond.

### Summary

The Dyer/Shererville Stormwater Management Ponds are of secondary priority for maintenance due to altered grade control on the North Pond which is compromising water retention capacity and storm water treatment capabilities. The inlet/outlet structure of the South Pond is damaged and merits reconstruction. If the recommended maintenance plans are completed, the facility will function as intended and future maintenance will be minimalized.

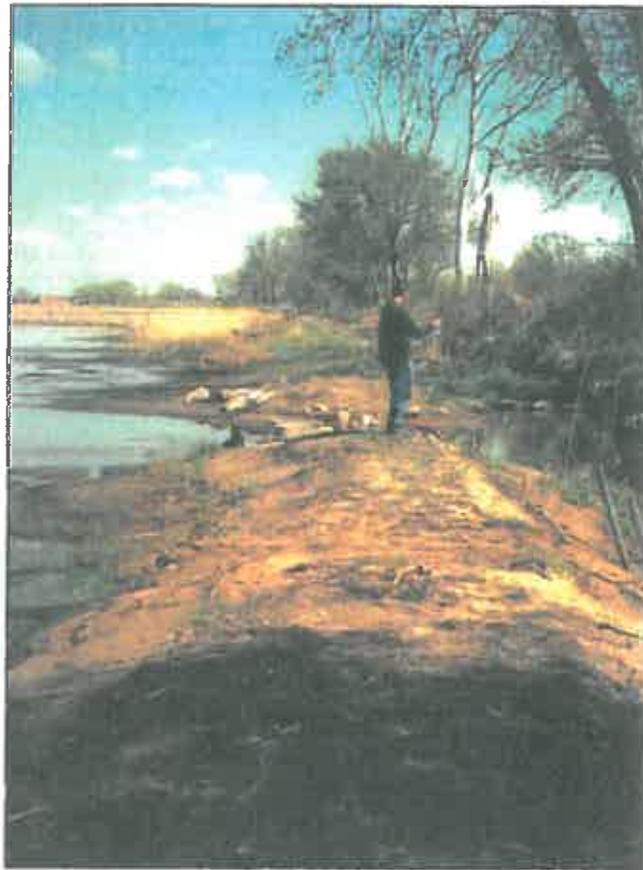


Scale: 1" = 400'

**Figure 15: Dyer/Schererville Stormwater Ponds  
Aerial Map, Spring 1998  
Site Locations  
Lake County, Indiana**



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



Site A, facing east



Site A, facing west

**Figure 16: Dyer/Schererville North Stormwater Pond  
Site Photographs  
Site A  
Lake County, Indiana**





Site B, facing northeast



Site B, facing southwest

**Figure 17: Dyer/Schererville North Stormwater Pond  
Site Photographs  
Site B  
Lake County, Indiana**





Site C



Site D

**Figure 18: Dyer/Schererville South Stormwater Pond and Dyer Ditch  
Site Photographs  
Sites C and D  
Lake County, Indiana**





**Site E**



**Site F**



**Site G**

**Figure 19: Dyer/Shererville South Storage Pond and Schererville Ditch  
Site Photographs  
Sites E, F and G  
Lake County, Indiana**

## AGREEMENT

THIS AGREEMENT is entered into this \_\_\_\_\_ day of \_\_\_\_\_, 1992 between **RICHARD M. TEIBEL** and **CAROLYN R. TEIBEL**, hereinafter referred to as "Owner", **TOWN OF SCHERERVILLE**, hereafter referred to as "Town" and the **LAKE COUNTY DRAINAGE BOARD**, hereafter referred to as "Board".

NOW, THEREFORE, in consideration of the mutual promises contained herein, the Town, Board and Owner do mutually agree as follows:

1. Subject to conditions precedent, which are defined more particularly in Paragraphs 4A to C of this Agreement, Owner agrees to give, donate and transfer to the Town clear title in fee simple, including mineral rights, to real property located adjacent to the confluence of Dyer Ditch and Schererville Ditch, which property will provide 240 acre-feet of storm water storage. The total acreage of said land will not exceed 36 acres. The legal description is found in Exhibit "A", which is attached hereto and made a part hereof.
2. Owner shall retain rights to top soil (black dirt) on said real estate which shall be removed by Owner at Owner's expense.
3. Owner shall not receive any compensation for and the Town or Board shall not pay any compensation for said real property.
4. The conditions precedent to the transfer of property shall be as follows:
  - a. Removal of developer's, or related entities owned by developers, adjacent property from the flood plain, as evidenced by a conditional letter of map revision from FEMA.
  - b. The Town and Board shall, at their own expense and at no cost to developer,

fulfill or cause to be fulfilled the conditions of the conditional letter of map revision.

c. The agreement shall terminate after 2 years, should the removal from the flood plain not occur, or may be renewed by written agreement of all parties and for an agreed period of time. A reasonable extension of time shall be granted to fulfill the conditions of the conditional letter of map revision.

5. The Town and Board shall use said real property as storm water retention and shall be responsible for any and all construction and remove materials, including but not limited to any clay, sand or other materials, except top soil (black dirt), without compensation to Owner as outlined in above Paragraph 3.

6. Developer will allow access to the Town or Board after the receipt of the conditional letter of credit to perform work in accordance with above Paragraphs 4 and 5.

7. The Town or Board may enter into agreements with other agencies, business or entities, including but not limited to the Indiana Department of Transportation in the performance of the rights and responsibilities enumerated to this Agreement.

8. The resulting drain and waterway shall be part of the county regulated drain system, and the Board shall have jurisdiction thereon as described in Indiana Statutes.

TOWN OF SCHERERVILLE

By: \_\_\_\_\_

\_\_\_\_\_  
RICHARD M. TEIBEL, Owner



LEGAL DESCRIPTION

TO BE DETERMINED.

Exhibit "A"



INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue  
Room N755

Indianapolis, Indiana 46204-2249

(317) 232-5533

FAX: (317) 232-0238

EVAN BAYH, Governor  
FREDERICK C. POOL, Commissioner

RECEIVED  
January 9 1995  
JAN 13 1995

Writer's Direct Line:  
(317) 232-5336

Ms. Mary Jaskula  
Town Council President  
833 W. Lincoln Highway  
Schererville, IN 46375

LAKE COUNTY  
DRAINAGE BOARD

RE: Dyer Ditch Watershed Project  
US 30 Reconstruction Project  
US 41 Future Improvements

RECEIVED  
JAN 13 1995

Dear Ms. Jaskula:

LAKE COUNTY SURVEYOR

On December 16, 1994 we met with representatives of the Lake County Surveyor's Office to discuss stormwater management for the above referenced projects. During that meeting INDOT indicated a willingness to contribute \$626,014.42 to the construction of the Lake County "Dyer-Schererville Regional Stormwater Management Project." This contribution will relieve INDOT of providing its own independent stormwater detention basins for several proposed highway improvements on US 30 and US 41.

Also discussed at the meeting was the possibility of INDOT assessing the municipalities of Dyer and Schererville for their share of the cost of the proposed sewer trunk lines along US 30 and US 41. It was suggested that each town be assessed according to the percentage of runoff in the sewers that comes from outside of the INDOT right-of-way.

After re-examining our position, INDOT has determined that we will not pursue assessment of local governments for participation in storm sewer trunk line costs on the US 30 project.

Very truly yours,

David M. Pluckebaum  
Deputy Chief Engineer  
Indiana Dept. of Transportation

DMP/THS/ms

cc: George Van Til  
Steve Kil  
Amy Keusch  
Steve Nezovich



INDIANA DEPARTMENT OF TRANSPORTATION  
 100 North Senate Avenue  
 Room N755  
 Indianapolis, Indiana 46204-2249  
 (317) 232-5533 FAX: (317) 232-0238

EVAN BAYH, Governor  
 FREDERICK C. P'POOL, Commissioner

Writer's Direct Line:  
 (317) 232-5336

RECEIVED  
 January 9, 1995  
 JAN 13 1995

Ms. Catherine Koschal  
 Town Council President  
 One Town Square  
 Dyer, IN 46311

LAKE COUNTY  
 DRAINAGE BOARD  
 RECEIVED  
 JAN 13 1995  
 LAKE COUNTY SURVEYOR

RE: Dyer Ditch Watershed Project  
 US 30 Reconstruction Project  
 US 41 Future Improvements

Dear Ms. Koschal:

On December 16, 1994 we met with representatives of the Lake County Surveyor's Office to discuss stormwater management for the above referenced projects. During that meeting INDOT indicated a willingness to contribute \$626,014.42 to the construction of the Lake County "Dyer-Schererville Regional Stormwater Management Project." This contribution will relieve INDOT of providing its own independent stormwater detention basins for several proposed highway improvements on US 30 and US 41.

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Very truly yours,

David M. Pluckebaum  
 Deputy Chief Engineer  
 Indiana Dept. of Transportation

DMP/THS/ms

cc: George Van Til  
 Glen Eberly  
 Amy Keusch  
 Steve Nezovich



77 South Girls School Road TEL 317-241-8336  
 Indianapolis, Indiana 46231 FAX 317-241-0765

TO: CHRISTOPHER B BURKE, CBBEL  
DAVID HAHN, McDonough  
GEORGE VAN TIL, LAKE COUNTY

DATE: 12-30-94  
 PROJECT: US 30/US 41  
DRAINAGE STUDY

TRANSMITTING:  Herewith  
 Under Separate Cover

BY: Messenger  
 Mail

ENCLOSED:  Prints  
 Specification  
 Shop Drawings  
 Copies  
 Other

FOR: Approval   
 Your Files   
 Your Reference   
 Distribution   
 Per Your Request

COPIES	DESCRIPTION
1	SET - REVISED SHEETS OF THE US 30/US 41

REMARKS: PLEASE REPLACE LIKE SHEETS IN YOUR  
COPY OF THE PRELIMINARY DRAFT TO  
CREATE A "FINAL" DRAFT.

Copies to:

Sincerely,

BROCK RIDGWAY



77 South Girls School Road    TEL 317-241-8336  
Indianapolis, Indiana 46231    FAX 317-241-0765

December 30, 1994

Mr. Thomas Seeman  
Manager, Consultant Services  
Indiana Department of Transportation  
IGCN, Rm N642  
100 N. Senate Ave  
Indianapolis, IN            46204

Re: Drainage Study of U.S. 30 / U.S. 41 in Lake County

Dear Mr. Seeman:

Please find following the final draft of the Drainage Study of the US 30 and US 41 Corridors in Lake County.

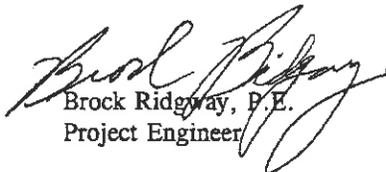
We have broken down the cost allocation to the municipal level, and further subdivided the costs based on the timing of the construction of the INDOT projects.

We are providing copies of this report to Lake County, their drainage Consultant, and the Consultant representing the Towns of Dyer and Schererville. The individuals who were sent copies are:

Mr. George Van Til.....Lake County Surveyor  
Mr. Christopher B. Burke.....CBBEL  
Mr. David Hahn.....McDonough Environmental, Inc.

We appreciate this opportunity to assist you in resolving the drainage issues in Lake County. If we can be of additional service, please contact us.

Very Truly Yours,  
MAURER-MCGILLEM ENGINEERS, INC.

  
Brock Ridgway, P.E.  
Project Engineer

cc: Steve Nezovich, INDOT Design  
Merril Dougherty, INDOT Design  
Michael Breach, MME  
File: 8617C  
Rdg

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Formerly D. E. McGillem and Associates, Inc.

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## U.S. 30 / U.S. 41 Corridor Drainage Study

### INTRODUCTION

#### BACKGROUND

The Indiana Department of Transportation (INDOT) is engaged in an ongoing program to improve traffic conditions in Lake County, Indiana, through the reconstruction of the major urban arterials. U.S. 30 and U.S. 41 are the primary routes involved in this effort. One section of U.S. 30 from the Illinois State Line east to the CSX railway is already under construction. The section of U.S. 30 from the CSX railway east to U.S. 41, the intersection of U.S. 30 and U.S. 41, and the railway bridge over U.S. 30 east of U.S. 41 are all currently being designed. Improvements to U.S. 41 from 77th Ave north to the E, J & E railway are in the project development phase.

All of the new construction will involve changing existing shouldered highway to a cross section with curbing and gutters. Work will include full storm sewer construction to conduct runoff to regulated ditches under the jurisdiction of Lake County. Plans call for the highway runoff, to include that water which comes to the State Right-of-Way from offsite, to be carried to either the Dyer, Schilling, or Schererville ditches in these new storm sewer networks. These ditches all combine approximately two miles northwest of the intersection of U.S. 30 and U.S. 41.

In an effort to control flooding in this area of the county, the Lake County Surveyor's Office has developed a plan that includes the improvement of their regulated ditches and the construction of a 240 acre-feet detention basin at the confluence of the three ditches.

Due to the fact that the highway improvements will dramatically increase the flow entering the three ditches, Lake County has asked that INDOT participate in their program rather than develop their own detention plan. This cooperation is considered to be in best interests of both INDOT and Lake County.

#### PROJECT PURPOSE

The intent of this drainage study is to provide the engineering data necessary for INDOT and Lake County to reach an informed agreement about the actual State contribution to Lake County's drainage project. It will also identify that portion of the water which enters the storm sewers from Local areas. This will determine the cost which may be borne by the municipalities which benefit from the proposed work. Herein is determined the cost to the State to discharge the storm sewers into the regulated ditches, in exchange for which the State will not have to develop local detention at these three locations.



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## TECHNICAL PROCEDURES

The methods and reference data for this study are as follows:

Hydrographs were produced using Eagle Point's Watershed Modeling Package. This software creates and combines hydrographs using the SCS TR-20 procedures. Time of Concentration values were developed using the SCS TR-55 procedures, with an additional category of travel time added to account for time in the storm sewer.

Areas were determined and Curve Numbers (CNs) were found using standard SCS procedures. Areas of mixed conditions were weighted to establish an average CN for the composite area.

The source of Rainfall Data for Lake County was the National Weather Service's HYDRO-35 rainfall database. The rainfall distribution used was the HUFF - 3rd Quartile, which was distributed over a 24-hour storm to maintain consistency with the standard SCS distributions.

Topographic information was derived from U.S.G.S. maps and for the region west of Dyer Ditch, from maps prepared by Clark Dietz, Inc.

## OPERATIONAL PROCEDURES

### LIMITS

The limits of this study are as follows:

- West - on US 30, at Church Street in the Town of Dyer.
- East - on US 30, just east of the Conrail underpass east of US 41
- North - on US 41, at the Elgin, Joliet and Eastern Railway
- South - on US 41, at 77th Ave.

These limits are the most extreme locations to enter the proposed storm sewers.

## PROJECT LAYOUT

To simplify the identification of contributing areas, the study was divided into regions which are labeled based on where the water is going. The Regions are labeled as follows:

- Region A** - Areas west of and discharging into Dyer Ditch (Within the Town of Dyer)
- Region B** - Areas east of and discharging into Dyer Ditch (Within the Town of Schererville)
- Region C** - Areas west of and discharging into Schilling Ditch (Within the Town of Schererville)
- Region D** - Areas east of and discharging into Schilling Ditch (Within the Town of Schererville)
- Region E** - Areas south of and discharging into Schererville Ditch (Within the Town of Schererville)
- Region F** - Areas north of and discharging into Schererville Ditch (Within the Town of Schererville)



These regions can be found on the **Region Map** at the end of this section. Each region was broken into Groups, which are either fully within State R/W or fully outside of the R/W. No Group includes both State and Local Areas. This breakdown facilitates the preparation of hydrographs later which are used to determine the portions of State or Local discharge entering the ditches. These Groups are labeled with a letter and a number - for the Region they are in and the Group's individual number. For example, Group B3 is Region B, Group 3.

Each group was prepared from a number of subareas. These subareas are labeled in sequence for the Group they are in. For example, Area B3-25 would be Region B, Group 3, Area 25. Sequence numbers for the areas are not repeated in any Region, to avoid confusion from having Areas with the same number near each other.

The subareas were identified by the inlet to which they contribute. TR-20 does not work well with small areas, thus the Areas were combined into the Groups. A weighted Curve Number and Total Acreage for each Group was calculated from these Areas.

### **TIME of CONCENTRATION**

Time of concentration was determined using TR-55 procedures. This method divides the travel time of the runoff into Sheet Flow, Shallow Flow and Channel Flow. Whereas the Sheet and Shallow flow apply well to the analysis of each Group, Channel Flow does not apply well to flow in the storm sewers. Among other difficulties, it assumes that Channel Flow is Open-Channel Flow, not flow in a closed pipe. For this reason, the use of the Channel Flow category was limited to those locations where these well-developed ditches exist. This situation exists only in Regions E and F.

Although TR-20 was required as the means of hydrograph analysis for this study, it is not readily applicable to the analysis of a basin with storm sewers. It was important, however, to maintain the discharge attenuation and translation that occurs as the water moves through the pipes. A very significant advantage of TR-20 is that it creates this effect.

In discussions with representatives of Christopher B. Burke Engineering, Ltd (CBBEL), drainage consultant for Lake County, it was agreed that the best way to recognize the travel time that occurs in the pipes was to add that time to the time of concentration for the Group. Thus, each Group has Sheet Flow, Shallow Flow, then either a Channel Flow or a Time in Sewer, which are summed to derive a total Time of Concentration for the Group. This Time in Sewer was derived from the Length of the Sewer and an average velocity.

All the values used in the Time of Concentration are listed by Group on the Tables presented with each Region.

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## HYDROGRAPH GENERATION

Hydrographs were created for each Group. This process started with the creation of Unit Hydrographs for each Group, for either the Existing or Proposed Condition. These were created within our software using the SCS Curvilinear Unit Hydrograph Model.

By coordinating the appropriate Unit Hydrograph with a Storm Distribution of the desired Storm Frequency, Runoff Hydrographs were generated. The Group Hydrographs were then combined within each Region to create Regional Hydrographs. The Regional Hydrographs generated were:

Existing Conditions, 10-yr Storm  
Proposed Conditions, 50-yr Storm, ALL Groups  
Proposed Conditions, 50-yr Storm, STATE Groups Only  
Proposed Conditions, 100-yr Storm, ALL Groups

For more specific information on the combining and processing of Hydrographs, see the respective Region and Ditch Sections.

## DETERMINATION of REQUIRED POND STORAGE VOLUME

It was agreed by INDOT and Lake County that the peak discharge resulting from a 10-year Storm on the Existing Conditions would be determined and assigned as the "maximum allowable" discharge into the three regulated ditches. Any discharge in excess of this rate is to be stored in a detention pond prior to being released into the ditch.

Discharge Hydrographs of the 50-year Storm over the Proposed Conditions were created, which are to be used as the design discharge entering the ditches. The 50-yr Hydrograph was used because the Storm Sewers are designed on a 50-yr Storm, with anything in excess of that being temporarily stored on the roadway.

The volume of the required pond was determined by finding the volume under the 50-yr discharge hydrograph which was above the base rate established by the 10-yr peak. A pond of this required storage volume is to be used for cost determination purposes, though the ponds will not actually be built.

## STATE vs LOCAL PORTIONS of DISCHARGE and STORAGE VOLUME

As a part of the 50-yr study for the proposed conditions, hydrographs were created for ALL Groups and also for STATE Only Groups. This allows the establishment of which percentage of the discharge comes from the State R/W and which comes from off the R/W.

This percentage determination, which is performed for each ditch, establishes a State % and a Local % of both the discharge flowing through the storm sewer trunk lines and also of the water which is detained in the pond.



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These percentages are used in the Cost Allocation Section at the end of this report. Please see that section for further details.

### **COST of the STORM SEWER TRUNK LINES**

Part of the suggested cost determination is an estimate for the State's proposed Storm Sewer Trunk Line. This is to be established considering only the main trunk line and the connecting manholes. Catch basins, inlets and branch lines were not considered.

The quantities for this estimate were taken from the construction plans where available (US 30). For US 41, the Preliminary Design Study prepared by Beam, Longest, and Neff was used. The pipe sizes and quantities were readily available but appropriately sized and spaced manholes had to be added, using a maximum 300' between manholes as a guide.

Price per unit information was drawn from the State's HIGH-EST Program and the Unit Price Index. See the sections on the Storm Sewer Trunk Lines and the State Cost Allocation for further information.

### **POND COST ESTIMATION**

The cost of the Ponds is to be the full cost of construction, land acquisition and miscellaneous development. Three ponds are to be estimated, one for each ditch in the study.

Specific cost categories and details can be found in the section Pond at Dyer Ditch, etc.

### **STATE COST ALLOCATION**

The presentation of the State's proposed contribution to the Lake County Drainage Project, as well as the municipal allocations of Storm Sewer costs are in this section.



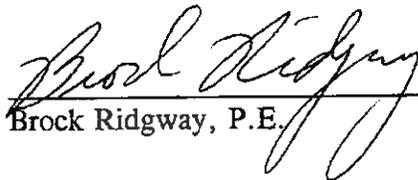
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**ENGINEER'S STATEMENT**

It is the intent of this report to provide the engineering data necessary for representatives of INDOT, Lake County and the various municipalities to enter into an informed agreement about the disposition of the storm water in the US 30 / US 41 Corridors.

It is my intent to provide an analysis which presents meaningful and accurate engineering data, using the best information and techniques practicable. Comments or questions are welcome.



  
Brock Ridgway, P.E.

12-30-94



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# MAP

OF

# LAKE COUNTY

# INDIANA

# LAKE

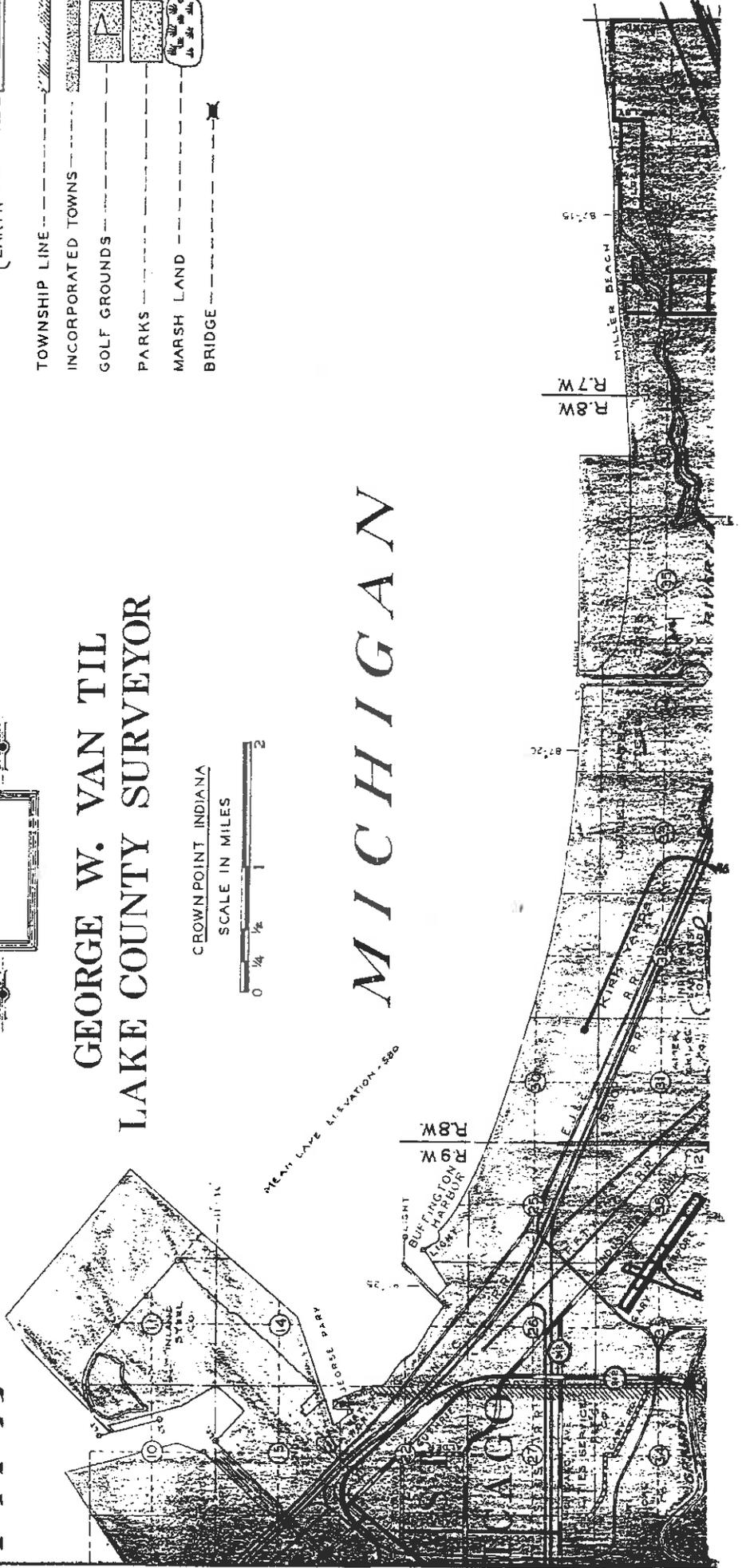
## GEORGE W. VAN TIL LAKE COUNTY SURVEYOR

# MICHIGAN

### LEGEND

- EAST-WEST TOLL ROAD
- INTERSTATE HIGHWAYS
- U.S. HIGHWAYS
- STATE HIGHWAYS
- CONCRETE HIGHWAYS
- BLACK TOP HIGHWAYS
- STONE HIGHWAYS
- EARTH HIGHWAYS
- TOWNSHIP LINE
- INCORPORATED TOWNS
- GOLF GROUNDS
- PARKS
- MARSH LAND
- BRIDGE

CROWN POINT, INDIANA  
SCALE IN MILES

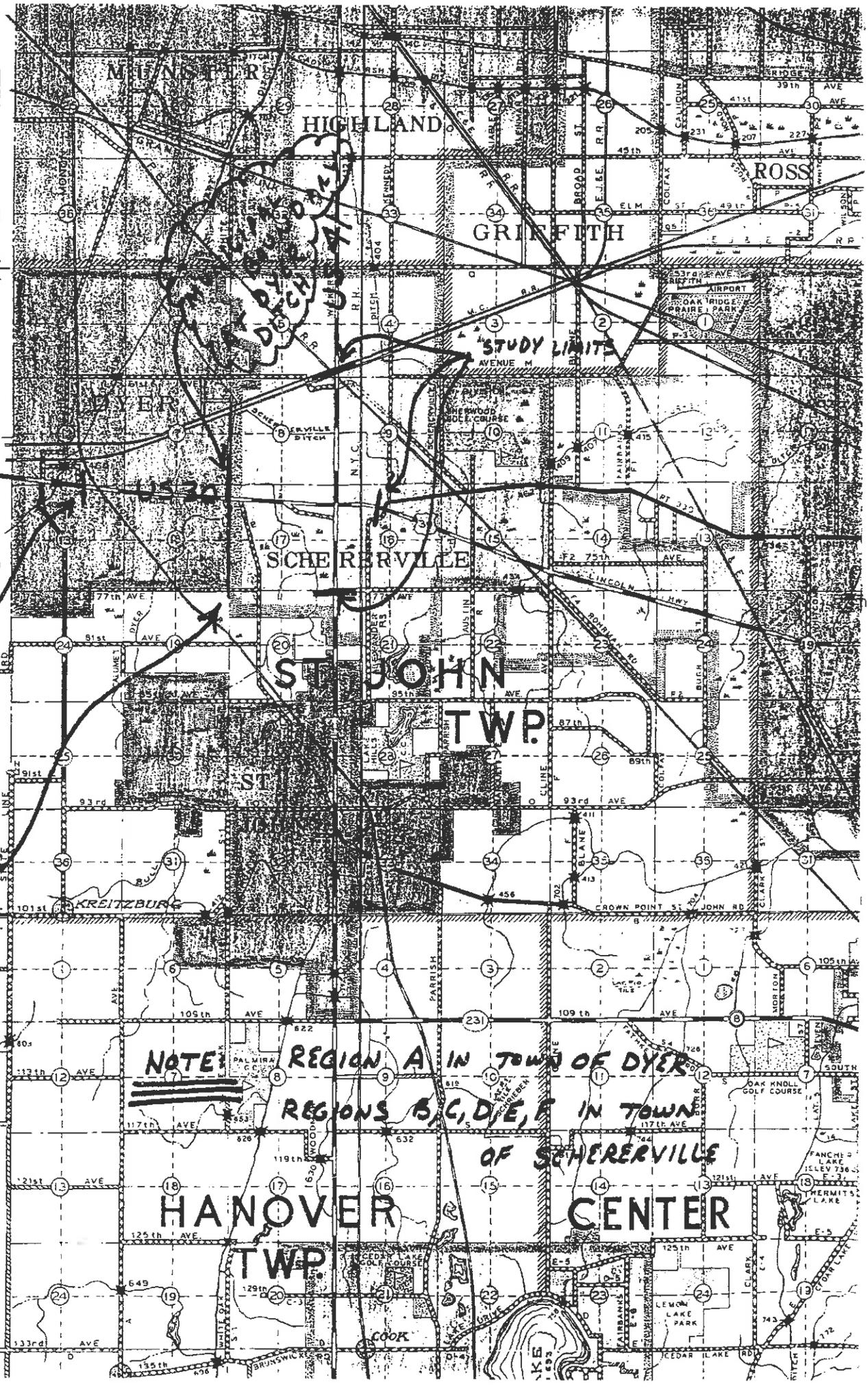


T. 36 N.  
T. 35 N.  
41° 30'  
41° 24'

**L**

**E**

**O**



## REGION A

### Summary and Comments

#### General Notes:

The areas in Region A are those areas west of Dyer Ditch which contribute to the storm sewer flowing eastward to Dyer Ditch. Region A is the only region for which good topographic maps were available for a detailed analysis of the contributing areas. For this reason, Region A served as a model for other portions of the study where the only available mapping was U.S.G.S. standard maps.

Values used for the TR-55 computations are presented in the tables following. Areas and Groups which are labeled on the maps are described on the following tables, listed in order by Group Code.

All rain falling north of the existing centerline, or north of the proposed curb, is considered to flow off of the State R/W without any direct or immediate contribution to Dyer Ditch. Because this water does not contribute to Dyer Ditch in "critical" time, it is excluded from this study, both for the existing and proposed conditions. This assumption has been confirmed with cross-sections of U.S. 30 and is held for Regions A, B, C and D. This is consistent with and has been agreed to by representatives of Lake County and their Consultant, (CBBEL).

#### Existing Conditions:

The areas that contribute to the existing 10-yr storm flow are labeled in Groups A5 and A10, which are State R/W and Local areas, respectively. The total area for region A is 5.2 acres. Areas identified are nearly identical to those shown in the previous study by Michael Kerr of CBBEL.

The peak flow rate for the 10-yr storm was found to be 1.32 cfs. This value is lower than that of CBBEL because a longer time of concentration was established for the Local areas (39 minutes compared to 30 minutes). This difference favors the County in the final cost calculation. This is considered consistent with CBBEL results with the noted exception. The summary of the existing hydrograph follows the tables.

#### Proposed Conditions:

The area contributing to the State storm sewer was found to be 70.05 acres. The region is broken into ten Groups, A1 through A5 for State areas, and A6 through A10 for Local areas. The full hydrograph for the proposed conditions with the 50-yr storm also follows. The result of the STATE ONLY areas was obtained with a combined hydrograph of Groups A1 through A5. Those results are presented within the Dyer Ditch section.



# REGION A

## AREAS WEST OF DYER DITCH

### EXISTING CONDITIONS

#### STATE AREAS

GROUP	AREA (acres)	SCS CN	SHEET FLOW		SHALLOW FLOW			CHANNEL FLOW			TIME IN SEWER (min)	TIME CONCENTRATION (min)	
			MANN. n	LENGTH L (ft)	SLOPE s	K	SLOPE s	LENGTH L (ft)	HYD. RAD. r	SLOPE s			MANN n
A5	1.40	84	.013	50	.020	1.60	.005	850	.000	.000	.000	0	14

#### LOCAL AREAS

GROUP	AREA (acres)	SCS CN	SHEET FLOW		SHALLOW FLOW			CHANNEL FLOW			TIME IN SEWER (min)	TIME CONCENTRATION (min)	
			MANN. n	LENGTH L (ft)	SLOPE s	K	SLOPE s	LENGTH L (ft)	HYD. RAD. r	SLOPE s			MANN n
A10	3.80	64	.400	300	.100	1.60	.005	750	.000	.000	.000	0	39

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# REGION A

## AREAS WEST OF DYER DITCH

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### PROPOSED CONDITIONS

#### STATE AREAS

GROUP	AREA (acres)	SCS CN	SHEET FLOW		SHALLOW FLOW			CHANNEL FLOW			TIME IN SEWER (min)	TIME CONCENTRATION (min)		
			MANN. n	LENGTH L (ft)	SLOPE s	K	SLOPE s	LENGTH L (ft)	HYD. RAD. r	SLOPE s			MANN n	LENGTH L (ft)
A1	2.09	92	.013	50	.030	2.00	.006	185	.000	.000	.000	0	24	27
A2	3.32	91	.013	50	.020	2.00	.005	90	.000	.000	.000	0	19	21
A3	2.94	91	.013	50	.020	2.00	.004	175	.000	.000	.000	0	13	16
A4	4.31	90	.013	50	.020	2.00	.003	190	.000	.000	.000	0	6	10
A5	1.40	84	.013	50	.020	2.00	.005	100	.000	.000	.000	0	2	8

#### LOCAL AREAS

GROUP	AREA (acres)	SCS CN	SHEET FLOW		SHALLOW FLOW			CHANNEL FLOW			TIME IN SEWER (min)	TIME CONCENTRATION (min)		
			MANN. n	LENGTH L (ft)	SLOPE s	K	SLOPE s	LENGTH L (ft)	HYD. RAD. r	SLOPE s			MANN n	LENGTH L (ft)
A6	8.33	80	.024	200	.020	0.70	.010	400	.000	.000	.000	0	23	37
A7	17.71	45	.400	200	.020	0.25	.020	850	.000	.000	.000	0	18	96
A8	16.84	58	.041	300	.010	1.00	.005	300	.000	.000	.000	0	15	33
A9	9.33	36	0.13	200	.020	0.70	.010	250	.000	.000	.000	0	7	28
A10	3.80	64	0.4	300	.100	2.00	.005	60	.000	.000	.000	0	2	30

## REGION B

### Summary and Comments

#### General Notes:

Region B encompasses those contributing areas east of and flowing to **Dyer Ditch**. Hydrographs generated for this region were combined with Region A to find the total discharge to **Dyer Ditch**, the results of which are presented in the **Dyer Ditch** section. Information is presented here in the same format as for Region A.

The exclusion of rainfall landing north of the existing centerline and north of the proposed curb was maintained for this region.

#### Existing Conditions:

The areas contributing in the existing condition total 4.11 acres. These are broken into a State and a Local Group, B1 and B4 respectively. The peak flow rate for these Groups is 1.60 cfs. Treatment of this region is consistent with the methodology used in Region A, though U.S.G.S. maps provided the only available topographic data.

#### Proposed Conditions:

The area contributing to the storm sewer network was found to be 18.73 acres. It is broken into six total Groups, three in the State R/W and three south of the R/W boundary. Hydrographs of Region B, both with ALL areas and with STATE ONLY areas, were combined with their Region A counterparts to produce the analysis of **Dyer Ditch**, results for which are presented in that section.

# REGION B

## AREAS EAST OF DYER DITCH

### EXISTING CONDITIONS

#### STATE AREAS

GROUP	AREA (acres)	SCS CN	SHEET FLOW		SHALLOW FLOW		CHANNEL FLOW			TIME IN SEWER (min)	TIME CONCENTRATION (min)		
			MANN. n	LENGTH L (ft)	SLOPE s	K	SLOPE s	LENGTH L (ft)	HYD. RAD. r			SLOPE s	MANN n
B1	1.56	93	.013	50	.020	1.60	.007	.000	.000	.000	.000	0	11

#### LOCAL AREAS

GROUP	AREA (acres)	SCS CN	SHEET FLOW		SHALLOW FLOW		CHANNEL FLOW			TIME IN SEWER (min)	TIME CONCENTRATION (min)		
			MANN. n	LENGTH L (ft)	SLOPE s	K	SLOPE s	LENGTH L (ft)	HYD. RAD. r			SLOPE s	MANN n
B4	2.55	78	.024	100	.020	1.60	.007	.000	.000	.000	.000	0	14

# REGION B

## AREAS EAST OF DYER DITCH

### PROPOSED CONDITIONS

#### STATE AREAS

GROUP	AREA (acres)	SCS CN	SHEET FLOW		SHALLOW FLOW		CHANNEL FLOW				TIME IN SEWER (min)	TIME CONCENTRATION (min)	
			MANN. n	LENGTH L (ft)	SLOPE s	K	SLOPE s	LENGTH L (ft)	HYD. RAD. r	SLOPE s			MANN n
B1	1.56	93	.013	50	.020	2.00	.007	100	.000	.000	.000	4	8
B2	1.48	91	.013	50	.020	2.00	.003	130	.000	.000	.000	8	11
B3	1.49	88	.013	50	.020	2.00	.003	100	.000	.000	.000	12	15

#### LOCAL AREAS

GROUP	AREA (acres)	SCS CN	SHEET FLOW		SHALLOW FLOW		CHANNEL FLOW				TIME IN SEWER (min)	TIME CONCENTRATION (min)	
			MANN. n	LENGTH L (ft)	SLOPE s	K	SLOPE s	LENGTH L (ft)	HYD. RAD. r	SLOPE s			MANN n
B4	2.55	78	.024	100	.020	2.00	.010	280	.000	.000	.000	4	9
B5	6.07	64	.400	300	.020	0.25	.020	100	.000	.000	.000	8	65
B6	5.57	37	.400	300	.020	0.25	.020	50	.000	.000	.000	12	67

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# REGION C

## EXISTING CONDITIONS

### STATE AREAS

GROUP	AREA (acres)	SCS CN	SHEET FLOW		SHALLOW FLOW			CHANNEL FLOW			TIME IN SEWER (min)	TIME CONCENTRATION (min)		
			MANN. n	LENGTH L (ft)	SLOPE s	K	SLOPE s	LENGTH L (ft)	HYD. RAD. r	SLOPE s			MANN n	LENGTH L (ft)
C1	0.76	89	.400	50	.020	1.00	.003	330	.000	.000	.000	0	0	22

### LOCAL AREAS

GROUP	AREA (acres)	SCS CN	SHEET FLOW		SHALLOW FLOW			CHANNEL FLOW			TIME IN SEWER (min)	TIME CONCENTRATION (min)		
			MANN. n	LENGTH L (ft)	SLOPE s	K	SLOPE s	LENGTH L (ft)	HYD. RAD. r	SLOPE s			MANN n	LENGTH L (ft)
NONE														

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## REGION D

### Summary and Comments

#### General Notes:

Region D is composed of the areas running westward to Schilling Ditch. Contributing areas were determined from U.S.G.S. maps. The eastern limit of Region D is just west of the intersection of U.S. 30 with U.S. 41, where water is routed to U.S. 41, Region E.

Results of Region D were combined with those of Region C to create the Schilling Ditch discharge hydrographs.

#### Existing Conditions:

Two Groups, D1 and D5, contribute to Schilling Ditch in the existing condition. Their total area is 2.62 acres. In other aspects, Region D is similar to Regions A, B and C. The peak discharge for the 10-yr storm is 0.87 cfs.

#### Proposed Condition:

The total area of Region D is 23.17 acres. This Region is broken into eight Groups, D1 through D4 for State areas, and D5 through D8 for Local areas.

# REGION D

## EXISTING CONDITIONS

### STATE AREAS

GROUP	AREA (acres)	SCS CN	SHEET FLOW		SHALLOW FLOW			CHANNEL FLOW			TIME IN SEWER (min)	TIME CONCENTRATION (min)	
			MANN. n	LENGTH L (ft)	SLOPE s	K	SLOPE s	LENGTH L (ft)	HYD. RAD. r	SLOPE s			MANN n
D1	0.75	92	.013	50	.020	1.60	.003	400	.000	.000	.000	0	9

### LOCAL AREAS

GROUP	AREA (acres)	SCS CN	SHEET FLOW		SHALLOW FLOW			CHANNEL FLOW			TIME IN SEWER (min)	TIME CONCENTRATION (min)	
			MANN. n	LENGTH L (ft)	SLOPE s	K	SLOPE s	LENGTH L (ft)	HYD. RAD. r	SLOPE s			MANN n
D5	1.87	72	.400	100	.020	1.60	.010	650	.000	.000	.000	0	29

# REGION D

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## PROPOSED CONDITIONS

### STATE AREAS

GROUP	AREA (acres)	SCS CN	SHEET FLOW		SHALLOW FLOW			CHANNEL FLOW			TIME IN SEWER (min)	TIME CONCENTRATION (min)			
			MANN. n	LENGTH L (ft)	SLOPE s	K	SLOPE s	HYD. RAD. r	SLOPE s	MANN n			LENGTH L (ft)		
D1	0.75	92	.013	50	.020	2.00	.003	.000	.000	230	.000	.000	0	2	8
D2	1.71	92	.013	50	.020	2.00	.003	.000	.000	140	.000	.000	0	5	8
D3	0.92	92	.013	50	.020	2.00	.003	.000	.000	110	.000	.000	0	9	12
D4	2.70	88	.013	50	.030	2.00	.011	.000	.000	130	.000	.000	0	14	16

### LOCAL AREAS

GROUP	AREA (acres)	SCS CN	SHEET FLOW		SHALLOW FLOW			CHANNEL FLOW			TIME IN SEWER (min)	TIME CONCENTRATION (min)			
			MANN. n	LENGTH L (ft)	SLOPE s	K	SLOPE s	HYD. RAD. r	SLOPE s	MANN n			LENGTH L (ft)		
D5	1.87	72	.400	100	.020	1.60	.010	.000	.000	500	.000	.000	0	1	28
D6	5.04	81	.400	200	.020	1.60	.010	.000	.000	120	.000	.000	0	6	45
D7	3.99	56	.400	300	.020	0.70	.010	.000	.000	150	.000	.000	0	9	65
D8	6.20	63	.400	200	.020	0.25	.010	.000	.000	700	.000	.000	0	9	93

## REGION E

### Summary and Comments

#### General Notes:

Region E is composed of the areas contributing to Schererville Ditch from the south along and adjacent to U.S. 41. It includes U.S. 30 east of the U.S. 41 intersection, because it is planned to pump this water to the U.S. 41 trunk line using a lift station. The trunk line continues north through the intersection to discharge into Schererville Ditch.

Region E is notably different than Regions A through D due to the existence of an excellent ditch system flowing parallel to U.S. 41 to either side, north of U.S. 30. Any water which comes from off of the R/W which enters these ditches never becomes a part of State storm sewer flow. Further, the proposed reconstruction of U.S. 41 will not alter the flow of this water. Areas outside of the R/W where these ditches exist were, therefore, excluded from consideration.

#### Existing Conditions:

U.S. 41 south of the intersection with U.S. 30 does not currently exhibit positive drainage. It apparently makes its way to the lowlands west of US 41 which eventually enter Schilling Ditch, but not in time to contribute to critical conditions in the regulated ditches. The boundary of areas contributing in the existing condition was therefore set at the intersection, where the slope of pavement clearly indicates flow heading north to eventually join the ditches mentioned above. Areas on U.S. 30 east of U.S. 41 currently drain into low spots near the railroad underpass, evidenced by ponds that currently exist in the ditches within the R/W. The area east of U.S. 41 along U.S.30 is thus not a factor for Schererville Ditch.

Other than the areas directly adjacent to the intersection, only the R/W corridor running north to Schererville Ditch was considered as contributing. The exclusion for off-R/W areas is as noted above. The State R/W areas which contribute are Groups E9 and E10. The Local areas are Groups E7 and E8.

The total area considered in these four Groups is 17.07 acres. The existing 10-yr peak discharge rate is 7.39 cfs.

#### Proposed Conditions:

The total area for Region E is 63.28 acres. It includes all of the additional contribution from the areas south to 77th Ave., to include the areas along with U.S. 30 for which a lift station is proposed. The Region is broken into State areas; Groups E1, E3, E6, E9 and E10, and Local areas, Groups E2, E4, E5, E7 and E8.

# REGION E

## EXISTING CONDITIONS

### STATE AREAS

GROUP	AREA (acres)	SCS CN	SHEET FLOW			SHALLOW FLOW			CHANNEL FLOW			TIME IN SEWER (min)	TIME CONCENTRATION (min)	
			MANN. n	LENGTH L (ft)	SLOPE s	K	SLOPE s	LENGTH L (ft)	HYD. RAD. r	SLOPE s	MANN n			LENGTH L (ft)
E9	3.80	87	.013	50	.010	1.60	.010	1100	.750	.005	.100	2500	0	61
E10	4.83	85	.013	50	.010	1.50	.010	25	.750	.005	.100	2100	0	42

### LOCAL AREAS

GROUP	AREA (acres)	SCS CN	SHEET FLOW			SHALLOW FLOW			CHANNEL FLOW			TIME IN SEWER (min)	TIME CONCENTRATION (min)	
			MANN. n	LENGTH L (ft)	SLOPE s	K	SLOPE s	LENGTH L (ft)	HYD. RAD. r	SLOPE s	MANN n			LENGTH L (ft)
E7	1.82	89	.015	100	.010	1.60	.010	1150	.750	.005	.100	2500	0	62
E8	6.62	98	.015	100	.010	2.00	.010	1400	.750	.005	.100	2500	0	62

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# REGION E

## PROPOSED CONDITIONS

### STATE AREAS

GROUP	AREA (acres)	SCS CN	SHEET FLOW			SHALLOW FLOW			CHANNEL FLOW			TIME IN SEWER (min)	TIME CONCENTRATION (min)	
			MANN. n	LENGTH L (ft)	SLOPE s	K	SLOPE s	LENGTH L (ft)	HYD. RAD. r	SLOPE s	MANN n			LENGTH L (ft)
E1	5.14	89	.013	50	.020	2.00	.004	100	.000	.000	.000	0	25	28
E3	5.08	89	.013	50	.020	2.00	.003	110	.000	.000	.000	0	16	19
E6	3.78	86	.013	50	.030	2.00	.008	80	.000	.000	.000	0	19	21
E9	3.80	87	.013	50	.020	2.00	.001	130	.000	.000	.000	0	10	15
E10	4.83	85	.013	50	.020	2.00	.001	110	.000	.000	.000	0	5	9

### LOCAL AREAS

GROUP	AREA (acres)	SCS CN	SHEET FLOW			SHALLOW FLOW			CHANNEL FLOW			TIME IN SEWER (min)	TIME CONCENTRATION (min)	
			MANN. n	LENGTH L (ft)	SLOPE s	K	SLOPE s	LENGTH L (ft)	HYD. RAD. r	SLOPE s	MANN n			LENGTH L (ft)
E2	8.28	89	.015	100	.010	2.00	.004	150	.000	.000	.000	0	25	29
E4	2.26	89	.015	100	.010	2.00	.010	150	.000	.000	.000	0	12	16
E5	21.64	55	.015	200	.020	1.00	.020	650	.000	.000	.000	0	18	29
E7	1.82	89	.015	100	.010	1.60	.010	400	.000	.000	.000	0	9	15
E8	6.62	98	.015	100	.010	2.00	.010	500	.000	.000	.000	0	9	16

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## REGION F

### Summary and Comments

#### General Notes:

Region F includes the areas south of the Elgin, Joliet and Eastern Railway bridge on U.S. 41 which flow to Schererville Ditch using the well-developed ditches running parallel to U.S. 41 or using the proposed storm sewer line. Local areas which flow toward U.S. 41 are collected into these ditches and are conducted to Schererville Ditch without entering into any State storm sewer routing. In addition, the proposed work is not going to change the behavior of this water. Areas outside the R/W were therefore excluded from the study, similar to Region E. In contrast to Region E, however, these ditches run the entire length of Region F, thus no Local areas are included in Region F in either the existing or proposed condition.

#### Existing Conditions:

All areas in Region F were combined into Group F1. The area of Group F1 is 8.33 acres. The 10-yr peak discharge of the Region 2.21 cfs. The time of concentration for Region F is controlled by the routing in the ditch system, the analysis of which was included in the TR-55 calculation.

#### Proposed Conditions:

The area is unchanged for the proposed condition as described above.

The State R/W boundary approaching the railway widens to over 100' to either side. The controlling flow for the time of concentration was judged to be the water falling behind the proposed curbs which has to flow overland into the ditch system. Thus the time of concentration for the Region is unchanged for the proposed condition.





# REGION F

## PROPOSED CONDITIONS

### STATE AREAS

GROUP	AREA (acres)	SCS CN	SHEET FLOW		SHALLOW FLOW			CHANNEL FLOW			TIME IN SEWER (min)	TIME CONCENTRATION (min)		
			MANN. n	LENGTH L (ft)	SLOPE s	K	SLOPE s	LENGTH L (ft)	HYD. RAD. r	SLOPE s			MANN n	LENGTH L (ft)
F1	8.33	71	.041	70	.100	0.70	.010	230	.750	.005	.100	2350	0	52

### LOCAL AREAS

GROUP	AREA (acres)	SCS CN	SHEET FLOW		SHALLOW FLOW			CHANNEL FLOW			TIME IN SEWER (min)	TIME CONCENTRATION (min)		
			MANN. n	LENGTH L (ft)	SLOPE s	K	SLOPE s	LENGTH L (ft)	HYD. RAD. r	SLOPE s			MANN n	LENGTH L (ft)
NONE														

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# DYER DITCH

## Summary and Findings

### General Notes:

The analysis of Dyer Ditch is the combined results of Regions A and B. In general, such summations were accomplished using the combined hydrograph function available in the Eagle Point software, which mirrors the same command in the TR-20 program. Differing times of concentration are considered as the hydrographs are summed with respect to each Region's contribution over time.

The analysis of Dyer Ditch is addressed for each storm frequency which was required.

### Existing, 10-yr Peak Discharge

As agreed by INDOT and Lake County prior to the conduct of this study, the existing condition 10-yr peak discharge was developed without regard for whether the discharge was from State or Local areas. The intent, as discussed in the introduction, was to establish the current 10-yr peak discharge and assign it as the "allowable maximum" discharge into Dyer Ditch.

This rate was found by combining the "existing" hydrographs from Regions A and B together. The full hydrograph report for this combination follows this summary. **The Peak Discharge Rate for Dyer Ditch was found to be 2.91 cfs.** This rate is used in the section analyzing the **Dyer Ditch Pond**, found later in this report.

### Proposed, 50-yr Discharge Hydrographs

It is the intent of the 50-yr analysis of the proposed conditions to determine the discharge hydrograph into Dyer Ditch due to the new highway construction. It was also necessary to determine which percentage of this discharge comes from rainfall on State R/W and which portions from adjacent Local areas.

To accomplish this two-fold result, it was necessary to create two 50-yr hydrographs for each Region, one of ALL areas in the Region and one of STATE ONLY areas. This was accomplished using the combination of hydrographs, once for Groups A1 through A10 in Region A, Groups B1 through B6 in Region B, and then for Groups A1 through A5 in Region A, Groups B1 through B3 in Region B. Only STATE Groups went into the STATE hydrograph.



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To determine the percentage of the State discharge to Dyer Ditch, the volume of these two hydrographs were compared. The State percentage being equal to:

$$\frac{\text{STATE ONLY Hydrograph Volume}}{\text{ALL Areas Hydrograph Volume}} \times 100\% = \text{State Percentage of Discharge}$$

From the hydrographs, this percentage was found to be:

$$\begin{aligned} \text{State Portion of Discharge} \\ \frac{7.33 \text{ ac-ft}}{16.18 \text{ ac-ft}} \times 100\% = 45.3\% \end{aligned}$$

$$\begin{aligned} \text{Local Portion of Discharge} \\ 100\% - 45.3\% = 54.7\% \end{aligned}$$

As previously mentioned, the volume of required storage at Dyer Ditch is that portion of the 50-yr hydrograph (ALL Areas), which is above the base discharge rate of 2.91 cfs. The determination of this volume can be found in the section describing the **Dyer Ditch Pond**.

#### Proposed, 100-yr Discharge Hydrograph

It was requested by Lake County that we provide a hydrograph for each ditch which shows the effect of a 100 year storm over the Proposed Condition. The 100-yr discharge hydrograph is included at the rear of this section. It was determined using ALL areas from Regions A and B.

It is provided for information purposes only but is not used in the volume/cost calculations later in this report.



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# SCHERERVILLE DITCH

## Summary and Findings

### General Notes:

Schererville Ditch is the combined result of Regions E and F. The methodology is identical to the other ditches.

Region F is treated similarly to Region C, in that there is only one Group and it is entirely within State R/W.

### Existing, 10-yr Peak Discharge

The peak discharge for Schererville Ditch is considerably higher than those of Dyer or Schilling Ditches because of the much larger areas contributing in the existing condition. Also, Regions E and F have well-developed ditch systems which conduct the water more efficiently to Schererville Ditch.

For Schererville Ditch, the 10-yr, "maximum discharge" is 9.58 cfs.

### Proposed, 50-yr Discharge Hydrographs

The respective portions of discharge were found to be:

State Portion of Discharge	Local Portion of Discharge
$10.29 \text{ ac-ft} \times 100\% = 49.6\%$	$100\% - 49.6\% = 50.4\%$
20.75 ac-ft	

The volume of required storage at Schererville Ditch is that portion of the 50-yr hydrograph (ALL Areas) which is above the base rate of 9.58 cfs. See the section on Schererville Ditch Pond for this calculation.

### Proposed, 100-yr Discharge Hydrograph

The 100-yr discharge hydrograph is available at the end of this section.



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## SCHILLING DITCH

### Summary and Findings

#### General Notes:

Schilling Ditch is the combined result of Regions C and D. The methodology is identical to that of Dyer Ditch.

The only difference of note is that Region C is entirely within the State R/W. Thus, the STATE ONLY and ALL Areas hydrographs for this Region are identical. This hydrograph is combined with either the STATE ONLY or ALL Areas hydrograph of Region D.

#### Existing, 10-yr Peak Discharge

As with Dyer Ditch, this discharge rate was found without regard to whether the areas were State or Local.

For Schilling Ditch, the 10-yr, "maximum discharge" is 1.19 cfs.

#### Proposed, 50-yr Discharge Hydrographs

The procedure in finding the 50-yr discharge hydrographs parallels that of Dyer Ditch.

The respective portions of discharge were found to be:

**State Portion of Discharge**  
 **$2.67 \text{ ac-ft} \times 100\% = 42.7\%$**   
**6.26 ac-ft**

**Local Portion of Discharge**  
 **$100\% - 42.7\% = 57.3\%$**

The volume of the required storage at Schilling Ditch is that portion of the 50-yr hydrograph (ALL Areas) which is above the base rate of 1.19 cfs. See the section on **Schilling Ditch Pond** for this calculation.

#### Proposed, 100-yr Discharge Hydrograph

As with Dyer Ditch, the 100-yr hydrograph is at the end of this section.



# STORM SEWER TRUNK LINES

RECEIVED  
DEC 30 1994  
MAURER-McGILLEM

## Summary and Findings

### GENERAL NOTES

Presented herein are the estimated costs of constructing the trunk line of the storm sewer for all three areas of interest. Branch lines, inlets and miscellaneous structures were not considered. Rather, the estimate includes only the main trunk and the manholes that connect it.

The estimate was prepared using the State's HighEst program. Also provided is a spreadsheet printout of the same information, which is easier to read and more useful.

Prices were derived from HighEst when available. Special manholes of a given type were quoted at 10% above their regular version. Irregular Special manholes were quoted at \$10,000 based on comparison with other contracts available.

### PURPOSE

It is the intent of INDOT to include the cost of the storm sewer trunk line in the Total Cost Allocation calculation for this drainage study. This cost is to be considered along with the relative State or Local percentage of discharge which was determined in the sections for each ditch.

The **State Cost Allocation** section shows how these costs are included.

The total cost for the storm sewer at each ditch is as follows:

Dyer Ditch	\$ 780,293.28
Schilling Ditch	\$ 177,532.32
Schererville Ditch	\$ 1,482,537.74



# U.S. 30 STORM SEWERS TO DYER DITCH

DEC 30 1994

ITEM CODE	BID ITEM	UNIT PRICE	IN TOWN OF DYER		IN TOWN OF SCHERERVILLE	
			QUANTITY	TOTAL PRICE	QUANTITY	TOTAL PRICE
715-01460	PIPE, REINFORCED CONCRETE, HE, III, 49 IN. X 32 IN.	\$ 78.36	411	\$ 32,205.96		\$ -
715-41050	PIPE, REINFORCED CONCRETE, III, 15 IN.	25.87	351	\$ 9,080.37		\$ -
715-41055	PIPE, REINFORCED CONCRETE, III, 18 IN.	36.30	830	\$ 30,129.00	285	\$ 10,345.50
715-41065	PIPE, REINFORCED CONCRETE, III, 24 IN.	41.29		-	579	\$ 23,906.91
715-41075	PIPE, REINFORCED CONCRETE, III, 30 IN.	49.63	263	\$ 13,052.69	637	\$ 31,614.31
715-41085	PIPE, REINFORCED CONCRETE, III, 36 IN.	56.69		-	592	\$ 33,560.48
715-41090	PIPE, REINFORCED CONCRETE, III, 42 IN.	65.03	250	\$ 16,257.50		\$ -
715-41095	PIPE, REINFORCED CONCRETE, III, 48 IN.	70.53	3,308	\$ 233,313.24		\$ -
715-98778	PIPE, REINFORCED CONCRETE, HE, III, 45 IN. X 29 IN.	75.69	155	\$ 11,731.95		\$ -
715-99999	PIPE, REINFORCED CONCRETE, III, 54 IN.	107.66	1,282	\$ 138,020.12		\$ -
716-90475	JACKED PIPE, CONCRETE, HD REINFORCED, V, 30 IN.	401.00	100	\$ 40,100.00		\$ -
716-99999	JACKED PIPE CASING, STEEL, 0.250 IN., 42 IN.	340.00	98	\$ 33,320.00		\$ -
720-45410	MANHOLE, C-4	1,506.99	2	\$ 3,013.98	3	\$ 4,520.97
720-45415	MANHOLE, D-4	2,542.82	4	\$ 10,171.28		\$ -
720-45416	MANHOLE, E-4	4,065.70	13	\$ 52,854.10		\$ -
720-45425	MANHOLE, F-4	9,989.00	2	\$ 19,978.00		\$ -
720-95422	MANHOLE, J-4	2,365.88		-	3	\$ 7,097.64
720-99999	MANHOLE, E-4, SPECIAL	4,472.27	3	\$ 13,416.81		\$ -
720-99999	MANHOLE, J-4, SPECIAL	2,602.47		-	1	\$ 2,602.47
720-99999	MANHOLE, SPECIAL	\$ 10,000.00	1	\$ 10,000.00		\$ -
<b>TOWN TOTALS</b>				\$ 666,645.00		\$ 113,648.28

PROJECT TOTAL = \$ 780,293.28

**NOTE:** ALL CONSTRUCTION ON U.S. 30 IS CURRENTLY SCHEDULED FOR 1996.



# U.S. 30/U.S. 41 STORM SEWERS TO SCHERERVILLE DITCH

DEC 30 1994

ITEM CODE	BID ITEM	UNIT PRICE	IN TOWN OF SCHERERVILLE			
			1996 CONSTRUCTION		1997 OR LATER CONST.	
			QUANTITY	TOTAL PRICE	QUANTITY	TOTAL PRICE
715-41050	PIPE, REINFORCED CONCRETE, III, 15 IN.	\$ 25.87	-	\$	800	\$ 20,696.00
715-41055	PIPE, REINFORCED CONCRETE, III, 18 IN.	36.30	-		1,600	58,080.00
715-41065	PIPE, REINFORCED CONCRETE, III, 24 IN.	41.29	-		1,200	49,548.00
715-41075	PIPE, REINFORCED CONCRETE, III, 30 IN.	49.63	-		3,600	178,668.00
715-41085	PIPE, REINFORCED CONCRETE, III, 36 IN.	56.69	161,566.50		4,630	262,474.70
715-41095	PIPE, REINFORCED CONCRETE, III, 48 IN.	70.53	81,814.80		-	-
715-99999	PIPE, REINFORCED CONCRETE, III, 54 IN.	107.66	-		4,420	475,857.20
720-45410	MANHOLE, C-4	1,506.99	-		14	21,097.86
720-93501	MANHOLE, L-4	4,201.18	8,402.36		2	50,414.16
720-94612	MANHOLE, K-4	2,850.92	39,912.88		14	45,614.72
720-95422	MANHOLE, J-4	2,365.88	-		12	28,390.56

**1996 TOTAL = \$ 291,696.54**

**1997 OR LATER TOTAL = \$ 1,190,841.20**

**PROJECT TOTAL = \$ 1,482,537.74**

State of Indiana  
D.E. McGillem & Associates  
HighEst Detailed Estimate

Page 1  
Dec 22, 1994  
4:10 PM

Contract Number: US30

Project: SCHERERVILLE DITCH

Estimated by: Nov 18, 1994  
Checked by:  
Approved by:

DEC 30 1994

County: Lake

Work Type: DRAINAGE

Letting Date: Dec 01, 1995

Total Estimate: \$1,482,537.74

715-41050	800.0000 LFT @	\$25.87 =	\$20,696.00
0001 PIPE, REINFORCED CONCRETE, III, 15 IN.			
715-41055	1,600.0000 LFT @	\$36.30 =	\$58,080.00
0002 PIPE, REINFORCED CONCRETE, III, 18 IN.			
715-41065	1,200.0000 LFT @	\$41.29 =	\$49,548.00
0003 PIPE, REINFORCED CONCRETE, III, 24 IN.			
715-41075	3,600.0000 LFT @	\$49.63 =	\$178,668.00
0004 PIPE, REINFORCED CONCRETE, III, 30 IN.			
715-41085	7,480.0000 LFT @	\$56.69 =	\$424,041.20
0005 PIPE, REINFORCED CONCRETE, III, 36 IN.			
715-41095	1,160.0000 LFT @	\$70.53 =	\$81,814.80
0006 PIPE, REINFORCED CONCRETE, III, 48 IN.			
715-99999	4,420.0000 LFT @	\$107.66 =	\$475,857.20
0007 PIPE, REINFORCED CONCRETE, III, 54 IN.			
720-45410	14.0000 EACH @	\$1,506.99 =	\$21,097.86
0008 MANHOLE, C-4			
720-93501	14.0000 EACH @	\$4,201.18 =	\$58,816.52
0009 MANHOLE, L-4			
720-94612	30.0000 EACH @	\$2,850.92 =	\$85,527.60
0010 MANHOLE, K-4			
720-95422	12.0000 EACH @	\$2,365.88 =	\$28,390.56
0011 MANHOLE, J-4			

Project Total = \$1,482,537.74

# STATE COST ALLOCATION

DEC 30 1994

## Summary

### GENERAL

Provided following is the derivation of State and Local costs from the information presented in this study.

### PURPOSE

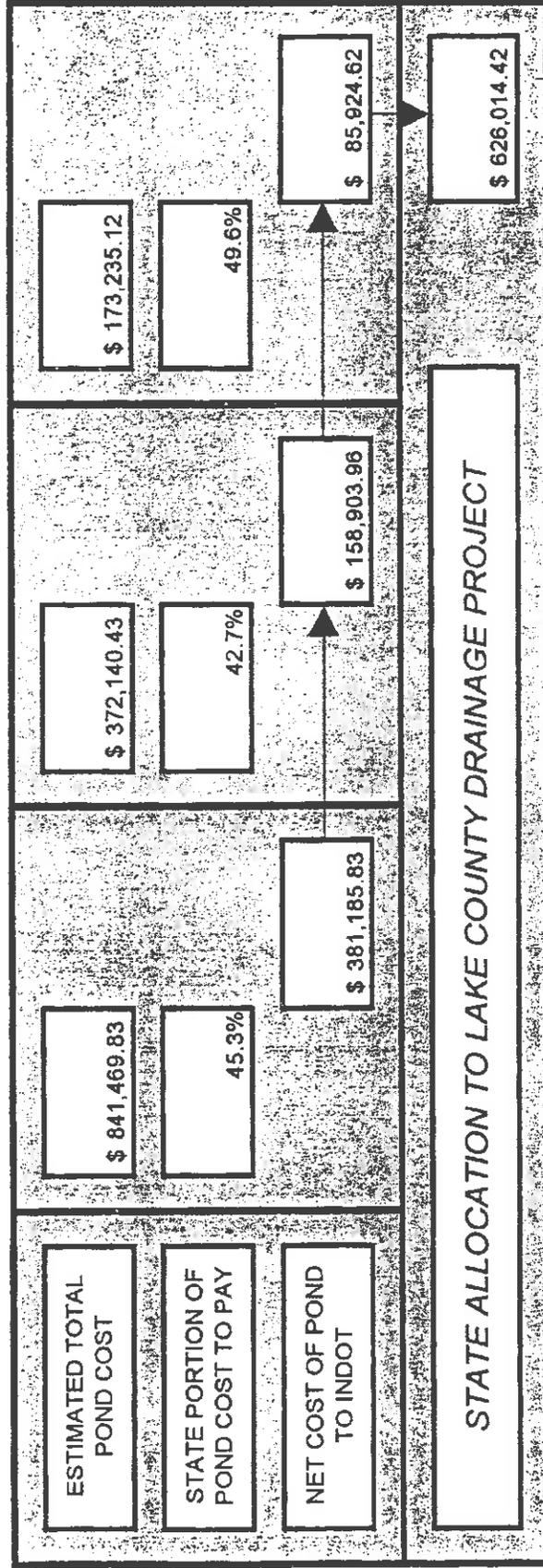
The general intent is to:

- 1) Identify the cost to construct the pond at each location.
- 2) Establish the portion of the total pond cost which is INDOT's responsibility for the storage of its runoff. This amount is to be diverted to Lake County's larger drainage project.
- 3) Establish the total storm sewer cost for each ditch.
- 4) Identify a Local portion of the storm sewer cost based on the volume of runoff from Local areas.
- 5) The costs of the storm sewer are identified by the municipality in which they occur and by when the construction is expected, whether in 1996 or later. This data is used to establish the portion of the total storm sewer cost which is the responsibility of local authorities.
- 6) As of the date of this report, this amount is expected to be charged to the Local municipalities for transporting their runoff and relieving Local drainage problems.

# DRAINAGE COSTS ALLOCATION

PONDS	DYER POND		SCHILLING POND		SCHERERVILLE POND	
	STATE %	COUNTY %	STATE %	COUNTY %	STATE %	COUNTY %
	45.3%	54.7%	42.7%	57.3%	49.6%	50.4%

## ALLOCATION OF POND CONSTRUCTION COSTS



# STORM SEWER COST ALLOCATION

STORM SEWER TO:	STATE PORTION			TOWN OF DYER PORTION			TOWN OF SCHERERVILLE PORTION					
	ALL DATES			1986 CONSTRUCTION			1986 CONSTRUCTION			1997 OR LATER CONSTRUCTION		
	STATE %	STATE COST		PART IN DYER	DYER %	COST TO TOWN	PART IN SCHER.	SCHER. %	COST TO TOWN	PART IN SCHER.	SCHER. %	COST TO TOWN
DYER DITCH	45.3%	\$ 353,472.86		\$ 666,645.00	54.7%	\$ 364,654.82	\$ 113,648.28	54.7%	\$ 62,165.61	\$ -	0.0%	\$ -
\$ 780,293.28												
SCHILLING DITCH	42.7%	\$ 75,806.30		\$ -	0.0%	\$ -	\$ 177,537.32	57.3%	\$ 101,728.88	\$ -	0.0%	\$ -
\$ 177,532.32												
SCHERERVILLE DITCH	49.6%	\$ 735,338.72		\$ -	0.0%	\$ -	\$ 291,696.54	50.4%	\$ 147,015.06	\$ 1,190,841.20	50.4%	\$ 600,183.96
\$ 1,482,537.74												
STATE COST \$ 1,164,617.88			DYER COST \$ 364,654.82			SCHERERVILLE COST 1986 \$ 310,909.55			SCHERERVILLE COST 1997 OR LATER \$ 600,183.96			

DEC 30 1994  
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# STORM SEWER COST ALLOCATION

STORM SEWER TO:	STATE PORTION		TOWN OF DYER PORTION				TOWN OF SCHERERVILLE PORTION				1997 OR LATER CONSTRUCTION COST TO TOWN	
	ALL DATES		1996 CONSTRUCTION		1996 CONSTRUCTION		1996 CONSTRUCTION		1997 OR LATER CONSTRUCTION			
	STATE %	STATE COST	PART IN DYER	DYER %	COST TO TOWN	PART IN SCHER.	SCHER. %	COST TO TOWN	PART IN SCHER.	SCHER. %		COST TO TOWN
DYER DITCH	45.3%	\$ 353,472.86	\$ 666,645.00	54.7%	\$ 364,654.82	\$ 113,648.28	54.7%	\$ 62,165.61	-	0.0%	\$ -	
\$ 780,293.28												
SCHILLING DITCH	42.7%	\$ 75,806.30	\$ -	0.0%	\$ -	\$ 177,537.32	57.3%	\$ 101,728.88	-	0.0%	\$ -	
\$ 177,532.32												
SCHERERVILLE DITCH	49.6%	\$ 735,338.72	\$ -	0.0%	\$ -	\$ 291,696.54	50.4%	\$ 147,015.06	\$ 1,190,841.20	50.4%	\$ 600,183.96	
\$ 1,482,537.74												
STATE COST \$ 1,164,617.88		DYER COST		\$ 364,654.82		SCHERERVILLE COST 1996		\$ 310,909.55		SCHERERVILLE COST 1997 OR LATER		\$ 600,183.96

FACSIMILE TRANSMISSION NOTICE

TO: LARRY H. Clelland  
Lake Co. Surveyor's Office

FAX NO. (219) 755-3064

CBBE PROJECT NO. 90-133

NO. PAGES (INCLUDING THIS COVER SHEET) 5

IF YOU DO NOT RECEIVE THE SPECIFIED NUMBER OF PAGES  
PLEASE CONTACT US

DATE: 1-25-93

BY: Donald Dressel

NOTES: Dyer Ditch In  
FEMA CLOMP



Christopher B. Burke Engineering, Ltd.  
10275 West Higgins Road  
Suite 460  
Rosemont, IL 60018

(708) 296-0500  
(708) 296-9267 (FAX)



# Federal Emergency Management Agency

Washington, D.C. 20472

JAN 22 1993

DIZD

(104)

Mr. Michael J. Kapitan  
President of the Council for  
the Town of Dyer  
One Town Square  
Dyer Indiana 46311

Case No.: 92-05-0288  
Community: Town of Dyer,  
Lake County Indiana  
Community No.: 180129

Dear Mr. Kapitan:

This is in reference to an April 15, 1992, letter from Christopher B. Burke, Ph.D., P.E., of Christopher B. Burke Engineering Ltd., to the Federal Emergency Management Agency (FEMA). In his letter, Mr. Burke requested that FEMA issue a conditional Letter of Map Revision (LOMR) for a proposed project along Dyer Ditch, which consists of the following items:

- replacing the bridge at 213th Street;
- installing three six-foot diameter concrete culverts under the CONRAIL and Elgin, Dyer & Eastern (EJ&E) Railroads;
- constructing a contained flood bypass and wetlands habitat channel from the EJ&E Railroad to a point approximately 0.5 mile upstream of the EJ&E Railroad; and
- constructing a detention basin in the east overbank of Dyer Ditch immediately upstream of the EJ&E Railroad.

The proposed project area is currently shown on the Town of Dyer, Indiana, Flood Insurance Rate Map (FIRM) and Flood Boundary and Floodway Map (FBFM) number 180129, panels 0001 and 0002, all dated September 16, 1986.

In support of this request, Mr. Burke submitted the following technical data prepared by his firm:

- technical reports, both entitled Conditional LOMR Submittal to FEMA, CBBSL Project No. 90-133, dated April 1992 and August 1992;
- an existing conditions HEC-2 hydraulic backwater model of the 100-year flood and floodway, dated November 3, 1992;
- a proposed conditions HEC-2 hydraulic backwater model of the 100-year flood and floodway, dated November 23, 1992;
- Town of Dyer FIRM number 180129, panels 0001 C and 0002 C, both dated September 16, 1986, annotated to reflect proposed conditions;
- Town of Dyer FBFM number 180129, panels 0001 and 0002, both dated September 16, 1986, annotated to reflect proposed conditions;

- Town of Dyer Flood Insurance Study (FIS) report Flood Profiles OIP-OIP for Dyer Ditch associated to reflect proposed conditions.
- proposed plans of the project entitled Conceptual Wetland Designs, dated April 1, 1991, and
- community acknowledgment of the request from Mr. Steve Manich, Lake County Surveyor, on behalf of the Town of Dyer, dated April 23, 1992.

All fees necessary to process this conditional LOMR were received by November 30, 1992. All fees necessary to process this request (a total of \$1,200.00) have been received.

We have reviewed the submitted data and determined that the proposed project meets the minimum floodplain management criteria of the National Flood Insurance Program (NFIP). If the project were built as proposed, a revision to the FIS, FIRM, and DFPM for your community would be warranted. This revision would reflect the submitted data and would show decreases in the Base (100-year) Flood Elevations (BFE) and a narrowing of the 100 year floodplain and the FEMA-designated floodway of Dyer Ditch between 213th Street and U.S. Route 30 (Lincoln Highway). In addition, the 100-year flood discharge will be contained in the channels within this reach. Please note that future revisions to the FIRM or re-studies of the flood hazards in this area could modify this determination.

This determination is based on the 100-year flood discharges computed in the effective FIS for your community and does not consider subsequent changes in watershed characteristics that would tend to increase flood discharges. The development of this project and other projects upstream could result in increased flood discharges, which, in turn, could result in increased 100-year flood elevations. Future re-studies of your community's flood hazards would take into account the cumulative effects of development on flood discharges and could, therefore, establish higher 100-year flood elevations in this area.

This conditional LOMR is based on minimum floodplain management criteria established under the NFIP. Your community is responsible for approving all proposed floodplain development, including the project upon which this request is based, and for ensuring that permits required by Federal or State law have been received. State and community officials, based on knowledge of local conditions and in the interest of safety, may set higher standards for construction or may limit development in floodplain areas. If the State of Indiana or the Town of Dyer has adopted more restrictive or comprehensive floodplain management criteria, those criteria take precedence over the minimum NFIP requirements.

NFIP regulations Subparagraph 20.2(b)(3) requires communities participating in the program to "assure that the flood carrying capacity within the altered or relocated portion of any watercourse is maintained." Without proper maintenance, such as the regular clearing of a channelized stream, channel modification projects will, in time, fail to function as designed, thereby recreating

the flood hazard that they were intended to mitigate. Therefore, upon completion of the project, your community must uphold its responsibility for assuring that the modified channels and culverts are maintained in order to preserve their design function. Please be aware that FEMA may request that your community submit a description and schedule of annual maintenance activities.

Also note the requirements for floodway revisions outlined in NCEP regulations Subparagraph 65.7(b)(1), which states that when a floodway change is proposed, a copy of a public notice distributed by the community stating the community's intent to revise the floodway, or a statement by the community that it has notified all affected property owners and affected adjacent jurisdictions, must be submitted to FEMA. This requirement must be addressed when requesting a map revision to reflect the effects of the completed project.

Upon completion of the proposed project, your community must request a revision to the effective FIS, FIRM, and RFPFM. The revision request should be submitted to our Regional office in Chicago, Illinois, and include the following data:

1. Evidence of compliance with NFIP regulations Paragraph 65.7(b), which states that "all requests for changes to effective maps must be made in writing by the community's Chief Executive Officer (CEO) or an official designated by the CEO. Should the CEO refuse to submit such a request on behalf of another party, FEMA will agree to revise it only if written evidence is provided indicating the CEO or designee has been requested to do so."
2. "As-built" plans of the project, certified by a registered professional engineer.
3. HEC-2 hydraulic models of the 100-year Flood and Floodway representing "as-built" conditions. The elevations in the "as-built" HEC-2 models must coincide with the effective FIS elevations at the upstream and downstream ends of the project.
4. Delineation of the 100-year floodplain boundary, the floodway, and the locations and alignment of the cross sections and flow line use" in the hydraulic model.
  - a. This delineation should be shown on a map of suitable scale and topographic definition to provide reasonable accuracy.
  - b. All items should be labeled for easy cross-referencing to the hydraulic model and survey data.
5. Source data and engineering documentation for the previously mentioned items, as well as a bibliographic list of other sources of information used.
6. Revised water-surface profiles of the 100-year Flood reflecting "as-built" conditions.

- 7. A written description of the methods used to determine hydrologic and/or hydraulic parameters is different from that used in the effective FIS, FIRM, and IFPM.
- 8. Floodway change notification from the Town of Over, as previously discussed.

Please note that items 3-8 have been submitted for proposed conditions and do not have to be resubmitted if the applicant is a FIRM. If any changes are made during the review process, these items must be resubmitted to reflect the final conditions.

The above-mentioned data must be submitted in the designated application and notification forms. These forms are available for all requests for revisions or amendments to NFIP maps received by FEMA after October 1, 1991. Forms and instructions have been enclosed for your use. The data necessary to process a revision are outlined in detail in the enclosed forms.

We have also enclosed a copy of the NFIP regulations. The NFIP regulations further describe the nature and extent of the material needed to support a request to revise an effective FIS, FIRM, or IFPM. Compliance with the criteria outlined in this document will expedite FEMA's review process, thus allowing the effective FIS, FIRM, and IFPM to be revised as appropriate in a timely manner.

If you have any questions regarding this matter, please do not hesitate to contact the Chief, Natural and Technological Hazards Division of FEMA in Washington, D.C. at (202) 408-5992 or Phillip Over, or our headquarters staff in Springfield, Illinois, at (312) 408-5992 or Phillip Over, or our headquarters staff in Washington, D.C. at (202) 646-2755, or by facsimile at (202) 646-1443.

Sincerely,

*William S. Cole*  
 William S. Cole  
 Chief Risk Studies Division  
 Federal Insurance Administration

Enclosures

- 1. Donald Stause Town of Over Code Enforcement Officer
- 2. Christopher L. Burke State Coordinator



# Federal Emergency Management Agency

Washington, D.C. 20472

JAN 22 1993

D12

Mr. Michael J. Kapitan,  
President of the Council for  
the Town of Dyer  
One Town Square  
Dyer, Indiana 46211

(104)

Case No.: 92-05-028R  
Community: Town of Dyer,  
Lake County, Indiana  
Community No.: 180129

Dear Mr. Kapitan:

This is in reference to an April 15, 1992, letter from Christopher B. Burke Ph.D., P.E., of Christopher B. Burke Engineering, Ltd., to the Federal Emergency Management Agency (FEMA). In his letter, Mr. Burke requested the FEMA issue a conditional Letter of Map Revision (LOMR) for a proposed project along Dyer Ditch, which consists of the following items:

- replacing the bridge at 213th Street;
- installing three six-foot diameter concrete culverts under the CONRAIL and Elgin-Joliet & Eastern (EJ&E) Railroads;
- constructing a combined flood bypass and wetlands habitat channel from the EJ&E Railroad to a point approximately 0.7 mile upstream of the EJ&E Railroad; and
- constructing a detention basin in the east overbank of Dyer Ditch immediately upstream of the EJ&E Railroad.

The proposed project area is currently shown on the Town of Dyer, Indiana, Flood Insurance Rate Map (FIRM) and Flood Boundary and Floodway Map (FBFM) number 180129, panels 0001 and 0002, all dated September 16, 1986.

In support of this request, Mr. Burke submitted the following technical data prepared by his firm:

- technical reports, both entitled Conditional LOMR Submittal to FEMA, CBBEL Project No. 90-133, dated April 1992 and August 1992;
- an existing conditions HEC-2 hydraulic backwater model of the 1 year flood and floodway, dated November 3, 1992;
- a proposed conditions HEC-2 hydraulic backwater model of the 10 year flood and floodway, dated November 27, 1992;
- Town of Dyer FIRM number 180129, panels 0001 C and 0002 C, both dated September 16, 1986, annotated to reflect proposed conditions;
- Town of Dyer FBFM number 180129, panels 0001 and 0002, both dated September 16, 1986, annotated to reflect proposed conditions;

- Town of Dyer Flood Insurance Study FIS, report Flood Frontal OIP-OIP for Dyer Ditch, annotated to reflect proposed conditions.
- proposed plans of the project entitled Conceptual Wetland Designs, dated April 1, 1991; and
- community acknowledgment of the request from Mr. Steve Manich, Lake County Surveyor, on behalf of the Town of Dyer, dated April 23, 1992.

All data necessary to process this conditional LOMR were received by November 30, 1992. All fees necessary to process this request (a total of \$1,470.00) have been received.

We have reviewed the submitted data and determined that the proposed project meets the minimum floodplain management criteria of the National Flood Insurance Program (NFIP). If the project were built as proposed, a revision to the FIS, FIRM, and FIRM for your community would be warranted. This revision would reflect the submitted data and would show decreases in the 100-year (100-year) Flood Elevations (FIEs), and a narrowing of the 100-year floodpl and the FEMA-designated floodway of Dyer Ditch between 213th Street and U.S Route 30 (Lincoln Highway). In addition, the 100-year flood discharge will be contained in the channels within this reach. Please note that future revisions to the FIRM, or restudies of the flood hazards in this area, could modify this determination.

This determination is based on the 100-year flood discharges computed in the effective FIS for your community and does not consider subsequent changes in watershed characteristics that would tend to increase flood discharges. The development of this project and other projects upstream could result in increased flood discharges, which, in turn, could result in increased 100-year flood elevations. Future restudies of your community's flood hazards would take into account the cumulative effects of development on flood discharges and could, therefore, establish higher 100-year flood elevations in this area.

This conditional LOMR is based on minimum floodplain management criteria established under the NFIP. Your community is responsible for approving all proposed floodplain development, including the project upon which this request is based, and for ensuring that permits required by Federal or State law have been received. State and community officials, based on knowledge of local conditions and in the interest of safety, may set higher standards for construction or may limit development in floodplain areas. If the State of Indiana or the Town of Dyer has adopted more restrictive or comprehensive floodplain management criteria, those criteria take precedence over the minimum NFIP requirements.

NFIP regulations Subparagraph 60.3(b)(7) requires communities participating in the program to "assure that the flood carrying capacity within the altered or relocated portion of any watercourse is maintained." Without proper maintenance, such as the regular clearing of a channelized stream, channel modification projects will, in time, fail to function as designed, thereby recreati

the flood hazard that they were intended to mitigate. Therefore, upon completion of the project, your community must uphold its responsibility, assuring that the modified channels and culverts are maintained in order to preserve their design function. Please be aware that FEMA may request that your community submit a description and schedule of channel maintenance activities.

Also note the requirements for floodway revisions outlined in NFIP regulation Subparagraph 65.7(b)(1), which states that when a floodway change is proposed, a copy of a public notice distributed by the community stating the community's intent to revise the floodway, or a statement by the community that it has notified all affected property owners and affected adjacent jurisdictions, must be submitted to FEMA. This requirement must be addressed when requesting a map revision to reflect the effects of the completed project.

Upon completion of the proposed project, your community must request a revision to the effective FIS, FIR, and FBFM. The revision request should be submitted to our Regional office in Chicago, Illinois, and include the following data:

1. Evidence of compliance with NFIP regulations Paragraph 65.4(b), which states that "all requests for changes to effective maps . . . must be made in writing by the community's Chief Executive Officer (CEO) or an official designated by the CEO. Should the CEO refuse to submit such a request on behalf of another party, FEMA will agree to review it only if written evidence is provided indicating the CEO or designee has been requested to do so."
2. "As-built" plans of the project, certified by a registered professional engineer.
3. HEC-2 hydraulic models of the 100-year flood and floodway representing "as-built" conditions. The elevations in the "as-built" HEC-2 models must coincide with the effective FIS elevations at the upstream and downstream ends of the project.
4. Delineation of the 100-year floodplain boundary, the floodway, and the locations and alignment of the cross sections and flow line used in the hydraulic model.
  - a. This information should be shown on a map of suitable scale and topographic definition to provide reasonable accuracy.
  - b. All items should be labeled for easy cross-referencing to the hydraulic model and summary data.
5. Source data and engineering documentation for the previously mentioned items, as well as a bibliographic list of other sources of information used.
6. Revised water-surface profiles of the 100-year flood reflecting "as-built" conditions.

7. A written description of the methodology used to determine hydrologic and/or hydraulic parameters, if different from that used in the effective FIS, FIRM, and FIRM.
8. Floodway change notification from the Town of Dyer, as previously discussed.

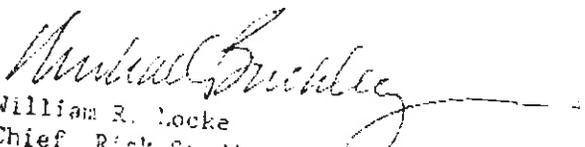
Please note that items 3-7 have been submitted for proposed conditions and do not have to be resubmitted if the project is completed as proposed. If any changes take place during construction, however, these items must be resubmitted to reflect "as-built" conditions.

The above-mentioned data must be submitted in the form of completed application and certification forms. These forms are mandatory for all requests for revisions or amendments to NFIP maps received by FEMA on or after October 1, 1992 (forms and instructions have been enclosed for your use). The data necessary to process a revision are outlined in detail in the enclosed forms.

We have also enclosed a copy of the NFIP regulations. Part 65 of the NFIP regulations further describes the nature and extent of the material needed to support a request to revise an effective FIS, FIRM, and FIRM. Compliance with the criteria outlined in this document will expedite FEMA's review process, thus allowing the effective FIS, FIRM, and FIRM for your community to be revised as appropriate, in a timely manner.

Should you have any questions regarding this matter, please do not hesitate to contact the Chief, Natural and Technological Hazards Division of FEMA in Chicago, Illinois, at (312) 408-5552 or Philip Myers of our Headquarters staff in Washington, D.C., at (202) 646-2755, or by facsimile at (202) 646-3445.

Sincerely,

  
 William R. Locke  
 Chief, Risk Studies Division  
 Federal Insurance Administration

Enclosures

cc: Mr. Donald Krause, Town of Dyer Code Enforcement Officer  
 Mr. Christopher B. Burke, Ph.D., P.E.,  
 State Coordinator



# Office of the Lake County Surveyor

5-B-5  
9-21-16

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

Bill Emerson, Jr.  
County Surveyor

September 16, 2016

Bill Emerson, Jr  
Lake County Surveyor  
2293 North Main Street  
Crown Point, Indiana 46307

RE: Monthly Report on Clearing and Snagging Crew  
Little Calumet River Watershed

Dear Mr. Emerson,

Following are the sites addressed by the crew since mid-August

August 8<sup>th</sup> – September 9<sup>th</sup>

Turkey Creek	Removed Fallen Trees and Cleared Easement
Turkey Creek	Removed Beaver Dam
Turkey Creek Lat #6	Removed Beaver Dam
Turkey Creek Lat #6	Removed Fallen Tree's
Spring Street	Removed Fallen Trees
Main Beaver Dam	Removed Beaver Dam

In addition, crew maintained/cleared easements along Cady Marsh Ditch, removed beaver dams and fallen trees at Johnson Ditch, also maintained/ inspected various culvert crossings countywide.

Respectfully,

Thomas Regalado  
Assistant Drainage Administrator

Cc: Daniel V. Gossman, Drainage Administrator  
Lake County Drainage Board and Advisory Committee

# Turkey Creek South of Joliet Street

St John. Twp.



Before

*Prepared by the Lake County Surveyor's Office*  
Bill Emerson, Jr Lake County Surveyor

# Turkey Creek South of Joliet Street

St. John Twp.



After

*Prepared by the Lake County Surveyor's Office*  
Bill Emerson, Jr Lake County Surveyor

# Turkey Creek Gatlin Ponds

St. John Twp.



Before

*Prepared by the Lake County Surveyor's Office*  
Bill Emerson, Jr Lake County Surveyor

# Turkey Creek Gatlin Ponds

St. John Twp.



After

*Prepared by the Lake County Surveyor's Office*  
Bill Emerson, Jr Lake County Surveyor

# Turkey Creek Lat # 6 West of I-65

Hobart Twp.



Before

*Prepared by the Lake County Surveyor's Office*  
Bill Emerson, Jr Lake County Surveyor

# Turkey Creek Lat # 6 West of I-65

Hobart Twp.



After

*Prepared by the Lake County Surveyor's Office*  
Bill Emerson, Jr Lake County Surveyor

# Turkey Creek Lat. #6 Brooke Wood

Ross Twp.



Before

*Prepared by the Lake County Surveyor's Office*  
Bill Emerson, Jr Lake County Surveyor

# Turkey Creek Lat. #6 Brooke Wood

Ross Twp.



After

*Prepared by the Lake County Surveyor's Office*  
Bill Emerson, Jr Lake County Surveyor

# Spring Street Ditch Highland East of Rte. 41

North Twp.



Before

*Prepared by the Lake County Surveyor's Office*  
Bill Emerson, Jr Lake County Surveyor

# Spring Street Ditch Highland East of Rte. 41

North Twp.



After

*Prepared by the Lake County Surveyor's Office*  
Bill Emerson, Jr Lake County Surveyor

# Main Beaver Dam Blaine St.

Center Twp.



Before

*Prepared by the Lake County Surveyor's Office*  
Bill Emerson, Jr Lake County Surveyor

# Main Beaver Dam Blaine St.

Center Twp.



After

*Prepared by the Lake County Surveyor's Office*  
Bill Emerson, Jr Lake County Surveyor



September 20, 2016

Lake County Surveyor's Office  
Lake County Government Center  
2293 North Main Street  
Crown Point, Indiana 46307

Attention: Mr. Bill Emerson, Jr. – Lake County Surveyor

Subject: **121 E. Joliet Street, Schererville**  
**Watercourse:** Spring Street Ditch  
(CBBEL Project No. 93-169)

Dear Bill:

Christopher B. Burke Engineering, LLC (CBBEL) has made a site visit to the subject site regarding the parking lot surrounding the building. The Lake County Surveyor's Office made repairs to this portion of Spring Street Ditch in 2013.

I do not believe that the storm sewer has caused settlement of the parking lot. It appears the culvert repair project was successful in that there are no sinkholes adjacent to the storm sewer and that the parking lot is exhibiting some uneven settlement, unrelated to the storm sewer.

If you have any questions, please do not hesitate to call (847) 823-0500.

Sincerely,

Thomas T. Burke, Jr., PhD, PE  
Vice President  
Head Water Resources Department

CC: Dan Gossman – LCSO  
Mary Ellen Kupsik – LCSO

TTB\sl  
N:\INDIANA\93169\2016\Reviews\L\_Enbridge Routine Pipeline Maintenance Work\_091616.docx

## Pictures from October 2012 Visit



**Pictures from September 2016 Visit**



5-C-1  
9-21-16



# Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

**Bill Emerson, Jr.**  
County Surveyor

August 22, 2016

U.S. Army Corps of Engineers  
Chicago District  
231 S. LaSalle Street, Ste. 1500  
Chicago, IL 60604

ATTN: Cedar Lake Draft Report - Founders Creek Regulated Drain

It is our understanding that concerns have arisen about regulated drains during review discussions of the DRAFT Feasibility Report, Aquatic Ecosystem Restoration Project, Cedar Lake, Indiana, prepared by the Chicago District of the U.S. Army Corps of Engineers. The question specifically regarded whether Founders Creek could be re-routed or modified without State of Indiana IDNR concurrence if the mouth of the creek was relocated as a part of the Cedar Lake Aquatic Ecosystem Restoration Project.

This memo is provided to confirm the procedures used by the Lake County Surveyor's Office when reviewing proposals for work on Regulated Drains as covered by Ordinance No. 1365C, Stormwater Management and Clean Water Regulations of Lake County, Indiana, revised October 8, 2013. Chapter Eight, Section 1 requires that proposed projects comply with applicable State of Indiana statutes and regulations. It is our practice for project reviews to request copies of all IDNR, IDEM, 401 and 404 permit correspondence, and further, to indicate that "No work should commence until all required state and federal permits are obtained." We believe this procedure is also consistent with the Indiana Drainage Code. (*I.C. 36-9-27-1 et. seq.*)

The Lake County Surveyor's Office is aware of the importance of the Ecosystem Restoration project to our county and the region. We stand ready to work with the Town and the U.S. Army Corps of Engineers to assure the successful completion of the project. If further questions arise, please contact me.

Sincerely,

Bill Emerson Jr., Lake County Surveyor

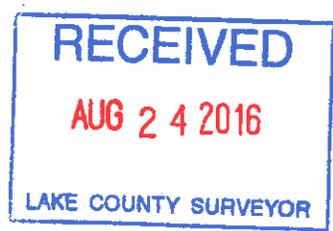
5-C-2  
9-21-16



STATE OF INDIANA  
DEPARTMENT OF NATURAL RESOURCES  
CERTIFICATE OF APPROVAL  
CONSTRUCTION IN A FLOODWAY

**APPLICATION #** : FW-28437  
**LAKE** : Unnamed Tributary Cedar Lake  
**APPLICANT** : Cedar Lake Enhancement Association  
Bob Gross  
14415 Lauerman Street  
Cedar Lake, IN 46302  
**AGENT** : S and L Environmental Group Inc  
Wayne Stanger  
15504 County Road 42  
Goshen, IN 46528

MAILED: August 22, 2016



**AUTHORITY** : IC 14-28-1 with 312 IAC 10

**DESCRIPTION** : The stream banks of an inlet to Cedar Lake (Lauerman Creek) will be stabilized. A bio-engineered seawall will be installed along approximately 490' of the north bank, and along approximately 380' of the south bank. The bioengineered seawall will be constructed using the joint planting method with 175 live stakes consisting of Redosier Dogwood, Silky Dogwood, Elderberry and Buttonbush native plant species planted within the riprap spaced 4'-5' apart. Approximately 51 cubic yards of soil will be excavated and removed from the floodway to an upland site. Details of the project are contained in information and plans received at the Division of Water on May 31, 2016, June 15, 2016 and July 11, 2016.

**LOCATION** : Beginning at the inlets mouth to Cedar Lake and extending upstream to Lauerman Street near Cedar Lake, Hanover Township, Lake County Section 34, T 34N, R 9W, Lowell Quadrangle  
UTM Coordinates: Downstream 4578701 North, 463236 East

**APPROVED BY** : James J. Hebenstreit  
James J. Hebenstreit, PE, Assistant Director  
Division of Water

**APPROVED ON** : August 22, 2016

Included: Notice Of Right To Administrative Review - General Conditions - Special Conditions - Service List

STATE OF INDIANA  
DEPARTMENT OF NATURAL RESOURCES

**NOTICE OF RIGHT TO ADMINISTRATIVE REVIEW**

**APPLICATION #: FW- 28437**

This signed document constitutes the issuance of a permit by the Department of Natural Resources, subject to the conditions and limitations stated on the pages entitled "General Conditions" and "Special Conditions".

The permit or any of the conditions or limitations which it contains may be appealed by applying for administrative review. Such review is governed by the Administrative Orders and Procedures Act, IC 4-21.5, and the Department's rules pertaining to adjudicative proceedings, 312 IAC 3-1.

In order to obtain a review, a written petition must be filed with the Division of Hearings within 18 days of the mailing date of this notice. The petition should be addressed to:

Director  
Division of Hearings  
Indiana Government Center North, Room N501A  
100 North Senate Avenue  
Indianapolis, Indiana 46204

The petition must contain specific reasons for the appeal and indicate the portion or portions of the permit to which the appeal pertains.

If an appeal is filed, the final agency determination will be made by the Natural Resources Commission following a legal proceeding conducted before an Administrative Law Judge. The Department of Natural Resources will be represented by legal counsel.

**STATE OF INDIANA  
DEPARTMENT OF NATURAL RESOURCES**

**GENERAL CONDITIONS**

**APPLICATION #: FW- 28437**

- ( 1 ) If any archaeological artifacts or human remains are uncovered during construction, federal law and regulations (16 USC 470, et seq.; 36 CFR 800.11, et al) and State Law (IC 14-21-1) require that work must stop and that the discovery must be reported to the Division of Historic Preservation and Archaeology within 2 business days.

Division of Historic Preservation and Archaeology  
Room W274  
402 West Washington Street  
Indianapolis, IN 46204

Telephone: (317) 232-1646, FAX: (317) 232-8036

- ( 2 ) This permit must be posted and maintained at the project site until the project is completed.
- ( 3 ) This permit does not relieve the permittee of the responsibility for obtaining additional permits, approvals, easements, etc. as required by other federal, state, or local regulatory agencies. These agencies include, but are not limited to:

<u>Agency</u>	<u>Telephone Number</u>
Kankakee River Basin Commission	(219) 763-0696
Lake County Drainage Board	
US Army Corps of Engineers	(312) 846-5539
Indiana Department of Environmental Management	(317) 233-8488 or (800) 451-6027
Local city or county planning or zoning commission	

- ( 4 ) This permit must not be construed as a waiver of any local ordinance or other state or federal law.
- ( 5 ) This permit does not relieve the permittee of any liability for the effects which the project may have upon the safety of the life or property of others.
- ( 6 ) This permit may be revoked by the Department of Natural Resources for violation of any condition, limitation or applicable statute or rule.
- ( 7 ) This permit shall not be assignable or transferable without the prior written approval of the Department of Natural Resources. To initiate a transfer contact:

Mr. Michael W. Neyer, PE, Director  
Division of Water  
Room W264  
402 West Washington Street  
Indianapolis, IN 46204

Telephone: (317) 232-4160, Toll Free: (877) 928-3755  
FAX: (317) 233-4579

- ( 8 ) The Department of Natural Resources shall have the right to enter upon the site of the permitted activity for the purpose of inspecting the authorized work.
- ( 9 ) The receipt and acceptance of this permit by the applicant or authorized agent shall be considered as acceptance of the conditions and limitations stated on the pages entitled "General Conditions" and "Special Conditions".

STATE OF INDIANA  
DEPARTMENT OF NATURAL RESOURCES

**SPECIAL CONDITIONS**

**APPLICATION #: FW- 28437**

**PERMIT VALIDITY** : This permit is valid for 24 months from the "Approved On" date shown on the first page. If construction work in the floodway has not been completed by August 22, 2018 the permit will become void. This permit may be renewed one (1) time if a written request is received by DNR, Division of Water prior to August 22, 2018. Thereafter the permit will become void and a new permit will be required in order to continue work on the project.

This permit becomes effective 18 days after the "MAILED" date shown on the first page. If both a petition for review and a petition for a stay of effectiveness are filed before this permit becomes effective, any part of the permit that is within the scope of the petition for stay is stayed for an additional 15 days.

**CONFORMANCE** : Other than those measures necessary to satisfy the "General Conditions" and "Special Conditions", the project must conform to the information received by the Department of Natural Resources on: May 17, 2016, May 31, 2016, June 15, 2016 and July 11, 2016. Any deviation from the information must receive the prior written approval of the Department.

<u>Number</u>	<u>Special Condition</u>
( 1 )	revegetate all bare and disturbed areas with a mixture of grasses (excluding all varieties of tall fescue), legumes, and native shrub and hardwood tree species as soon as possible upon completion
( 2 )	do not work in the waterway from April 1 through June 30 without the prior written approval of the Division of Fish and Wildlife
( 3 )	do not cut any trees suitable for Indiana bat or Northern Long-eared bat roosting (greater than 3 inches dbh, living or dead, with loose hanging bark, or with cracks, crevices, or cavities) from April 1 through September 30
( 4 )	use minimum average 6 inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids
( 5 )	do not use broken concrete as riprap
( 6 )	underlay the riprap with a bedding layer of well graded aggregate or a geotextile to prevent piping of soil underneath the riprap
( 7 )	all excavated material must be properly spread or completely removed from the project site such that erosion and off-site sedimentation of the material is prevented
( 8 )	minimize the movement of resuspended bottom sediment from the immediate project area
( 9 )	appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized
( 10 )	revegetate all bare and disturbed areas landward of the shoreline with a mixture of grasses (excluding all varieties of tall fescue) and legumes as soon as possible upon completion

STATE OF INDIANA  
DEPARTMENT OF NATURAL RESOURCES

**SPECIAL CONDITIONS**

**APPLICATION #: FW- 28437**

- ( 11) the vegetative component of a bioengineered wall is critical to the function of the wall and must be maintained throughout the life of the wall; replace dead or lost plants with the same species or other approved species within one growing season
- ( 12) do not place an impermeable material or structure (including but not limited to concrete, steel, or vinyl walls) directly behind the new seawall approved by this permit
- ( 13) the placement of the bioengineered seawall along this shoreline does not constitute an alteration that would change the shoreline classification on this project or nearby sites where shoreline classifications would be necessary for future permit application review
- ( 14) implement the mitigation plan received at the Division of Water on May 31, 2016, within one complete growing season of project initiation
- ( 15) the mitigation site must be monitored for the survival of the plantings for a minimum of three years; a report must be submitted to the Lakes Permitting Biologist at the Division of Fish and Wildlife, 402 W. Washington St., RM W264, Indianapolis, IN 46204-2641 by December 31 of each year to monitor the initiation, progress, and success of the mitigation site; the report must include appropriate pictures of vegetative plantings, a narrative describing the activity accomplished to date, acres planted, number planted, list of species planted on site, and estimated survival; reports must be submitted annually, even if work has not been initiated on site; there shall be a minimum of three full reports beginning after the first complete growing season after the last planting and seeding; reports are required until the mitigation site is complete or determined to be successful; if the mitigation site is not successful three years after work initiation, the permit will be considered out of compliance and another plan must be submitted for approval
- ( 16) the replacement habitat areas must have a minimum survival of 75% of planted material at the end of the monitoring period or additional plant material must be installed to meet the minimum survival
- ( 17) send photos, digital, or hard copy, of the bioengineered seawall no later than 14 days after completion to Nate Thomas, Lakes Permitting Biologist, Division of Fish and Wildlife, 1353 S Governors Dr., Columbia City, IN 46725; NThomas@dnr.in.gov
- ( 18) except for the material used as backfill as shown on the above referenced project plans on file at the Division of Water, place all excavated material landward of the floodway \*
- ( 19) all work must conform with the existing bank at the upstream and downstream limits of the project site
- ( 20) do not leave felled trees, brush, or other debris in the floodway \*
- ( 21) all riprap placed for bank stabilization must conform to the bank
- ( 22) upon completion of the project, remove all construction debris from the floodway \*
- ( 23) size and/or anchor the riprap to resist displacement by current or wave action
- ( 24) \* Note: for regulatory purposes, the floodway is defined as the area inundated by the Special Flood Hazard Area shown on Panel 327 of the Lake County Flood Insurance Rate Map dated January 18, 2012

STATE OF INDIANA  
DEPARTMENT OF NATURAL RESOURCES

SERVICE LIST

APPLICATION #: FW- 28437

Cedar Lake Enhancement Association  
Bob Gross  
14415 Lauerman Street  
Cedar Lake, IN 46302

S and L Environmental Group Inc  
Wayne Stanger  
15504 County Road 42  
Goshen, IN 46528

William Crister  
660 Morningside Drive  
Crown Point, IN 46307

Daniel Harkabus  
14304 Lauerman Street  
Cedar Lake, IN 46303

Indiana Department of Natural Resources  
Division of Law Enforcement  
District 10 Headquarters  
100 West Water Street  
Michigan City, IN 46360

Kankakee River Basin Commission  
Jody Melton  
910 Dogwood Street SW  
Demotte, IN 46310

Mr. Tim K Kubiak  
P.O. Box 707  
Cedar Lake, IN 46303

Robert and Sylvia Kubiak  
2035 Rue De St Tropez  
Austin, TX 78746-1952

Lake County Drainage Board  
2293 North Main Street  
Crown Point, IN 46307

Lake County SWCD  
880 East 99th Court, Suite A  
Crown Point, IN 46307

Richard LaVan  
1606 Coachmans Road  
Darien, IL 60561-5377

Robert and Kristie Lyons  
4255 142nd Street  
Midlothian, IL 60445

James Reitsma  
5790 Grant Street  
Merrillville, IN 46410-2428

US Army Corps of Engineers  
Chicago District  
231 South LaSalle Street, Suite 1500  
Chicago, IL 60604

Staff Assignment:

Administrative  
Technical  
Environmental  
Fish and Wildlife

: Scott H Dean  
: Scott H Dean  
: J. Matthew Buffington  
: Nathan D. Thomas

5-C-3  
9-21-16



# Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

Bill Emerson, Jr.  
County Surveyor

August 30, 2016

Bill Emerson, Jr.  
Lake County Surveyor  
2293 North Main Street  
Crown Point, IN 46307

Gerry Scheub, Chairman  
Lake County Drainage Board  
2293 North Main Street  
Crown Point, IN 46307

RE: Pheasant Ridge Unit 2 Lot 3  
8810 West 157<sup>th</sup> Place  
Lowell, West Creek Twp.

Dear Gentlemen,

On Monday August 29, 2016 an inspection was conducted with property owner Rob Johnson at 8810 West 157<sup>th</sup> Place in un-incorporated Lowell. I along with Assistant Drainage Administrator Tom Regalado met with Mr. Johnson and his wife to discuss the flooding in their front and rear yards. Mr. Johnson stated that this flooding has been a growing problem for several years. Mr. Johnson also indicated that the Lake County Highway Department had been out to inspect and perform some reconnaissance of the drainage for the subdivision.

According to the subdivision plat, the drainage installed for the subdivision should collect the stormwater in the roadside ditch on the north side of 157<sup>th</sup> Place and discharge through a culvert under the road to the south. From there the drainage should continue east to a structure that then turns and heads south to the detention pond. Mr. Johnson stated that since this route was not taking the stormwater as it was designed, the excess stormwater is now running through their side yard and into the back yard. Mr. Johnson showed several photos from various years that did in fact show where the water has traveled and remained for several days. I explained to Mr. Johnson that I would need to schedule a meeting with the County Highway to see what their investigations had discovered so that I wouldn't be unnecessarily duplicating any efforts.

To that end, I have scheduled a meeting with County Highway Engineer Duane Alverson, P.E. for Thursday September 1<sup>st</sup> in our office. I will keep you informed of the suggestions and outcome of that meeting. Should you have any questions or comments, please do not hesitate to let me know.

Respectfully,

A handwritten signature in black ink that reads "Daniel V. Gossman".

Daniel V. Gossman  
Drainage Administrator

Cc: Thomas Regalado, Asst Drainage Admn  
Marc Malczewski, Lake County Highway  
Duane Alverson P.E., Lake County Highway  
Harold Mussman, West Creek Township Advisory Committee Representative  
Lake County Drainage Board & Advisory Committee

5-C-4  
9-21-16



# TOWN OF LOWELL

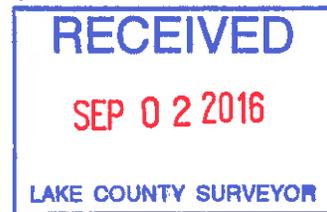
501 East Main Street • P.O. Box 157 • Lowell, IN 46356

Phone: 219-696-7794 • Fax: 219-696-7796

E-Mail: townhall@lowell.net

September 2, 2016

Mr. Bill Emerson  
Lake County Surveyor  
2293 North Main Street  
Crown Point, Indiana 46307



**Re: Lowell Stormwater Board Invitation**

Dear Surveyor Emerson,

The Lowell Stormwater Board would like to invite you, a representative from your office or a representative from the Lake County Drainage Board to the next Lowell Stormwater Board Meeting to discuss the progress and schedule for the cleaning of the Griesel Lateral 14 at Clark Road in Lowell. As you may be aware there has been an increase in flooding lately in nearby subdivisions and businesses because of the blockage in the drain. The Town Administration is growing anxious to find a solution to the problem and feels a meeting to discuss the topic could alleviate some of the anxiety over the issue.

The next Stormwater Board Meeting is scheduled for Thursday, September 8<sup>th</sup> at 5:30 pm. Please feel free to contact me for any further details on the matter. Thank you in advance for your response.

Sincerely,

Gregory White  
MS4 Coordinator, Town of Lowell

**Cc.:** Lowell Town Council  
Jeff Sheridan, Lowell Town Manager  
Matt Lake, Lowell Stormwater Board President  
Greg Shook, Lowell Public Works Director  
Lake County Drainage Board

5-C-4  
9-21-16



## Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

**Bill Emerson, Jr.**  
County Surveyor

September 6, 2016

Gregory White  
MS4 Coordinator  
Town of Lowell  
501 East Main Street  
Lowell, IN 46356

RE: Griesel Lateral No. 14  
Lowell, Cedar Creek Twp.

Dear Mr. White,

Please extend my apologies to the Lowell Stormwater Board, but due to scheduling conflicts neither I nor a representative from my office will be able to attend the meeting on Thursday September 8<sup>th</sup>. I sympathize with the flooding concerns, and related issues throughout the town. We also are addressing many flooding issues throughout the entire county with the significant rain events that occurred through the month of August.

The Lake County Drainage Board in the past couple of months has awarded several contracts in the Kankakee River Watershed that were scheduled to have maintenance performed this year. Currently, we are in the process of prioritizing projects for 2017, and would welcome a meeting with you and any Stormwater Board member to discuss any proposed maintenance on Griesel Lateral No. 14. I believe what was discussed when this ditch was applied for to be made a county regulated drain, was that the town would be willing to participate financially in some part of the maintenance.

Please contact me via email ([emerson@lakecountyin.org](mailto:emerson@lakecountyin.org)), to try and schedule a meeting in the next couple of weeks to discuss this further. We look forward to working with you and the Lowell Stormwater Board for this and future projects.

Sincerely,

A handwritten signature in black ink that reads "Bill Emerson, Jr." in a cursive style.

Bill Emerson, Jr.  
Lake County Surveyor

Cc: Dan Gossman, Drainage Administrator  
Cliff Duggan, Legal Advisor  
Alice Dahl, Cedar Creek Township Advisory Committee Representative  
Lake County Drainage Board & Advisory Committee

5-C-5  
9-21-16



September 9, 2016

Bill Emerson Jr.  
Lake County Surveyor  
Building 'A', 3rd Floor  
2293 N. Main Street  
Crown Point, IN 46307

**Re: Lake Drawdown Notification**

Bill:

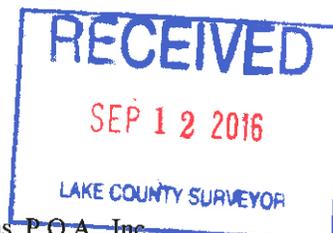
This letter is to inform you that the Lakes of the Four Seasons Property Owners Association will be conducting a lake drawdown during the first week of October to replace our concrete boat launch located on the south end of Lake Holiday. We will have a coffer dam installed around the project area. In order to keep an overflow of storm water from entering the work area we will need to lower our lake level by approximately 24 inches which will be done through our overflow tower. The water will flow through Stoney Run Creek the same as it normally would during storm events. Our calculations show that we will be reducing the lake level approximately 600 acre feet of water over the course of a week. We will be monitoring the flow below 123<sup>rd</sup> avenue using a flowmeter to get an accurate water exchange. We performed a drawdown of 32 inches in November of 2014 and there were no reported issues.

If you have any questions please give me a call at 219-988-2581.

Regards,

A handwritten signature in black ink that reads "Richard G. Cleveland". The signature is written in a cursive, flowing style.

Richard G. Cleveland  
LOFS Community Manager



Lakes of the Four Seasons, P.O.A., Inc.  
1048 N. Lake Shore Drive  
Crown Point, IN 46307

Telephone: (219) 988-2581  
Fax: (219) 988-3840  
Email: [cmgr@lofs.org](mailto:cmgr@lofs.org)



# Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

5-C-5  
9-21-16

*Bill Emerson, Jr.*  
County Surveyor

September 14, 2016

Bill Emerson, Jr.  
Lake County Surveyor  
2293 North Main Street  
Crown Point, Indiana 46307

RE: Lakes Of the Four Seasons – Lake Holiday Draw Down  
Discharge into Stoney Run Ditch East Branch  
Winfield and Eagle Creek Twps.

Dear Bill,

I would respectfully request that the LOFS draw down of Lake Holiday consider the following comments for discharging into the Stoney Run Ditch East Branch.

1. There shall be no discharges to a regulated drain after a significant rainfall event (greater than 0.5-inches) has occurred or such events have been forecasted. The discharges shall not begin again until floodwaters have receded to within 2.5 feet of normal water level.
2. All disturbed areas within the drainage easement shall be restored to pre-project conditions.
3. We recommend that following stage restrictions be followed at all time during activity within the drainage easement:
  - a. Stoney Run Ditch East Branch - A stage gage should be placed immediately downstream of 124<sup>th</sup> Court. The approximate Normal Water Level (NWL) and top of bank of this ditch based on Lake County aerial topography is 708.5 ft. and 719.0 ft., respectively. Work within this regulated drain should cease and all in-channel berming/dikes should be removed once floodwaters reach 716.5 ft. or 8 ft. above the NWL at the 124<sup>th</sup> Court stage gage. Work may re-commence once floodwaters have receded (with no predicted future significant storm events) to 2.5 ft. above NWL or 711.0 ft.
4. All sediment and erosion control devices shall be maintained throughout the project in fulfillment of NPDES regulations.
5. Notify the Lake County Surveyor's Office 24 hours prior to beginning draw down.

These comments are consistent with other applicants that have applied to the Drainage Board for similar discharges into regulated drains. Should you have any additional questions or comments, please do not hesitate to let me know.

Sincerely,

  
Daniel V. Gossman  
Drainage Administrator

Cc: Richard Cleveland, LOFS Community Manager  
Lake County Drainage Board & Advisory Committee

5-C-6  
9-21-16



# Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

**Bill Emerson, Jr.**  
County Surveyor

September 16, 2016

Bill Emerson, Jr  
Lake County Surveyor  
2293 North Main Street  
Crown Point, Indiana 46307

RE: Monthly Report on Clearing and Snagging Crew  
Kankakee River Watershed

Dear Mr. Emerson,

Following are the sites addressed by the crew since mid-August

August 8<sup>th</sup> – September 12<sup>th</sup>

West Creek Lat. #2

Cleared Easement and Debris

In addition, crew maintained/cleared easements along West Creek, removed beaver dams and fallen trees at Stony Run, also maintained/ inspected various culvert crossings countywide.

Respectfully,

Thomas Regalado  
Assistant Drainage Administrator

Cc: Daniel V. Gossman, Drainage Administrator  
Lake County Drainage Board and Advisory Committee

# West Creek Lat. #2 The Shrine on Rte. 41

St. John Twp.



Before

*Prepared by the Lake County Surveyor's Office*  
Bill Emerson, Jr Lake County Surveyor

# West Creek Lat #2 The Shrine on Rte. 41

St. John Twp.



After

*Prepared by the Lake County Surveyor's Office*  
Bill Emerson, Jr Lake County Surveyor

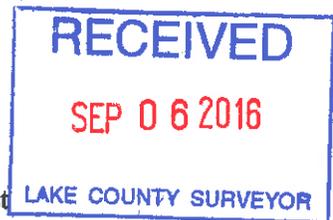
5-E-5  
9-21-16

# DNR Indiana Department of Natural Resources

Michael R. Pence., Governor  
Cameron F. Clark, Director  
Division of Water  
402 W. Washington Street  
Room W264  
Indianapolis, IN 46204  
Phone (317) 232-4160  
Toll-free (877) 928-3755  
Fax (317) 233-4579  
[www.in.gov/dnr/water/](http://www.in.gov/dnr/water/)

September 6, 2016

Bill Emerson Jr.  
Lake County Surveyor  
Building A, 3<sup>rd</sup> Floor  
2293 N. Main Street  
Crown Point, IN 46307



RE: SEA 368 Field Review Request

Dear Mr. Emerson:

Reference is made to an email received on September 1, 2016 from Benjamin Harvey, American Structurepoint regarding three reconstruction projects. For your records, the file number for the reviews are:

- 1) Cedar Creek: This project is assigned to DNR file SEA #909.
- 2) McConnell Ditch: This project is assigned to DNR file SEA #910.
- 3) Singleton Ditch: This project is assigned to DNR file SEA #911.

We are currently working on setting a meeting date for a review for two of the projects, SEA #909, Cedar Creek and SEA #911, Singleton Ditch, and we will notify you when a date has been set.

Additionally, because the total stream length of McConnell Ditch is less than 10 miles, a **Construction in a Floodway Permit is not required** for either project from the Indiana Department of Natural Resources (IDNR) under *IC 14-28-1*. Because there are no lakes over 10 acres in size that are within one-half (1/2) mile of the McConnell Ditch project, a **Ditch Reconstruction permit is not required** under *IC 14-26-5*. However, you must provide evidence from the US Army Corps of Engineers that states an individual Section 404 permit will not be required for the project. If an individual 404 permit is required from the Corps, then an SEA 368 field review will be conducted. If an individual 404 permit is not required, then there will be no need for the field review and the SEA files will be terminated.

Please submit a written statement from the Corps regarding their jurisdictional decision on any of the three projects (please refer to the SEA number). Contact information for the Corps is:

Chicago Corps of Engineers  
111 North Canal Street  
Chicago, IL 60606-7206  
Phone: (312) 846-5530  
Fax : (312) 353-4110

Thank you for your cooperation in this matter. If you should have any questions please contact me at (317) 234-0586.

Sincerely,  
*Erin Basiger*  
Erin Basiger  
Statewide Environmental Biologist



Handout 5-E-5  
9-21-16

# Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

Bill Emerson, Jr.  
County Surveyor

## NOTICE OF AWARD

September 19, 2016

Delta III, Inc.  
2063 W. 1250 S.  
Hanna, Indiana 46340

**Contract No. 2016-K-6; Contract Amount: \$123,075.00**  
**Project: 2016 Cedar Creek Maintenance**  
Lake Dalecarlia to 171<sup>st</sup> Avenue, Cedar Creek Township

The Lake County Surveyor's Office on behalf of the Lake County Drainage Board, in accordance with the provisions of the contracts general conditions, you are hereby notified of the 2016 Cedar Creek Maintenance from Lake Dalecarlia to 171st Avenue, Cedar Creek Township, contract to Delta III Inc.

Please contact our office to schedule a time during the week of September 26 through September 30, 2016 to sign the contract. As per Indiana Code 36-9-27-78 "Upon execution of the contract, the successful bidder shall give to the board a bond payable to the board, in an amount fixed by the board but not less than the amount of the bid, and with a corporate surety licensed to do business in Indiana. The bond must be conditioned on the faithful performance of the contract and the payment of all expenses and damages incurred under the contract, including payment of all suppliers, laborers, and subcontractors. However, in lieu of a corporate surety bond, the board may accept:

- (1) a cash bond;
- (2) a property bond; or
- (3) a bond from a sufficiently financed private bonding company".

A notice to proceed along with a pre-construction meeting will be scheduled as soon as the contract is signed and the bond is posted.

Sincerely,

Daniel V. Gossman  
Drainage Administrator

Cc: Bill Emerson, Jr., Lake County Surveyor  
Cliff Duggan, Legal Advisor  
Peter Katic, Drainage Board Attorney  
Tom Regalado, Asst Drainage Admn  
Alice Dahl, Cedar Creek Township Advisory Committee Representative  
Lake County Drainage Board & Advisory Committee

Handout 5-E-6  
9-21-16



# Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

Bill Emerson, Jr.  
County Surveyor

## NOTICE OF AWARD

September 19, 2016

Austgen Equipment, Inc.  
11309 Broadway  
Crown Point, Indiana 46307

**Contract No. 2016-K-7; Contract Amount: \$430,311.85**  
**Project: 2016 McConnell Ditch Maintenance**  
Morse Street to 171<sup>st</sup> Avenue, Cedar Creek Township

The Lake County Surveyor's Office on behalf of the Lake County Drainage Board, in accordance with the provisions of the contracts general conditions, you are hereby notified of the 2016 McConnell Ditch Maintenance from Morse Street to 171st Avenue, Cedar Creek Township, contract to Austgen Equipment Inc.

Please contact our office to schedule a time during the week of September 26 through September 30, 2016 to sign the contract. As per Indiana Code 36-9-27-78 "Upon execution of the contract, the successful bidder shall give to the board a bond payable to the board, in an amount fixed by the board but not less than the amount of the bid, and with a corporate surety licensed to do business in Indiana. The bond must be conditioned on the faithful performance of the contract and the payment of all expenses and damages incurred under the contract, including payment of all suppliers, laborers, and subcontractors. However, in lieu of a corporate surety bond, the board may accept:

- (1) a cash bond;
- (2) a property bond; or
- (3) a bond from a sufficiently financed private bonding company".

A notice to proceed along with a pre-construction meeting will be scheduled as soon as the contract is signed and the bond is posted.

Sincerely,

Daniel V. Gossman  
Drainage Administrator

Cc: Bill Emerson, Jr., Lake County Surveyor  
Cliff Duggan, Legal Advisor  
Peter Katic, Drainage Board Attorney  
Tom Regalado, Asst Drainage Admn  
Alice Dahl, Cedar Creek Township Advisory Committee Representative  
Lake County Drainage Board & Advisory Committee



Handout 5-E-7  
9-21-16

# Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

Bill Emerson, Jr.  
County Surveyor

## NOTICE OF AWARD

September 19, 2016

Delta III, Inc.  
2063 W. 1250 S.  
Hanna, Indiana 46340

**Contract No. 2016-K-5; Contract Amount: \$209,099.00**  
**Project: 2016 Singleton Ditch Maintenance – Phase III**  
Monon Road to Mississippi Street, Cedar Creek & Eagle Creek Townships

The Lake County Surveyor's Office on behalf of the Lake County Drainage Board, in accordance with the provisions of the contracts general conditions, you are hereby notified of the 2016 Singleton Ditch Maintenance – Phase III from Monon Rd to Mississippi St, Cedar Creek & Eagle Creek Townships, contract to Delta III Inc.

Please contact our office to schedule a time during the week of September 26 through September 30, 2016 to sign the contract. As per Indiana Code 36-9-27-78 "Upon execution of the contract, the successful bidder shall give to the board a bond payable to the board, in an amount fixed by the board but not less than the amount of the bid, and with a corporate surety licensed to do business in Indiana. The bond must be conditioned on the faithful performance of the contract and the payment of all expenses and damages incurred under the contract, including payment of all suppliers, laborers, and subcontractors. However, in lieu of a corporate surety bond, the board may accept:

- (1) a cash bond;
- (2) a property bond; or
- (3) a bond from a sufficiently financed private bonding company".

A notice to proceed along with a pre-construction meeting will be scheduled as soon as the contract is signed and the bond is posted.

Sincerely,

Daniel V. Gossman  
Drainage Administrator

Cc: Bill Emerson, Jr., Lake County Surveyor  
Cliff Duggan, Legal Advisor  
Peter Katic, Drainage Board Attorney  
Tom Regalado, Asst Drainage Admn  
Alice Dahl, Cedar Creek Township Advisory Committee Representative  
John Jurs, Eagle Creek Township Advisory Committee Representative  
Lake County Drainage Board & Advisory Committee



# Office of the Lake County Surveyor

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Phone: (219) 755-3745 • Fax: (219) 755-3750

Bill Emerson, Jr.  
County Surveyor



6-B

## NOTICE OF ACTION Application No. 300-7-16-I-II-III

September 21, 2016

Mr. Jack Slager  
Preserve, S.J. LLC  
8900 Wicker Avenue  
St. John, IN 46373

DEAR PETITIONER:

THIS NOTICE IS TO INFORM YOU THAT YOUR PETITION OR REQUEST FOR

**Bull Run Ditch, St. John Twp.**

**Applicant: Preserve, S.J., LLC**

Application to "Perform Work", "Connect/Discharge" and "Place Temporary/Permanent Structure" within regulated drain for the purpose of a subdivision development.

WAS CONSIDERED BY THE DRAINAGE BOARD AT A MEETING ON THE 21st DAY OF **SEPTEMBER, 2016** WITH THE FOLLOWING ACTION:

APPROVED PETITION OR REQUEST.

APPROVED PETITION OR REQUEST SUBJECT TO CONDITIONS LISTED ON ATTACHMENT #1.

CONTINUED PETITION OR REQUEST TO **OCTOBER 19, 2016** MEETING.

DENIED PETITION OR REQUEST.

REMOVED FROM THE AGENDA. IF YOU WOULD LIKE TO REAPPLY TO THE DRAINAGE BOARD A NEW APPLICATION WILL NEED TO BE SUBMITTED, 14 DAYS PRIOR TO THAT MONTH'S MEETING.

PETITION NOT RELEASED DUE TO NON-PAYMENT OF APPLICATION FEE(S).

IF YOU HAVE ANY FURTHER QUESTIONS, PLEASE CONTACT BILL EMERSON, JR. OR DAN GOSSMAN AT (219) 755-3745.

MARY ELLEN KUPSIK  
Lake County Drainage Board Secretary

Handout Co-A  
9-21-16



**ATTACHMENT #1**

7260 Shadeland Station, Indianapolis, Indiana 46256  
TEL 317.547.5580 FAX 317.543.0270

www.structurepoint.com

---

**M E M O R A N D U M**

---

**DATE:** September 19, 2016  
**TO:** Bill Emerson, Jr., Lake County Surveyor  
**FROM:** Brian Payne, Staff Engineer  
**RE:** The Preserve Subdivision  
**CC:** Dan Gossman, Jordan McCormack, Jeremy Schmitt, Trevor Murphy

---

As requested by the Lake County Surveyor's Office, American Structurepoint, Inc. has reviewed The Preserve, S.J. LLC's application to perform the following tasks within a regulated drain:

- Work within a regulated drain
- Connect/discharge into the drain/easement
- Place temporary/permanent structure in the drain/easement

The application was submitted by Jack Slager of The Preserve, S.J. LLC, for the construction of the The Preserve Subdivision. The project site to be developed is approximately 234 acres, and is adjacent to Buli Run Creek. The proposed site will be developed with 432 single family residential lots, public roadways, water main, sanitary sewer extensions, and on-site detention basins with associated storm sewers.

The proposed project is described as follows:

**Owner/Developer:** The Preserve, S.J. LLC

**Project Name:** The Preserve Subdivision

**Project Location:** The Preserve Subdivision is located at the northwest corner of 101<sup>st</sup> Avenue and White Oak Avenue in the Town of St. John, Lake County, Indiana. The project is adjacent to approximately 6,000 linear feet of Bull Run Creek.

---

**Description:**

To complete the project as designed, the Applicant needs permission to construct the following within the 75-foot drainage easement :

- Install approximately 700 feet of 10-inch sanitary sewer
- Install three (3) sanitary manholes
- Install one (1) storm inlet and one (1) storm catch basin
- Install approximately 64 feet of 12-inch storm sewer
- Construct six (6) discharge points
- Construct three (3) flared end section outfalls into Bull Run Creek

**Submittal  
Information  
Received:**

- Final Stormwater Report dated July 19, 2016 and delivered to the Lake County Surveyor's Office.
- Drainage Board Application
- Construction Plans
- Compensatory storage calculations
- Compensatory storage floodway exhibit and typical profile (31+00)

**Review Comments:**

American Structurepoint, Inc. has completed a review of the submittal to verify compliance with the requirements of the Lake County Ordinance No. 1365C. This comment letter is a review for general conformance with standards. The Project Engineer is still responsible for his own design and neither the County nor the County's Engineer is responsible for the completeness of the design. We submit the following comments:

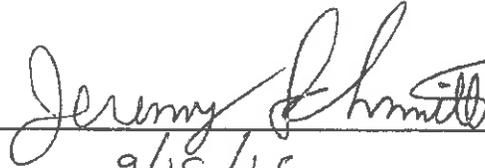
1. Provide a copy to the Drainage Board of any Letter of Map Revision submitted to FEMA.
2. While completing the work, the Applicant shall ensure that no construction debris or materials are placed within the ditch channel.
3. Excavated soil and other construction materials shall be stockpiled outside of the ditch channel and outside the top of banks of the ditch. Work within the drainage easement should be minimized to just the tasks necessary for completion of this project.
4. Outlets into Bull Run shall be constructed in accordance with INDOT standards for erosion protection and shall be permitted with the Indiana Department of Natural Resources, as appropriate.
5. The contractor is responsible for successfully implementing the Soil Erosion and Sedimentation Control Plan included in the Project Plans.

6. All future phases of the project shall be submitted to Drainage Board for review before they are constructed.
7. The Applicant's design meets the Lake County Stormwater Ordinance requirements that general release rates do not exceed 0.2 cfs per acre of development. The following data is provided for a comparison to show the post-developed release rates are lower than allowed:
  - Proposed post-developed release rate will be 21.8 cfs.
  - Lake County Stormwater Ordinance allows a total post-developed release rate up to 46.8 cfs for the entire development.
  - Existing (undeveloped) site has a current release rate of 96.2 cfs.
8. The Applicant's design also meets the Lake County Stormwater Ordinance No Net Loss Floodplain Storage Policy that requires compensatory storage equal to 1.5 times the floodplain storage lost due to construction within the floodplain. The applicant is placing 1,517 cubic yards of fill into the floodplain but constructing 3,595 cubic yards of compensatory storage (2.4 times the lost flood plain storage).

**Recommendation:**

Based on the information provided, the Applicant appears to have met all applicable criteria with regards to The Preserve Subdivision drainage application for Lake County. Therefore, American Structurepoint recommends the drainage application for the Preserve Subdivision be approved subject to the Applicant adhering to the comments stated above. The Applicant shall follow the construction requirements above as well as keep Lake County informed of future construction phases or floodway map revisions.

Reviewed by: \_\_\_\_\_



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

9/19/16

APPLICATION NO. 300-7-16-I-II-III

APPLICATION FOR PERMISSION TO PERFORM THE FOLLOWING TASK(S) WITHIN A  
REGULATED DRAIN  
[PLEASE CHECK THE APPROPRIATE BOX]



I. **WORK WITHIN A REGULATED DRAIN**



II. **CONNECT/DISCHARGE INTO THE DRAIN/EASEMENT**



III. **PLACE TEMPORARY/PERMANENT STRUCTURE IN THE  
DRAIN/EASEMENT**



IV. **REDUCE EASEMENT FROM SEVENTY-FIVE (75) FEET**

TO THE LAKE COUNTY DRAINAGE BOARD, LAKE COUNTY, INDIANA;

(Name) Preserve, S.J., LLC, 8900 Wicker Ave, St. John IN 46373

Contact: Jack Slager, (219) 365-6000

HEREINAFTER CALLED APPLICANT, HEREBY MAKES APPLICATION TO THE LAKE COUNTY DRAINAGE BOARD TO PERFORM THE ABOVE DESCRIBED ACTIVITY WITHIN A REGULATED DRAIN AND/OR THE EASEMENT FOR A REGULATED DRAIN WHICH IS PART OF THE DRAINAGE SYSTEM FOR LAKE COUNTY, INDIANA.

**THE LOCATION IS AS FOLLOWS:**

NAME OF WATERWAY: Bull Run Creek

SECTION(s): 30,31 TOWNSHIP: 35N RANGE: 9W

ADDRESS OR DESCRIPTION OF LOCATION \_\_\_\_\_

Northwest Corner of 101st Avenue and White Oak Avenue, St. John, Indiana

**THE REQUEST IS TO CONSIST OF THE FOLLOWING ACTIVITIES:**

-Grading for detention basins in the floodplain/floodway for The Preserve Subdivision

-Installation of restrictor structures and storm sewer to outlet into Bull Run Creek

**THE PURPOSE OF THE REQUEST IS TO:**

-Approval of the stormwater management aspects of The Preserve Subdivision

1. THE APPLICANT HEREBY AGREES TO RESTORE THE LAND, DRAINAGE DITCHES AND ALL OTHER SURFACES AND/OR STRUCTURES WITHIN THE DITCH AND REGULATED DRAIN EASEMENT TO A CONDITION AS GOOD OR BETTER THAN THEY WERE PRIOR TO THE COMMENCEMENT OF THE WORK.
2. THE APPLICANT SHALL AND WILL INDEMNIFY AND HOLD HARMLESS ANY AND ALL COUNTY ENTITIES, INCLUDING BUT NOT LIMITED TO THE COUNTY OF LAKE, BOARD OF COMMISSIONERS OF THE COUNTY OF LAKE, THE LAKE COUNTY DRAINAGE BOARD, LAKE COUNTY SURVEYOR, ITS ELECTED OFFICIALS, ITS APPOINTED OFFICIALS, ITS OFFICERS, ITS EMPLOYEES, ITS DEPARTMENTS, ITS BOARDS AND/OR AGENTS FROM AND AGAINST ANY AND ALL DAMAGES, INJURIES, LOSSES, DEMANDS, OR COSTS PROXIMATELY CAUSED BY THE FAULT, CULPABILITY OR NEGLIGENCE OF THE APPLICANT IN THE PERFORMANCE OF OR IN ANY WAY RELATED TO OR RESULTING FROM THE PERMITTED WORK OVER AND ACROSS THE DRAINS OR DRAINAGE RIGHTS-OF-WAY UNDER THE JURISDICTION OF THE LAKE COUNTY DRAINAGE BOARD.
3. **IMPORTANT CLAUSE IN THIS PERMIT APPLICATION:** THE APPLICANT FURTHER AGREES TO NOTIFY THE LAKE COUNTY DRAINAGE BOARD OR THE LAKE COUNTY SURVEYOR IN WRITING AT LEAST FIVE (5) DAYS IN ADVANCE OF THE COMMENCEMENT OF THE WORK DESCRIBED IN THIS APPLICATION, AND WILL ALSO GIVE NOTICE TO THE LAKE COUNTY DRAINAGE BOARD OR THE LAKE COUNTY SURVEYOR THE DAY PRECEDING THE COMPLETION OF THE WORK. FAILURE TO PROVIDE SUCH NOTICE MAY CAUSE REVOCATION OF THE PERMIT(S) AND APPLICANT MAY INCUR PENALTIES. PLEASE SEND NOTICES TO: LAKE COUNTY DRAINAGE BOARD, ATTN: LAKE COUNTY DRAINAGE BOARD SECRETARY, 2293 N. MAIN STREET, CROWN POINT, IN 46307
- 4(a). THE APPLICANT AGREES TO AVOID CAUSING DAMAGE TO THE ESTABLISHED REGULATED DRAIN OR TO LANDOWNERS AFFECTED BY THE DRAIN, PURSUANT TO I.C.36-9-27-72(D).
- 4(b). FOR APPLICATIONS REGARDING THE PLACEMENT OF TEMPORARY STRUCTURES IN THE DRAIN'S EASEMENT (BOX III, PAGE 1), SUCH AS FENCES, TREES, GARDENS, SHEDS, ETC., THE APPLICANT UNDERSTANDS THAT, IF THE DRAINAGE BOARD GRANTS PERMISSION TO PLACE SAID TEMPORARY STRUCTURES WITHIN THE DRAINAGE EASEMENT, SAID PLACEMENT IS AT THE OWNER'S RISK. SHOULD THE COUNTY SURVEYOR/DRAINAGE BOARD, THEIR AGENTS, REPRESENTATIVES, CONTRACTORS OR OTHERS AT THE DIRECTION OF SAID COUNTY SURVEYOR/DRAINAGE BOARD, NEED ACCESS TO THE DRAIN OR EASEMENT AND THE STRUCTURE REQUIRES REMOVAL, THE OWNER SHALL REMOVE SAME AT THE OWNER'S EXPENSE. SHOULD THE OWNER FAIL TO REMOVE SAME IN A TIMELY FASHION, THEN THE COUNTY SURVEYOR/DRAINAGE BOARD SHALL CAUSE SAME TO BE REMOVED AND THE OWNER SHALL HAVE NO RECOURSE. AFTER COMPLETION OF THE COUNTY SURVEYOR'S/DRAINAGE BOARD'S ACTIVITY, THE OWNER SHALL HAVE THE RIGHT TO REINSTALL THE TEMPORARY STRUCTURE IN COMPLIANCE WITH THE COUNTY SURVEYOR'S/DRAINAGE BOARD'S REQUIREMENTS. THE COUNTY SURVEYOR/DRAINAGE BOARD MAY REQUIRE PAYMENT FROM THE OWNER FOR THE COST OF THE REMOVAL OR REPLACEMENT FOR ANY OF SAID ITEMS, PURSUANT TO STATUTE.
5. THE APPLICANT SHALL HAVE WORKMAN'S COMPENSATION INSURANCE AS REQUIRED BY STATE LAW.
6. THE APPLICANT SHALL PAY THE LAKE COUNTY SURVEYOR'S OFFICE AN APPLICATION FEE(S) PRIOR TO THE APPLICATION BEING CONSIDERED AT THE NEXT MONTHLY LAKE COUNTY DRAINAGE BOARD MEETING.
7. THE APPLICANT SHALL CARRY PUBLIC LIABILITY INSURANCE MEETING THE MAXIMUM DOLLAR LIMITS AS SPECIFIED IN I.C. 34-13-3-1 ET SEQ. OR ANY SUBSEQUENTLY ENACTED APPLICABLE STATUTES, AND SHALL LIST THE COUNTY OF LAKE, THE BOARD OF COMMISSIONERS OF THE COUNTY OF LAKE, THE LAKE COUNTY DRAINAGE BOARD, LAKE COUNTY SURVEYOR, ITS ELECTED OFFICIALS, ITS APPOINTED OFFICIALS, ITS OFFICERS, ITS EMPLOYEES, ITS DEPARTMENTS, ITS BOARDS AND AGENTS AS OTHER INSURED.
8. THIS PERMIT DOES NOT OBTAIN ANY OTHER FEDERAL, STATE AND/OR LOCAL AUTHORIZATION, IF REQUIRED.

9 BY SUBMITTING THIS APPLICATION, THE APPLICANT HEREBY STATES THE FOLLOWING:

- A. THE PROPOSED WORK MEETS ALL HYDRAULIC REQUIREMENTS THAT WILL PERMIT THE DRAIN TO FUNCTION PROPERLY. (I.C. 36-9-37-72 (C)).
- B. THE REGULATED DRAIN IS ADEQUATE TO HANDLE THE ADDITIONAL FLOW OF WATER, IF ANY
- C. NO HARMFUL POLLUTION IS LIKELY TO RESULT. (I.C. 36-9-27-17(C)).

10. ENGINEERING PLANS, WHICH SUBSTANTIATE THE ABOVE STATEMENTS, MUST ACCOMPANY THIS APPLICATION. THESE PLANS MUST INCLUDE SUFFICIENT DETAIL TO ALLOW VERIFICATION OF THE ABOVE STATEMENTS. (THESE PLANS SHOULD GENERALLY INCLUDE DIMENSIONS, ELEVATIONS, CALCULATIONS, DESCRIPTIONS OR THE QUANTITIES AND TYPES OF MATERIAL TO BE USED, DISCHARGE CALCULATIONS AND OTHER RELEVANT INFORMATION.)

11. UPON COMPLETION OF THE WORK, "AS BUILT PLANS", SIGNED AND SEALED BY AN INDIANA REGISTERED PROFESSIONAL ENGINEER, SHALL BE FORWARDED TO THE LAKE COUNTY DRAINAGE BOARD WITHIN 30 DAYS.

12. THE DRAINAGE BOARD RESERVES THE RIGHT TO WAIVE ANY OF THE REQUIREMENTS STATED HEREON.

SUBMITTED: JACK A. SLAER DATE: 7/15/16  
(PRINT OR TYPE NAME)

[Signature]  
(SIGNATURE)

SUBMITTED FOR: PRESERVE, S.D., LLC

ADDRESS P.O. Box 677

ST JOHN, IN 46373

PHONE#: (219) 365-6000

(THIS SECTION FOR DRAINAGE BOARD USE ONLY)

LAKE COUNTY DRAINAGE BOARD [Signature]

[Signature] V.B.  
[Signature] D.H.

DATE: 9-21-16 APPROVED: X\* DENIED: \_\_\_\_\_

SHOULD ANY APPLICATIONS BE SUBMITTED BY AN AGENT, CONSULTANT, ENGINEER, REPRESENTATIVE OR OTHERS PURPORTING TO ACT AS THE OWNER, THEN A POWER OF ATTORNEY SHALL BE DULY EXECUTED AND ATTACHED TO THESE APPLICATIONS. [SEE ATTACHMENT I]

**APPROVAL SHALL BE VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF APPROVAL. SHOULD THE WORK AND ALL RELATED ACTIVITIES NOT BE COMPLETED BY THAT TIME, PETITIONER IS REQUIRED TO REAPPLY. SHOULD THE SCOPE OF WORK, PLANS AND SPECIFICATIONS, OR ACTIVITIES LISTED HEREIN BE MODIFIED, PETITIONER MUST NOTIFY THE LAKE COUNTY SURVEYOR AND THE DRAINAGE BOARD OF THESE MODIFICATIONS FOR REVIEW AND/OR APPROVAL/DENIAL BY THE COUNTY SURVEYOR/DRAINAGE BOARD.**

**\*NOTE: APPROVED WITH CONDITIONS. SEE ATTACHED "NOTICE OF ACTION".**

## **Project Overview**

The Preserve Subdivision is located at the northwest corner of 101<sup>st</sup> Avenue and White Oak Avenue in the Town of St. John, Lake County, Indiana. A site location map can be found on the cover of the plan set. The project site to be developed is approximately 234 acres, and is adjacent to Bull Run Creek. The proposed site will be developed with 432 single family residential lots, public roadways, watermain, sanitary sewer extensions, and on-site detention basins with associated storm sewers. The on-site detention basins are designed to provide stormwater detention for the proposed on-site conditions and the emergency overflow weirs can safely pass the existing tributary areas per St. John standards. The proposed detention basins B, C, D, and existing basin H discharge directly to Bull Run Creek. Detention Basins E and F discharge to Basin G which outlets to a 12" culvert beneath White Oak Avenue and connects to an existing 10" PVC pipe that passes through Rosewood Estates prior to discharging to Bull Run Creek. Basin A discharges to a 24" culvert beneath White Oak Avenue. The proposed detention basins were analyzed using PondPack (TR55). 100 Year rainfall data from Table 3-5 of the Lake County, Indiana Stormwater Technical Standards Manual was used in the site's stormwater calculations.

## **Existing Drainage Characteristics**

The existing site is a farmed area with some wooded areas with a drainage divide through the center of the property which divides drainage to the east and west. The northwest portion of the site (Area 4) slopes toward the existing detention basin (Basin H). The surrounding properties to the north and east are residential developments. The existing Basin H serves the 111 acre development to the north while also accepting 11 acres from the east. The area to the west and south of the site are bounded by Bull Run Creek. Please see the Existing Conditions Drainage Exhibit in this report.

The US EPA Watershed Map indicates that the site lies within the Bull Run Creek watershed (12 digit Hydrologic Unit Code 071200011308). Lake County topography indicates a major ridge in the center of the site that splits the drainage to the east and west, and the southern portion of the site drains south into Bull Run Creek. The area of the site that drains west flows into a series of depressions that ultimately discharges to a small channel at the southeast portion of the site. The small channel outlets to a 24" culvert beneath White Oak Avenue that daylight on the east side of the road where the flow travels overland for approximately 600 feet before entering Bull Run Creek. The existing drainage patterns are maintained under proposed conditions.

The USFWS National Wetland Inventory Map indicates the presence of wetlands on the site. Wetland Consultants are in the process of preparing a formal wetland delineation report for the area. Please see the National Wetlands Inventory Map Exhibit in this report.

The Custom Soil Survey Report for the Town of St. John, Lake County, Indiana, generated by the USDA, indicates that the soils likely to be found on the site are Blount silt loam, Del Rey silt loam, Pewamo silty clay loam, Elliott silt

loam, Markham silt loam, Milford silt loam, Morley silty clay loam, and Morley silt loam, all classified as Group-C or C/D soils. Please see the Hydrologic Soil Group Exhibit in this report for more information.

The FEMA Flood Insurance Rate Map (FIRM) Panel numbers for the site are Map Numbers 18089C0228E, 18089C0210E, 18089C0220E, 18089C0236E effective January 18, 2012. The panels indicate the majority of the site is within a Zone X designation. However, there is also Numbered Zone A Floodplain and Floodway associated with Bull Run Creek located on the site. Please see the FEMA FIRM Map Exhibit in this report.

The existing conditions currently drain into the Bull Run Creek watershed at multiple discharge points. The Existing Conditions Drainage Exhibit shows the site divided into 18 tributary areas. Area 4 drains to the existing detention basin. Areas 5, 6, 7, 8, 9, 10, 11, 12, and 13 discharge directly into Bull Run Creek. Areas 1, 2, 15, and 18 discharge into existing storm sewer along White Oak Avenue and 93<sup>rd</sup> Avenue which routes through the residential development to the north before ultimately discharging to the existing detention basin. Areas 3, 17, and 16 have depressions that overflow to the area 14 depression which ultimately discharges to the 24" Culvert beneath White Oak Avenue. The existing conditions were modeled using PondPack (TR-55) assuming surface coverage of straight row crops in good hydrologic condition (CN=85, 89) and woods in good hydrologic condition (CN=72, 79), and a critical duration analysis was prepared. Please see the attached Pond Pack analysis for more information.

Local drainage ordinances require that the allowable release rate be determined as the lesser of the calculated existing 2 year frequency discharge rate, and 0.2 cfs/acre of development. As shown in Table 1, for the 2 year frequency, the critical duration is 1 hour with a flow of 96.23 cfs. Using the 0.2 cfs/acre of development yields a release rate of 46.8 cfs for the 234 acres to be disturbed. Therefore, the gross allowable release rate is governed by 0.2 cfs/acre and is 46.8 cfs.

## **Proposed Conditions**

The proposed site will consist of 432 single family residential lots, public roadways, watermain, sanitary sewer extensions, and on-site detention basins with associated storm sewers. The on-site detention basins are designed to provide stormwater detention for the proposed on-site conditions and the emergency overflow weir can safely pass the existing tributary areas per St. John standards. The subdivision will be constructed with seven (7) proposed detention basins located onsite along with one (1) existing basin that was sized with the intention of providing storage for the proposed development. Proposed basins A, D, E, F and G will be dry bottom ponds, compensatory storage basins B and C will be wet bottom with native plantings to promote water quality.

The system was modeled and designed using PondPack, which is able to analyze multiple interconnected ponds. Connections between ponds were modeled as culverts where standard pipe sizes are proposed. Where nonstandard sizes are needed, an orifice plate will be provided, and has been modeled accordingly. The hydrologic modeling used rainfall data from the Lake County, Indiana Stormwater Technical Standards Manual to analyze the

required detention for the 100 year, 24 hour event. Please see the PondPack Model included in this report for more information.

The proposed development area is approximately 234 acres, and the unrestricted area accounts for 17.99 acres of the disturbed area. The average lot area was calculated to be 1/3 acre with a corresponding CN = 81, 86 for hydrologic soil groups C and D, respectively. The basins were assumed to have a CN = 98 at the normal water elevation. The peak unrestricted release rate is 9.56 cfs, and the net allowable release rate is **37.24 cfs** (the gross allowable of 46.8 cfs minus the unrestricted release rate of 9.56 cfs).

Although the amount of floodplain/floodway impact is minimized, there is impact to the floodplain and floodway of Bull Run Creek as a result of the proposed development. An analysis of these impacts is currently underway and will be submitted under separate cover. It is anticipated that a LOMR will be required to redelineate the floodway in areas where impact is unavoidable.

The proposed system discharges at six (6) locations. The proposed tributary areas and their respective curve numbers can be found on the Proposed Curve Number Exhibit in this report. Storage tables for the existing and proposed basins can be found in the PondPack analysis of this report.

Basin H currently serves 111 acres of residential area north of the proposed development and approximately 11 acres from the east. An additional 62.34 acres from the proposed development is routed to Basin H. It should be noted that the 11 acres from the east has also been routed to Basin H, stored, and released at a controlled rate. The outfall from the basin is below the 100 year BFE and was designed assuming a zero release. The peak release rate based on analyzing the basin as a free outfall is 20.39 cfs. **2.49 cfs** of this outflow is attributed to the proposed project site, and the remainder is attributed to the areas originally tributary to the existing pond.

Basin B serves 52.83 acres of the proposed development and provides 10-100 year compensatory storage for fill in the floodplain. The basin provides adequate storage for onsite detention as well as a surplus of compensatory storage. Basin B also has been sized for zero release due to the release being below the 100 Year BFE. The peak release rate based on analyzing the basin as a free outfall is **0.86 cfs**.

Basin C serves 11.77 acres of the proposed development and provides 0-10 year compensatory storage. The basin allows inflow from Bull Run Creek via an 18" pipe with a tide flex backflow preventer. The water stored is then released via a 4" restrictor back into Bull Run Creek at a peak rate of **0.89 cfs**. Because the pond outlets directly to Bull Run Creek below the 100 year BFE, the proposed pond was sized assuming a zero release rate, and provides this required amount of storage, plus the 0-10 year compensatory storage.

Basin D serves 12.44 acres of the proposed development. The peak release rate from the basin into Bull Run Creek is **1.01 cfs**.

Basin A serves 31.6 acres of the development. The peak release rate from the basin is **3.22 cfs**. It discharges into an existing channel that drains to a proposed 24" flared end section with a capacity of 31.99 cfs.

Basin E releases to the proposed Basin F at a peak rate of 0.20 cfs, and Basin F discharges to Basin G at a peak rate of 2.44 cfs. Basin G has a maximum release rate of **1.51 cfs**. The release from Basin G is governed by the 2.47 cfs capacity of the 10" PVC pipe east of White Oak Avenue with existing tributary flows east of White Oak Avenue combined with unrestricted release flows from the west ROW of White Oak Avenue (0.94 cfs).

The total combined peak discharge from the proposed basins during the 100 year 24 hour event is 11.67 cfs which is significantly lower than the allowable release rate of 37.24 cfs.

All proposed detention facilities have been provided with an emergency overflow weir sized to pass the peak 50 year flow tributary to each pond. From North to South, Detention Basin H will overflow directly into Bull Run Creek. Pond E will overflow into Pond F, which then overflows to Pond G. The overflow of Pond G will be routed onto the proposed roadway and into Pond A. Pond A will overflow to the east across the roadway and into a tributary to Bull Run Creek. Ponds D, B, and C will all overflow directly into Bull Run Creek. The overflow weirs for the proposed basins maintain the existing discharge points. The peak 50 year flow was calculated using PondPack. Please see the Overflow Weir Design Calculations for more information.

## **Storm Sewer**

The majority of the proposed on-site storm sewer systems are designed to convey runoff from storms up to and including the 5-year event per the Town of St. John Standards. Per the St. John ordinance, a minimum time of concentration of 10 minutes is used for inlet times, and runoff coefficients are 0.40 for single family. The grading design includes overland flow routes that ultimately drain to the proposed stormwater detention basins when storms exceed the required storm sewer capacity. The storm sewer along eastern and northern property lines that discharges to Detention Basin H has been designed to convey the 100 year storm from the "East Offsite Area", rather than having the route travel over land for that area. See the storm sewer calculations and General Layout Plan for more information. In other locations where an overland flow route was impossible, the storm sewer was sized to convey the 100 year storm.

## **Stormwater Pollution Prevention Measures**

During construction, silt fence will be installed along the perimeter of proposed grading operations for the project where applicable. The storm water pollution prevention measures are indicated on the Erosion and Sedimentation Control Plans and Details. A complete Storm Water Pollution Prevention Plan (SWPPP) has been completed and

is included with this submittal. Erosion control measures put in place to prevent stormwater pollution include silt fence, erosion control blanket, rip rap, and inlet filter baskets. All of these measures will be completed, inspected, and maintained as detailed in the SWPPP and the Soil Erosion and Sediment Control Plan & Details.

### **Conclusion**

The proposed The Preserve Subdivision improvements provide stormwater management consistent with the requirements of the Town of St. John standards. In addition, best management practices will be provided throughout the entire construction process to ensure that stormwater runoff is improved to the extent possible before being released. Should you have any questions, comment or concerns regarding the content of this report, please do not hesitate to contact Brad Moore.



Brad Moore  
Project Manager

6-A  
9-21-16



# Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

Bill Emerson, Jr.  
County Surveyor

August 19, 2016

Marty Maupin  
Indiana Department of Environmental Management  
100 North Senate Avenue  
P.O. Box 6015  
Indianapolis, Indiana 46206-6015

RE: The Preserve Subdivision and Bull Run Ditch  
St John Township, Lake County, Indiana

Dear Mr. Maupin,

Please find enclosed with this letter a copy of the initial review of The Preserve Subdivision, located in the Town of St John, Indiana, which is currently before the Lake County Drainage Board. Please note that we are still awaiting information from the applicant to complete our review.

Should you have any questions or concerns, please do not hesitate to contact my office.

Sincerely,

Bill Emerson, Jr.  
Lake County Surveyor

Cc: Gerry Scheub, Chairman-Lake County Drainage Board  
Jean Shepherd, St John Township Advisory Committee Representative  
Lake County Drainage Board & Advisory Committee

AUG 19 2016



**INDIANA OFFICE OF ENVIRONMENTAL ADJUDICATION**

Mary Davidsen  
Chief Environmental Law Judge

INDIANA GOVERNMENT CENTER NORTH  
100 NORTH SENATE AVENUE  
SUITE N501  
INDIANAPOLIS, IN 46204-2200  
(317) 233-0850  
(317) 233-9372 FAX

6-A  
9-21-16

STATE OF INDIANA )  
 )  
COUNTY OF MARION )

BEFORE THE INDIANA OFFICE  
OF ENVIRONMENTAL ADJUDICATION

IN THE MATTER OF: )

OBJECTION TO THE ISSUANCE OF SECTION 401 )  
WATER QUALITY CERTIFICATION )  
IDEM NO. 2016-131-45-MTM-A FOR )  
SCHILLING DEVELOPMENT )  
ST. JOHN, LAKE COUNTY, INDIANA )

CAUSE NO. 16-W-J-4915

\_\_\_\_\_  
Casboni Brothers, )  
Petitioner, )  
Schilling Development, )  
Permittee/Respondent, )  
Indiana Department of Environmental Management, )  
Respondent )

**ORDER SCHEDULING PREHEARING CONFERENCE**

This is notice that a prehearing conference has been scheduled for September 7 2016, at 10:30 (a.m./p.m.) E.D.T., in the Office of Environmental Adjudication, Indiana Government Center North, 100 North Senate Avenue, Room N501, Indianapolis, IN 46204.

The Presiding Environmental Law Judge will conduct a prehearing conference on the date stated above. The purpose of the prehearing conference is to:

- (1) Explore settlement possibilities. Indiana Code § 4-21.5-3.5 authorizes the use of mediation in administrative proceedings. The parties are urged to seriously consider the potential benefits of mediation in this proceeding. Please be prepared to discuss the use of mediation during the prehearing conference.
- (2) Set discovery deadlines, including dates to exchange witness and exhibit lists. Witnesses or exhibits discovered after the exchange of lists shall be furnished immediately upon such discovery.
- (3) Set dates for filing dispositive motions.

Flood PLAN  
WILDLIFE HABITAT  
MAINTENANCE

Information concerning hearing schedules and procedures may be obtained by calling the Office of Environmental Adjudication at (317) 233-0850.

**IT IS SO ORDERED** this 19<sup>th</sup> day of August, 2016 in Indianapolis, IN.



Hon. Catherine Gibbs  
Environmental Law Judge

**DISTRIBUTION**

Donald Snemis, Esq.  
Assistant Commissioner  
Indiana Department of Environmental Management  
Indiana Government Center North  
100 North Senate Avenue, Room 1307  
Indianapolis, IN 46204

Casboni Brothers  
PO Box 88  
Schererville, IN 46375

Jack Slager  
Schilling Development  
8900 Wicker Avenue  
St. John, IN 46373

Casboni Bros.  
P.O. Box 88  
Scherverville, In. 46375

C-A  
9-21-16

STATE OF INDIANA )  
 )  
COUNTY OF MARION )

BEFORE THE INDIANA OFFICE  
OF ENVIRONMENTAL ADJUDICATION

IN THE MATTER OF: )

OBJECTION TO THE ISSUANCE OF SECTION 401 )  
WATER QUALITY CERTIFICATION )  
IDEM NO. 2016-131-45-MTM-A FOR )  
SCHILLING DEVELOPMENT )  
ST. JOHN, LAKE COUNTY, INDIANA )

CAUSE NO. 16-W-J-4915

\_\_\_\_\_  
Casboni Brothers, )  
Petitioner, )  
Schilling Development, )  
Permittee/Respondent, )  
Indiana Department of Environmental Management, )  
Respondent )

ORDER SCHEDULING PREHEARING CONFERENCE

September 2, 2016

Mary Davidson, Chief Environmental Law Judge

Be advised that the Casboni Bros., are withdrawing their objection to the issuance of Section 401 Water Quality Certification IDEM NO. 2016-131-45-MTM-A For Schilling Development, St. John, Lake County, Indiana. We have reached an agreement in this matter on September 1, 2016. Please call 219-808-5028 if you have any questions.

Sincerely,  
Vincent Casboni



Anthony Casboni



CC: See attached page



**Distribution**

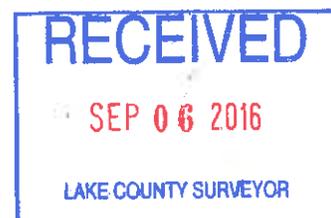
**Donald Snemis, Esq**  
**Asstiatant Commissioner**  
**Inidana Department of Enviornmental Management**  
**Indiana Government Center North**  
**100 North Senate Avenue, Room 1307**  
**Indianapolis, In. 46204**

**Jack Slager**  
**Schilling Development**  
**8900 Wicker Avenue**  
**St. John, In. 46373**

**Honroable Cathering Gibbs**  
**100 N. Senate Avenue**  
**Suite N501**  
**Inidanapolis, In. 46204-2200**

**Bill Emerson, Jr.**  
**Lake County Surveyor**  
**2293 North Main Street**  
**Crown Point, In. 46307**

**Gerry Scheub, Chairman**  
**Lake County Drainage Board**  
**2293 North Main Street**  
**Crown Point, In. 46307**





# Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

6-A  
9-21-16

Bill Emerson, Jr.  
County Surveyor



6-B

## NOTICE OF ACTION Application No. 300-7-16-I-II-III

July 20, 2016

Mr. Jack Slager  
Preserve, S.J. LLC  
8900 Wicker Avenue  
St. John, IN 46373

DEAR PETITIONER:

THIS NOTICE IS TO INFORM YOU THAT YOUR PETITION OR REQUEST FOR

**Bull Run Ditch, St. John Twp.**  
**Applicant: Preserve, S.J., LLC**  
Application to "Perform Work", "Connect/Discharge" and "Place Temporary/Permanent Structure" within regulated drain for the purpose of a subdivision development.

WAS CONSIDERED BY THE DRAINAGE BOARD AT A MEETING ON THE 20<sup>th</sup> DAY OF July, 2016 WITH THE FOLLOWING ACTION:

- APPROVED PETITION OR REQUEST.
- APPROVED PETITION OR REQUEST SUBJECT TO CONDITIONS LISTED ON ATTACHMENT #1.
- CONTINUED PETITION OR REQUEST TO **AUGUST 17, 2016** MEETING.
- DENIED PETITION OR REQUEST.
- REMOVED FROM THE AGENDA. IF YOU WOULD LIKE TO REAPPLY TO THE DRAINAGE BOARD A NEW APPLICATION WILL NEED TO BE SUBMITTED, 14 DAYS PRIOR TO THAT MONTH'S MEETING.
- PETITION NOT RELEASED DUE TO NON-PAYMENT OF APPLICATION FEE(S).

IF YOU HAVE ANY FURTHER QUESTIONS, PLEASE CONTACT BILL EMERSON, JR. OR DAN GOSSMAN AT (219) 755-3745.

MARY ELLEN KUPSIK  
Lake County Drainage Board Secretary

Handout 6-B  
8-17-16



AMERICAN  
**STRUCTUREPOINT**  
INC.

7260 Shadeland Station, Indianapolis, Indiana 46256  
TEL 317.547.5580 FAX 317.543.0270

www.structurepoint.com

**M E M O R A N D U M**

**DATE:** August 16, 2016

**TO:** Bill Emerson, Jr., Lake County Surveyor

**FROM:** Brian Payne, Staff Engineer

**RE:** The Preserve Subdivision

**CC:** Dan Gossman, Jordan McCormack, Jeremy Schmitt; Trevor Murphy

As requested by the Lake County Surveyor's Office, American Structurepoint, Inc. has reviewed The Preserve, S.J. LLC's application to perform the following tasks within a regulated drain:

- Work within a regulated drain
- Connect/discharge into the drain/easement
- Place temporary/permanent structure in the drain/easement

The application was submitted by Jack Slager of The Preserve, S.J. LLC, for the construction of the The Preserve Subdivision. The project site to be developed is approximately 234 acres, and is adjacent to Bull Run Creek. The proposed site will be developed with 432 single family residential lots, public roadways, watermain, sanitary sewer extensions, and on-site detention basins with associated storm sewers.

The proposed project is described as follows:

**Owner/Developer:** The Preserve, S.J. LLC

**Project Name:** The Preserve Subdivision

**Project Location:** The Preserve Subdivision is located at the northwest corner of 101<sup>st</sup> Avenue and White Oak Avenue in the Town of St. John, Lake County, Indiana. The project is adjacent to approximately 6,000 linear feet of Bull Run Creek.

**Description:**

To complete the project as designed, the Applicant needs permission to construct the following within the 75-foot drainage easement :

- Install approximately 700 feet of 10 inch sanitary sewer
- Install 3 sanitary manholes
- Install 1 storm inlet and 1 storm catch basin
- Install approximately 64 feet of 12 inch storm sewer
- Construct 6 discharge points
- Construct 3 flared end section outfalls into Bull Run Creek

**Submittal Information Received:**

- Final Stormwater Report dated July 19, 2016 and delivered to the Lake County Surveyor's Office.
- Drainage Board Application
- Construction Plans

**Review Comments:**

American Structurepoint, Inc. has completed an initial review of the submittal to verify compliance with the requirements of the Lake County Ordinance No. 1365C. This comment letter is a review for general conformance with standards. The Project Engineer is still responsible for his own design and neither the County nor the County's Engineer is responsible for the completeness of the design. We submit the following comments:

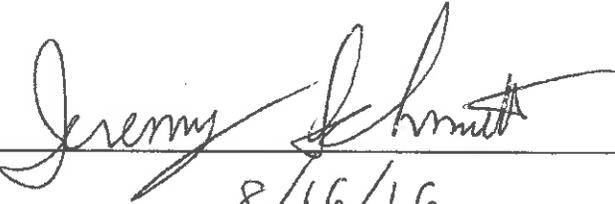
1. Provide calculations showing the amount of compensatory storage that will be required for this project (1.5 times the volume of fill being added within the floodplain) as stated in the "No Net Loss Floodplain Storage Policy", Chapter 3, Section 2.D. Compare this to the amount of compensatory storage currently proposed.
2. Provide a copy to the Drainage Board of any Letter of Map Revision submitted to FEMA.
3. While completing the work, the applicant shall ensure that no construction debris or materials are placed within the ditch channel.
4. Excavated soil and other construction materials shall be stockpiled outside of the ditch channel and outside the top of banks of the ditch. Work within the drainage easement should be minimized to just the tasks necessary for completion of this project.
5. Outlets into Bull Run shall be constructed in accordance with INDOT standards for erosion protection and shall be permitted with the Indiana Department of Natural Resources, as appropriate.

6. The contractor is responsible for successfully implementing the Soil Erosion and Sedimentation Control Plan included in the Project Plans.
7. All future phases of the project shall be submitted to Drainage Board for review before they are constructed.
8. The applicant's design meets the Lake County Stormwater Ordinance requirements that general release rates do not exceed 0.2 cfs per acre of development. The applicant is only using 9.58 cfs of the total 34.56 cfs release rate allowed for this project.

**Recommendation:**

Request the applicant provide a response to the compensatory storage comment above prior to being considered for approval.

Reviewed by: \_\_\_\_\_

Handwritten signature of Jeremy Schmitt in black ink, written over a horizontal line.

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

8/16/16



# Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

Bill Emerson, Jr.  
County Surveyor



6-C

## NOTICE OF ACTION Application No. 302-9-16-1

September 21, 2016

Brian Meier, Mainline Projects US  
Enbridge Energy, Limited Partnership  
1409 Hammond Avenue  
Superior, WI 54880

DEAR PETITIONER:

THIS NOTICE IS TO INFORM YOU THAT YOUR PETITION OR REQUEST FOR

**Hart Ditch/Plum Creek, St. John Township**  
**Applicant: Enbridge energy, Limited Partnership**  
Application to Perform Work within a Regulated Drain/Easement for the purpose of routine pipeline maintenance.

WAS CONSIDERED BY THE DRAINAGE BOARD AT A MEETING ON THE 21st DAY OF SEPTEMBER, 2016 WITH THE FOLLOWING ACTION:

- APPROVED PETITION OR REQUEST.
- APPROVED PETITION OR REQUEST SUBJECT TO CONDITIONS LISTED ON ATTACHMENT #1.
- CONTINUED PETITION OR REQUEST TO **OCTOBER 19, 2016** MEETING.
- DENIED PETITION OR REQUEST.
- REMOVED FROM THE AGENDA. IF YOU WOULD LIKE TO REAPPLY TO THE DRAINAGE BOARD A NEW APPLICATION WILL NEED TO BE SUBMITTED, 14 DAYS PRIOR TO THAT MONTH'S MEETING.
- PETITION NOT RELEASED DUE TO NON-PAYMENT OF APPLICATION FEE(S).

IF YOU HAVE ANY FURTHER QUESTIONS, PLEASE CONTACT BILL EMERSON, JR. OR DAN GOSSMAN AT (219) 755-3745.

MARY ELLEN KUPSIK  
Lake County Drainage Board Secretary



September 20, 2016

Enbridge Energy, Limited Partnership  
119 North 25<sup>th</sup> Street East  
Superior, WI 54880

Attention: Ms. Keely D. Pearson  
Senior Environmental Specialist

Subject: **Enbridge Energy Routine Pipeline Maintenance Work  
(Line 6A, Milepost 461.7608)**  
**Watercourse:** Hart Ditch  
**Applicant:** Enbridge Energy, Limited Partnership  
(CBBEL Project No. 93-169)

Dear Ms. Pearson:

Christopher B. Burke Engineering, LLC (CBBEL) has performed a review of the material submitted by Enbridge Energy, Limited Partnership (Enbridge) for the permit application for routine maintenance along Enbridge's existing Line 6A pipeline at Milepost 461.7608. The purpose of the work is to inspect the existing pipeline and make any necessary repairs. Excavation will occur within the western easement of Hart Ditch, without any disturbance to the waterway.

CBBEL received the following items for review:

- Letter, prepared by Enbridge, dated September 14, 2016.
- Completed and signed Lake County Drainage Board Permit Application
- Copy of Project Description for Maintenance Work in Lake County by Enbridge Energy for Line 6A, Milepost 461.7608
- Figures and Site Plan for Line 6A, Milepost 461.7608

CBBEL staff has reviewed the supplied information and provides the following comments:

1. The plan set should be signed and sealed by an Indiana Registered Professional Engineer.
2. The stockpiling of material is proposed within the floodway of Hart Ditch. Therefore, the applicant should contact the Indiana Department of Natural Resources – Division of Water (IDNR-DOW) regarding a Floodway Construction Permit is required. The stockpiling of excavated material is not a permissible activity.

If you have any questions, please do not hesitate to call (847) 823-0500.

Sincerely,



Thomas T. Burke, Jr., PhD, PE  
Vice President  
Head Water Resources Department

CC: Bill Emerson, Jr. – Lake County Surveyor  
Dan Gossman – LCSO  
Mary Ellen Kupsik – LCSO  
James Anklam – Enbridge Energy

TTB\sl  
N:\INDIANA\93169\2016\Reviews\L\_Enbridge Routine Pipeline Maintenance Work\_092016.docx



- Maintenance Location
- Access Route
- Erosion Control Barrier
- Dewatering Area
- ▨ Excavation Extent
- Soil Stockpile
- Temporary Workspace/ Area to be Cleared
- Drainage Easement
- FEMA 100-Year Flood Zones
- AE
- AE; FLOODWAY



Feet

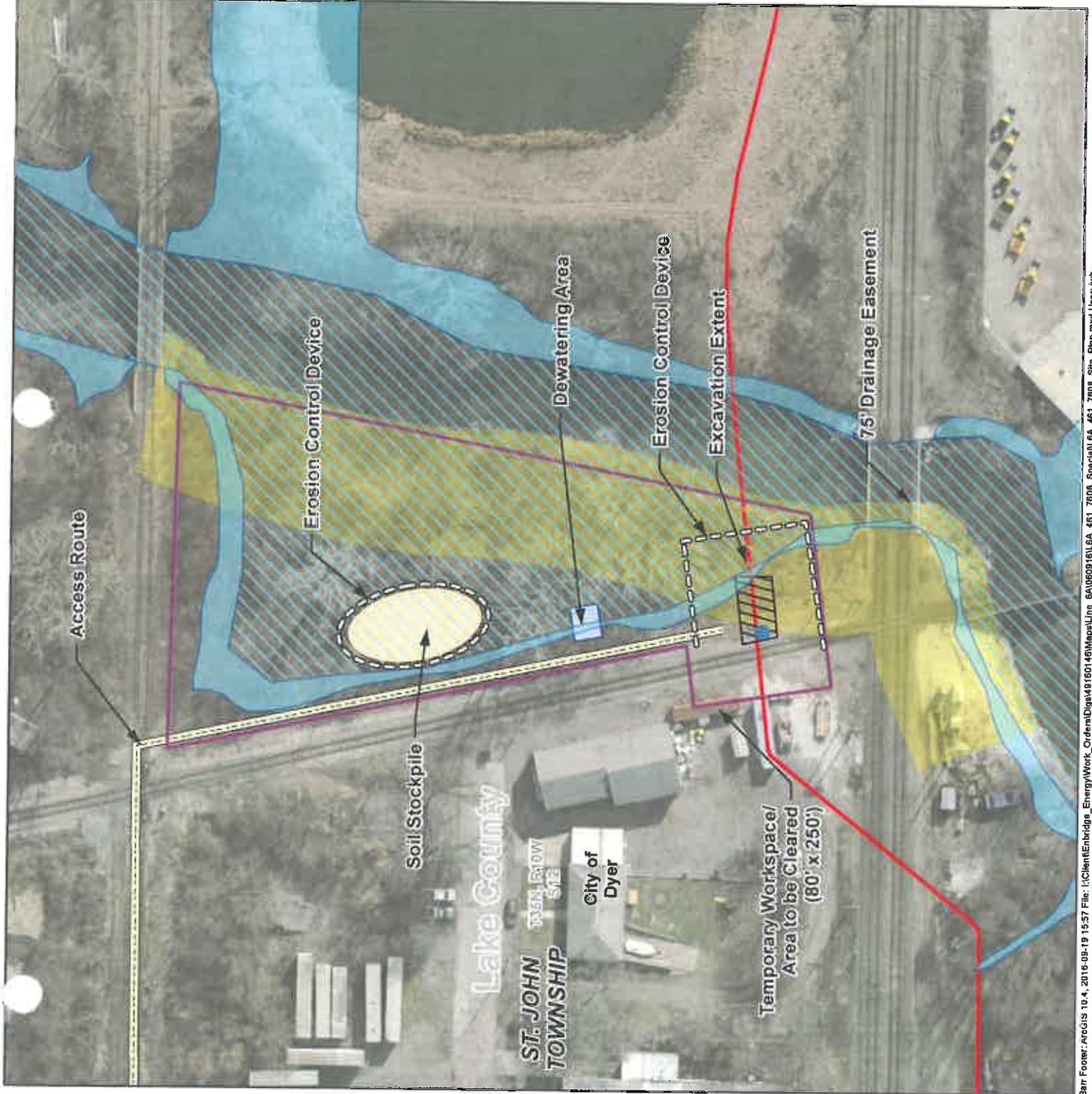
1 Inch = 80 Feet

Imagery: Lake County, 2013

**SITE PLAN**

Line 6A

Milepost 461.7608



Co-B  
9-21-16



James Anklam  
Environmental Specialist

tel 715 398 4761  
fax 715 394 1500  
james.anklam@enbridge.com

Enbridge Energy, Limited  
Partnership  
119 North 25<sup>th</sup> Street East  
Superior, WI 54880

September 14, 2016

Lake County Drainage Board  
Lake County Government Center  
Building 'A', 3<sup>rd</sup> Floor  
2293 North Main Street  
Crown Point, IN 46307



Re: Application to Work within Plum Creek Easement  
Enbridge Energy, Limited Partnership, Routine Pipeline Maintenance Work  
Line 6A, Milepost 461.7608  
Lake County, Indiana

To Whom It May Concern:

Enbridge Energy, Limited Partnership (Enbridge) is submitting the enclosed permit application for routine maintenance along Enbridge's existing Line 6A pipeline at Milepost 461.7608. The maintenance work involves excavation around one section of pipeline identified through Enbridge's internal pipeline inspection program.

The purpose of the work is to inspect the existing pipeline and make any repairs, if necessary. The excavation will be within the western easement of Plum Creek; no work will be within the waterway. No buildings or structures will be constructed and the site will be returned to pre-existing conditions after the pipeline is inspected. Work is scheduled to begin in October 2016.

Enclosed please find a project description and supporting figures. If you have questions about the information presented in this permit application, please contact me at (715) 398-4761.

Sincerely,

James Anklam  
Environmental Specialist  
Enbridge Energy, Limited Partnership

Enclosures: Supplemental Information and Site Figures

Cc: Brian Meier, Mainline Projects US, Enbridge Energy  
Sabrin Zayed, Construction Supervisor, Enbridge Energy  
Alina Heydt, Barr Engineering Company  
Project Files

**APPLICATION NO. \_\_\_\_\_**

**APPLICATION FOR PERMISSION TO PERFORM THE FOLLOWING TASK(S) WITHIN A  
REGULATED DRAIN**

*[PLEASE CHECK THE APPROPRIATE BOX]*

- I. WORK WITHIN A REGULATED DRAIN** Work within drain easement only;  
no work in the waterway.
- II. CONNECT/DISCHARGE INTO THE DRAIN/EASEMENT**
- III. PLACE TEMPORARY/PERMANENT STRUCTURE IN THE  
DRAIN/EASEMENT**
- IV. REDUCE EASEMENT FROM SEVENTY-FIVE (75) FEET**

TO THE LAKE COUNTY DRAINAGE BOARD, LAKE COUNTY, INDIANA;

(Name) Enbridge Energy, Limited Partnership

HEREINAFTER CALLED APPLICANT, HEREBY MAKES APPLICATION TO THE LAKE COUNTY DRAINAGE BOARD TO PERFORM THE ABOVE DESCRIBED ACTIVITY WITHIN A REGULATED DRAIN AND/OR THE EASEMENT FOR A REGULATED DRAIN WHICH IS PART OF THE DRAINAGE SYSTEM FOR LAKE COUNTY, INDIANA.

**THE LOCATION IS AS FOLLOWS:**

NAME OF WATERWAY: Plum Creek

SECTION(s): 12 TOWNSHIP: 35 N RANGE: 10 W

ADDRESS OR DESCRIPTION OF LOCATION: Enbridge Energy's Line 6A, Milepost 461.7608 in  
the City of Dyer, Lake County. Refer to the attached Site Location maps.

PIN # 45-10-12-503-023.000-034

**THE REQUEST IS TO CONSIST OF THE FOLLOWING ACTIVITIES:**

One excavation approximately 15 to 20 feet wide, 20 to 40 feet long, and 15 feet deep is required  
for inspection and potential repair. The work will be located in the west drain easement of Plum  
Creek; no work will be in the waterbody. Refer to the attached Project Description.

**THE PURPOSE OF THE REQUEST IS TO:**

Obtain approval from the Lake County Drainage Board for temporary disturbance within the  
west drain easement of Plum Creek to conduct routine pipeline maintenance.

1. THE APPLICANT HEREBY AGREES TO RESTORE THE LAND, DRAINAGE DITCHES AND ALL OTHER SURFACES AND/OR STRUCTURES WITHIN THE DITCH AND REGULATED DRAIN EASEMENT TO A CONDITION AS GOOD OR BETTER THAN THEY WERE PRIOR TO THE COMMENCEMENT OF THE WORK.
2. THE APPLICANT SHALL AND WILL INDEMNIFY AND HOLD HARMLESS ANY AND ALL COUNTY ENTITIES, INCLUDING BUT NOT LIMITED TO THE COUNTY OF LAKE, BOARD OF COMMISSIONERS OF THE COUNTY OF LAKE, THE LAKE COUNTY DRAINAGE BOARD, LAKE COUNTY SURVEYOR, ITS ELECTED OFFICIALS, ITS APPOINTED OFFICIALS, ITS OFFICERS, ITS EMPLOYEES, ITS DEPARTMENTS, ITS BOARDS AND/OR AGENTS FROM AND AGAINST ANY AND ALL DAMAGES, INJURIES, LOSSES, DEMANDS, OR COSTS PROXIMATELY CAUSED BY THE FAULT, CULPABILITY OR NEGLIGENCE OF THE APPLICANT IN THE PERFORMANCE OF THE PERMITTED WORK OVER AND ACROSS THE DRAINS OR DRAINAGE RIGHTS-OF-WAY UNDER THE JURISDICTION OF THE LAKE COUNTY DRAINAGE BOARD.
3. **IMPORTANT CLAUSE IN THIS PERMIT APPLICATION:** THE APPLICANT FURTHER AGREES TO NOTIFY THE LAKE COUNTY DRAINAGE BOARD OR THE LAKE COUNTY SURVEYOR IN WRITING AT LEAST FIVE (5) DAYS IN ADVANCE OF THE COMMENCEMENT OF THE WORK DESCRIBED IN THIS APPLICATION, AND WILL ALSO GIVE NOTICE TO THE LAKE COUNTY DRAINAGE BOARD OR THE LAKE COUNTY SURVEYOR THE DAY PRECEDING THE COMPLETION OF THE WORK. FAILURE TO PROVIDE SUCH NOTICE MAY CAUSE REVOCATION OF THE PERMIT(S) AND APPLICANT MAY INCUR PENALTIES. PLEASE SEND NOTICES TO: **LAKE COUNTY DRAINAGE BOARD, ATTN: LAKE COUNTY DRAINAGE BOARD SECRETARY, 2293 N. MAIN STREET, CROWN POINT, IN 46307**
- 4(a). THE APPLICANT AGREES TO AVOID CAUSING DAMAGE TO THE ESTABLISHED REGULATED DRAIN OR TO LANDOWNERS AFFECTED BY THE DRAIN, PURSUANT TO I.C.36-9-27-72(D).
- 4(b). FOR APPLICATIONS REGARDING THE PLACEMENT OF TEMPORARY STRUCTURES IN THE DRAIN'S EASEMENT (BOX III, PAGE 1), SUCH AS FENCES, TREES, GARDENS, SHEDS, ETC., THE APPLICANT UNDERSTANDS THAT, IF THE DRAINAGE BOARD GRANTS PERMISSION TO PLACE SAID TEMPORARY STRUCTURES WITHIN THE DRAINAGE EASEMENT, SAID PLACEMENT IS AT THE OWNER'S RISK. SHOULD THE COUNTY SURVEYOR/DRAINAGE BOARD, THEIR AGENTS, REPRESENTATIVES, CONTRACTORS OR OTHERS AT THE DIRECTION OF SAID COUNTY SURVEYOR/DRAINAGE BOARD, NEED ACCESS TO THE DRAIN OR EASEMENT AND THE STRUCTURE REQUIRES REMOVAL, THE OWNER SHALL REMOVE SAME AT THE OWNER'S EXPENSE. SHOULD THE OWNER FAIL TO REMOVE SAME IN A TIMELY FASHION, THEN THE COUNTY SURVEYOR/DRAINAGE BOARD SHALL CAUSE SAME TO BE REMOVED AND THE OWNER SHALL HAVE NO RECOURSE. AFTER COMPLETION OF THE COUNTY SURVEYOR'S/DRAINAGE BOARD'S ACTIVITY, THE OWNER SHALL HAVE THE RIGHT TO REINSTALL THE TEMPORARY STRUCTURE IN COMPLIANCE WITH THE COUNTY SURVEYOR'S/DRAINAGE BOARD'S REQUIREMENTS. THE COUNTY SURVEYOR/DRAINAGE BOARD MAY REQUIRE PAYMENT FROM THE OWNER FOR THE COST OF THE REMOVAL OR REPLACEMENT FOR ANY OF SAID ITEMS, PURSUANT TO STATUTE.
5. THE APPLICANT SHALL HAVE WORKMAN'S COMPENSATION INSURANCE AS REQUIRED BY STATE LAW.
6. THE APPLICANT SHALL PAY THE LAKE COUNTY SURVEYOR'S OFFICE AN APPLICATION FEE(S) PRIOR TO THE APPLICATION BEING CONSIDERED AT THE NEXT MONTHLY LAKE COUNTY DRAINAGE BOARD MEETING.
7. THE APPLICANT SHALL CARRY PUBLIC LIABILITY INSURANCE MEETING THE MAXIMUM DOLLAR LIMITS AS SPECIFIED IN I.C. 34-13-3-1 ET SEQ. OR ANY SUBSEQUENTLY ENACTED APPLICABLE STATUTES, AND SHALL LIST THE COUNTY OF LAKE, THE BOARD OF COMMISSIONERS OF THE COUNTY OF LAKE, THE LAKE COUNTY DRAINAGE BOARD, LAKE COUNTY SURVEYOR, ITS ELECTED OFFICIALS, ITS APPOINTED OFFICIALS, ITS OFFICERS, ITS EMPLOYEES, ITS DEPARTMENTS, ITS BOARDS AND AGENTS AS OTHER INSURED.
8. **THIS PERMIT DOES NOT OBTAIN THE NEED TO OBTAIN ANY OTHER FEDERAL, STATE AND/OR LOCAL AUTHORIZATION, IF REQUIRED.**

9 BY SUBMITTING THIS APPLICATION, THE APPLICANT HEREBY STATES THE FOLLOWING:

- A. THE PROPOSED WORK MEETS ALL HYDRAULIC REQUIREMENTS THAT WILL PERMIT THE DRAIN TO FUNCTION PROPERLY. (I.C. 36-9-37-72 (C)).
- B. THE REGULATED DRAIN IS ADEQUATE TO HANDLE THE ADDITIONAL FLOW OF WATER, IF ANY
- C. NO HARMFUL POLLUTION IS LIKELY TO RESULT. (I.C. 36-9-27-17(C)).

10. ENGINEERING PLANS, WHICH SUBSTANTIATE THE ABOVE STATEMENTS, MUST ACCOMPANY THIS APPLICATION. THESE PLANS MUST INCLUDE SUFFICIENT DETAIL TO ALLOW VERIFICATION OF THE ABOVE STATEMENTS. (THESE PLANS SHOULD GENERALLY INCLUDE DIMENSIONS, ELEVATIONS, CALCULATIONS, DESCRIPTIONS OR THE QUANTITIES AND TYPES OF MATERIAL TO BE USED, DISCHARGE CALCULATIONS AND OTHER RELEVANT INFORMATION.)

11. UPON COMPLETION OF THE WORK, "AS BUILT PLANS", SIGNED AND SEALED BY AN INDIANA REGISTERED PROFESSIONAL ENGINEER, SHALL BE FORWARDED TO THE LAKE COUNTY DRAINAGE BOARD WITHIN 30 DAYS.

12. THE DRAINAGE BOARD RESERVES THE RIGHT TO WAIVE ANY OF THE REQUIREMENTS STATED HEREON.

SUBMITTED: Brian Meier, Enbridge Energy DATE: 9/14/16  
(PRINT OR TYPE NAME)

  
(SIGNATURE)

SUBMITTED FOR: Enbridge Energy, Limited Partnership

ADDRESS: 1409 Hammond Avenue  
Superior, WI 54880

PHONE#: 715-718-5318

(THIS SECTION FOR DRAINAGE BOARD USE ONLY)

LAKE COUNTY DRAINAGE BOARD

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DATE: \_\_\_\_\_ APPROVED: \_\_\_\_\_ DENIED: \_\_\_\_\_

SHOULD ANY APPLICATIONS BE SUBMITTED BY AN AGENT, CONSULTANT, ENGINEER, REPRESENTATIVE OR OTHERS PURPORTING TO ACT AS THE OWNER, THEN A POWER OF ATTORNEY SHALL BE DULY EXECUTED AND ATTACHED TO THESE APPLICATIONS. [SEE ATTACHMENT I]

**APPROVAL SHALL BE VALID FOR A PERIOD OF TWO YEARS FROM THE DATE OF APPROVAL. SHOULD THE WORK AND ALL RELATED ACTIVITIES NOT BE COMPLETED BY THAT TIME, PETITIONER IS REQUIRED TO REAPPLY. SHOULD THE SCOPE OF WORK, PLANS AND SPECIFICATIONS, OR ACTIVITIES LISTED HEREIN BE MODIFIED, PETITIONER MUST NOTIFY THE LAKE COUNTY SURVEYOR AND THE DRAINAGE BOARD OF THESE MODIFICATIONS FOR REVIEW AND/OR APPROVAL/DENIAL BY THE COUNTY SURVEYOR/DRAINAGE BOARD.**

**Project Description  
Maintenance Work in Lake County  
Enbridge Energy, Limited Partnership  
Line 6A, Milepost 461.7608**

General Project Description

Pipeline maintenance work is planned by Enbridge Energy, Limited Partnership (Enbridge) on Line 6A in the City of Dyer, Lake County. Enbridge plans to conduct this maintenance work in the fall of 2016. The purpose of this planned work is to excavate, inspect, and if necessary, repair one section of pipeline. The maintenance location was identified through Enbridge's pipeline inspection program and is shown on the attached Site Location Figures.

Proposed Temporary Impacts

All excavation will occur within Enbridge's existing right-of-way (ROW). The area around the pipeline will be excavated, then the pipeline will be visually and physically inspected, and repaired as needed. In addition, the scope at this site includes casing remediation work, which involves recreating an end seal on the east end of the casing and injecting gel inhibitor into the pipeline casing. The gel inhibitor is used to displace water and prevent the development of any further corrosion within the casing. To complete this work, the excavation size will be approximately 15 to 20 feet wide, 20 to 40 feet long, and approximately 15 feet deep and will be located in the western easement of Plum Creek. No work will occur within the bed or banks of the drain. Refer to the attached Figures for additional information.

In order to complete the work, tree clearing and brushing will be required within the drainage easement. A triangular shaped area of approximately 190 feet at the bottom, with sides of approximately 380 feet will need to be cleared. This area is outlined in the attached figures as the "temporary work space / area to be cleared."

Equipment used will include a backhoe or similar excavator, and trucks to transport personnel, equipment and soil. Approximately 12 inches of topsoil will be stripped and stockpiled separately from subsoil to preserve the native seed stock, as practical.

Construction Sequence

The duration of activities related to the maintenance work is anticipated to take approximately 10 to 14 days to complete and is scheduled to begin upon receipt the permit. The typical sequence of work is:

- installation of Best Management Practices (BMPs);
- stripping and/or clearing of the excavation area, as necessary;
- excavation of the pipeline anomaly;
- evaluation and repair of the pipeline, as necessary (repair typically involves welding a metal sleeve around the existing pipeline and re-coating the pipeline);
- casing remediation (recreating the end seal and injecting gel into the pipeline casing);
- backfill in the same stratification in which the soil was removed (i.e. topsoil on top of the subsoil) and grade restoration of the excavation with the excavated spoil material; and
- permanent restoration.

## Soil Erosion and Sediment Control Measures

Enbridge will limit the amount of ground disturbance and maintain the greatest amount of vegetative cover possible to minimize the potential for erosion. During construction, proper sediment and erosion control techniques will be observed to prevent sediment from leaving the site. BMPs will be installed as needed prior to soil disturbance and in accordance with Enbridge's Environmental Mitigation Plan (EMP). BMPs will be maintained by Enbridge pipeline maintenance personnel and repairs will be completed within 24 hours of discovery, as needed. Figures showing typical installation of erosion control structures are attached.

BMPs may include silt fence, timber mats, erosion control blankets, trenched-in biologs, or others. Per Enbridge's EMP, temporary BMPs will be installed at the base of sloped approaches to streams, wetlands, and roads. Temporary BMPs will also be installed at the edge of the right-of-way, as needed, and/or in other areas to slow water leaving the site and prevent siltation of waterbodies and wetlands downslope of the right-of-way. Temporary BMPs will be placed across the entire construction right-of-way at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from tile line inlets, drainage ways, wetlands, and/or waterbodies until the area is revegetated and there is no potential scouring or sediment transport to surface waters. Site conditions will determine the final selection and placement of BMPs.

The site will be accessed Sheffield Avenue travelling east along an abandoned railroad line, then turning south and travelling approximately 375 feet along a railroad to Enbridge's ROW and the maintenance location (refer to the attached Access Route Figure). If needed, travel lanes and construction pads will be constructed using timber mats to minimize soil disturbance where within wetlands. Vehicle tracking of soil from the site will be minimized by installation and implementation of BMPs such as timber mat access pads or stone pads, and reducing equipment/vehicle access where practicable. Streets will be inspected daily. If BMPs do not adequately prevent sediment from being tracked onto the road, street sweeping or other equivalent means of collecting sediment will be used.

Dewatering inside the excavation may be required. All discharge will be directed to a filter bag or a dewatering structure (see attached typical figures) located in an upland infiltration location, if possible. No dewatered discharge or resultant runoff will be discharged into the nearby waterways.

## Restoration

Upon completion of the work, the excavation will be backfilled to preconstruction conditions, the sites will be seeded and upland areas will be mulched. Restoration activities may include maintaining BMPs (e.g. silt fence, mulching, and/or erosion control blankets) and/or temporary seeding until the site has been restored. Permanent revegetation will involve preparing the seedbed and seeding disturbed areas. The ROW will be seeded as soon as possible after backfilling. Specific seed mixes, application rates, and seeding dates will take into account recommendations of appropriate state and federal agencies and landowner requests, as appropriate. An Environmental Inspector will visit the site following restoration activities and confirm the site has been stabilized. If necessary, Enbridge may return to the site to complete follow-up restoration work until final stabilization has been reached and the work area returned to pre-construction conditions. Erosion and sediment control BMPs will be removed from the site after revegetation has occurred.

### Notifications

Landowners will be notified of the maintenance work, as needed. Enbridge also works closely with the appropriate highway departments if work is within a roadway.

Line 6A, Milepost 461.7608

Figures and Site Plan





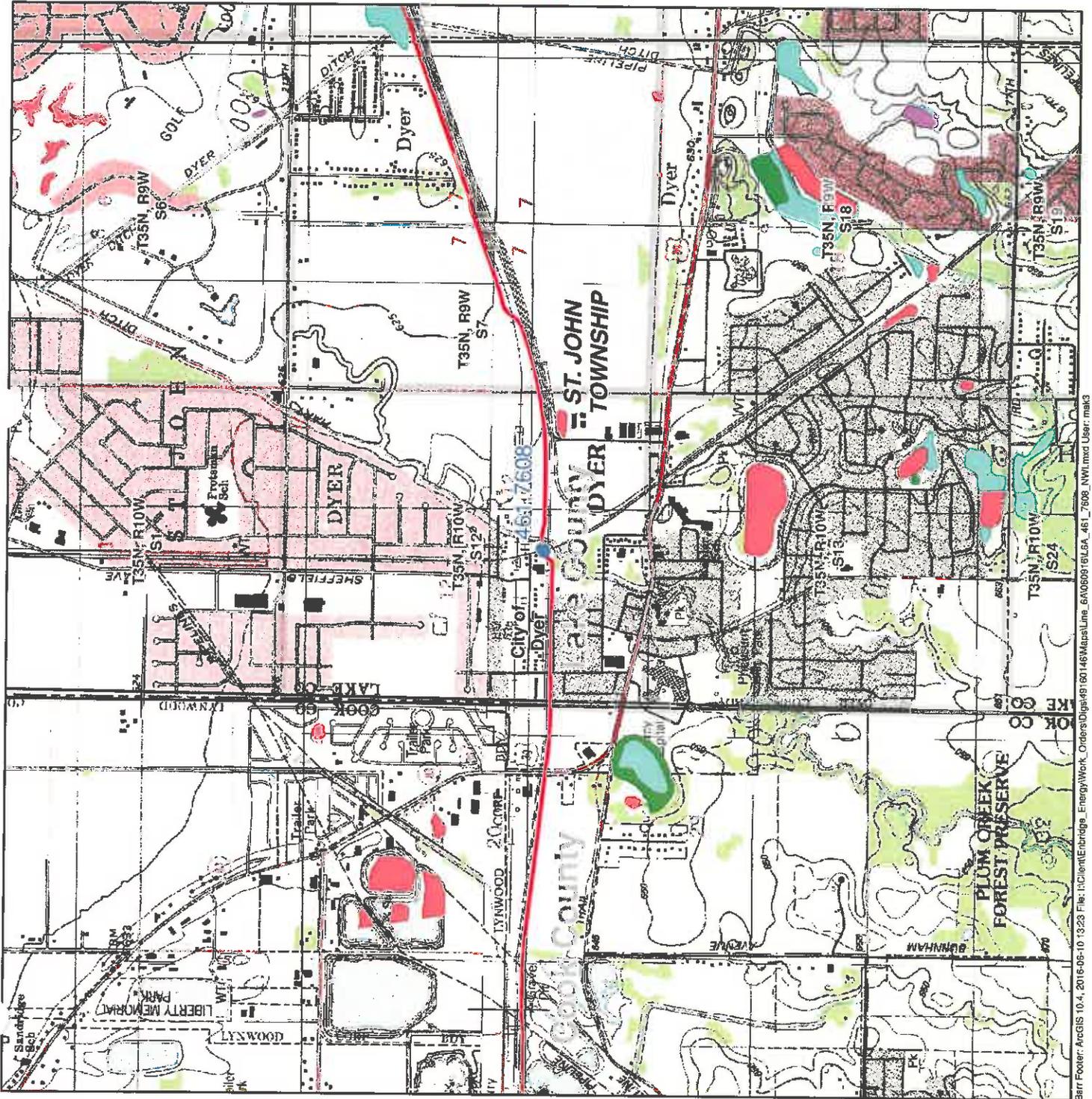
- Maintenance Location
- National Wetlands Inventory**
- Aquatic Bed
- Emergent
- Forested
- Scrub - Shrub
- Unconsolidated Bottom
- Unconsolidated Shoreline



Feet

1 Inch = 2,000 Feet

**EXCAVATION SITE LOCATION**  
Line 6A  
Milepost 461.7608





- Maintenance Location
- Access Route
- Temporary Workspace/ Area to be Cleared



Feet

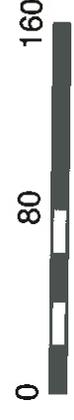
1 Inch = 150 Feet  
 Imagery: Microsoft; 2012

**ACCESS ROUTE**  
 Line 6A  
 Milepost 461.7608





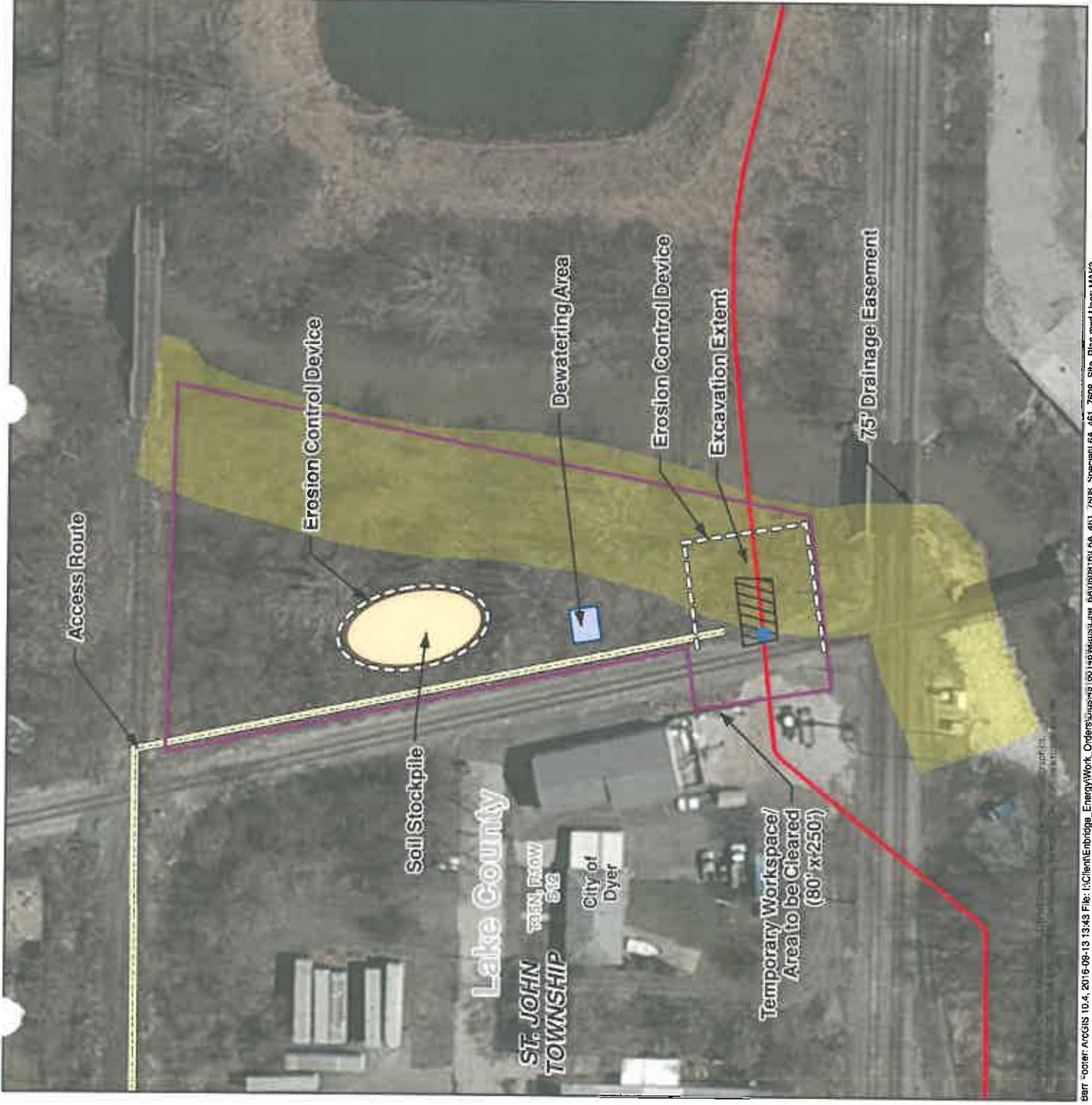
- Maintenance Location
- Access Route
- Erosion Control Barrier
- Dewatering Area
- ▨ Excavation Extent
- Soil Stockpile
- Temporary Workspace/ Area to be Cleared
- Drainage Easement



Feet

1 Inch = 80 Feet  
Imagery: Microsoft, 2012

**SITE PLAN**  
Line 6A  
Milepost 461.7608



## Typical Figures

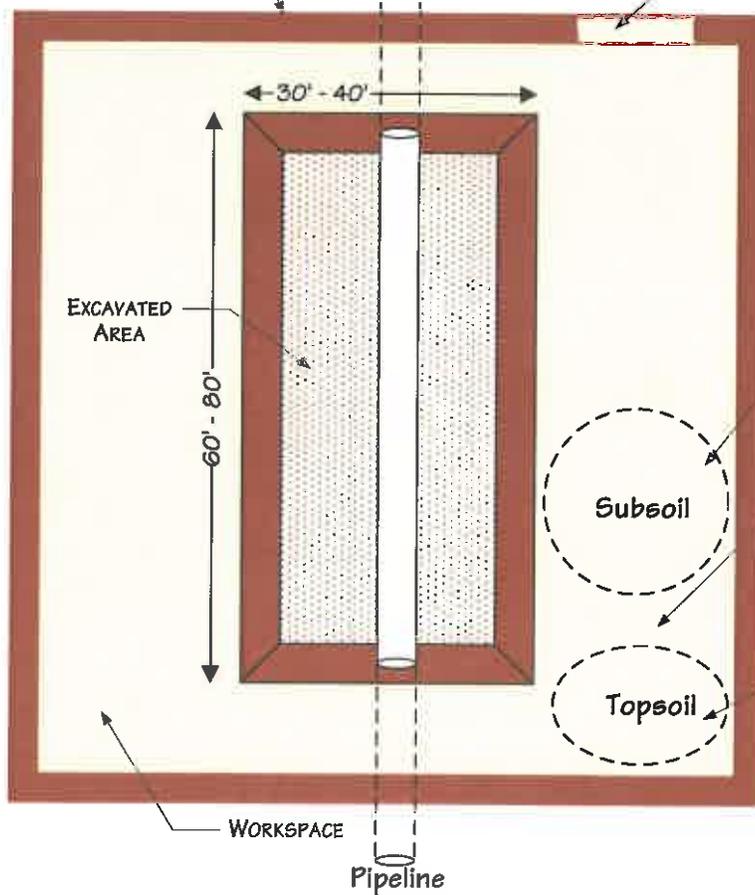


PLACE EROSION CONTROL DEVICES, AS NECESSARY

EROSION CONTROL DEVICES WILL BE PLACED AROUND THE DISTURBED WORK AREA, AS NECESSARY

Pipeline

EROSION CONTROL DEVICES WILL BE PLACED ACROSS OPENING AT END OF THE DAY



EXCAVATED SUBSOIL WILL BE STOCKPILED NEAR THE EXCAVATION WITHIN ECD'S, AS NECESSARY

MINIMUM ONE FOOT SEPARATION MUST BE MAINTAINED BETWEEN TOPSOIL AND SUBSOIL OR A PHYSICAL BARRIER SHOULD BE USED.

STOCKPILE TOPSOIL SEPARATELY FROM SUBSOIL

For environmental review purposes only.



**Figure 1**  
**Environmental Mitigation Plan**  
 Typical Maintenance Excavation  
 Plan View

DATE: 3/23/2015

REVISED: 4/8/2015

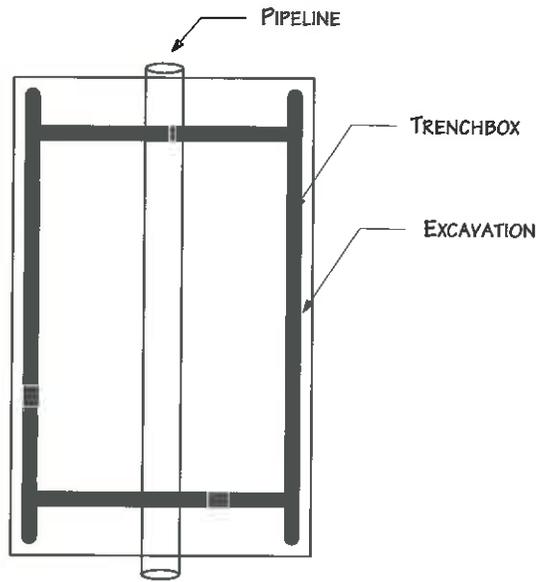
SCALE: NTS

DRAWN BY: JEBAKKEN

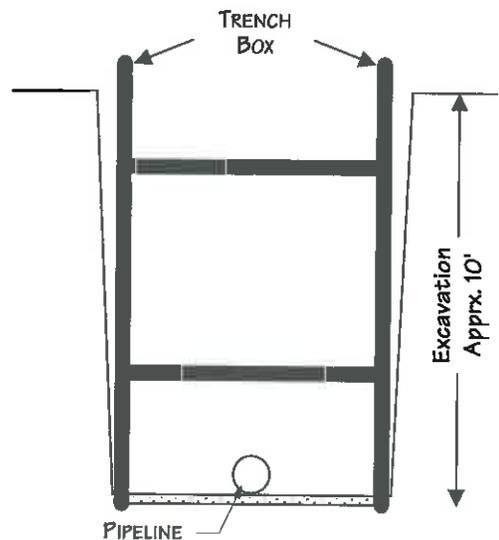
K1 CLIENT PROJECTS/D-FEELIBARR  
 201504/REVISED TYPICALS/  
 FIG\_01\_MAINT\_EXCAVATION.VSD



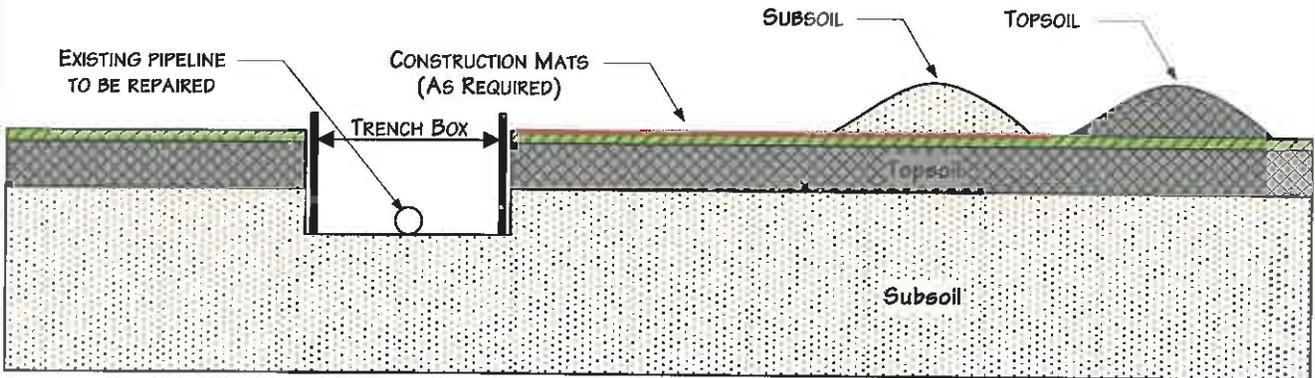
NOTE: TRENCH BOXES CONSIST OF TWO STEEL PLATES THAT HOLD UP THE SIDES OF AN EXCAVATION. THE PLATES ARE HELD IN PLACE BY STEEL BRACES.



PLAN: TRENCH BOX



PROFILE: TRENCH BOX



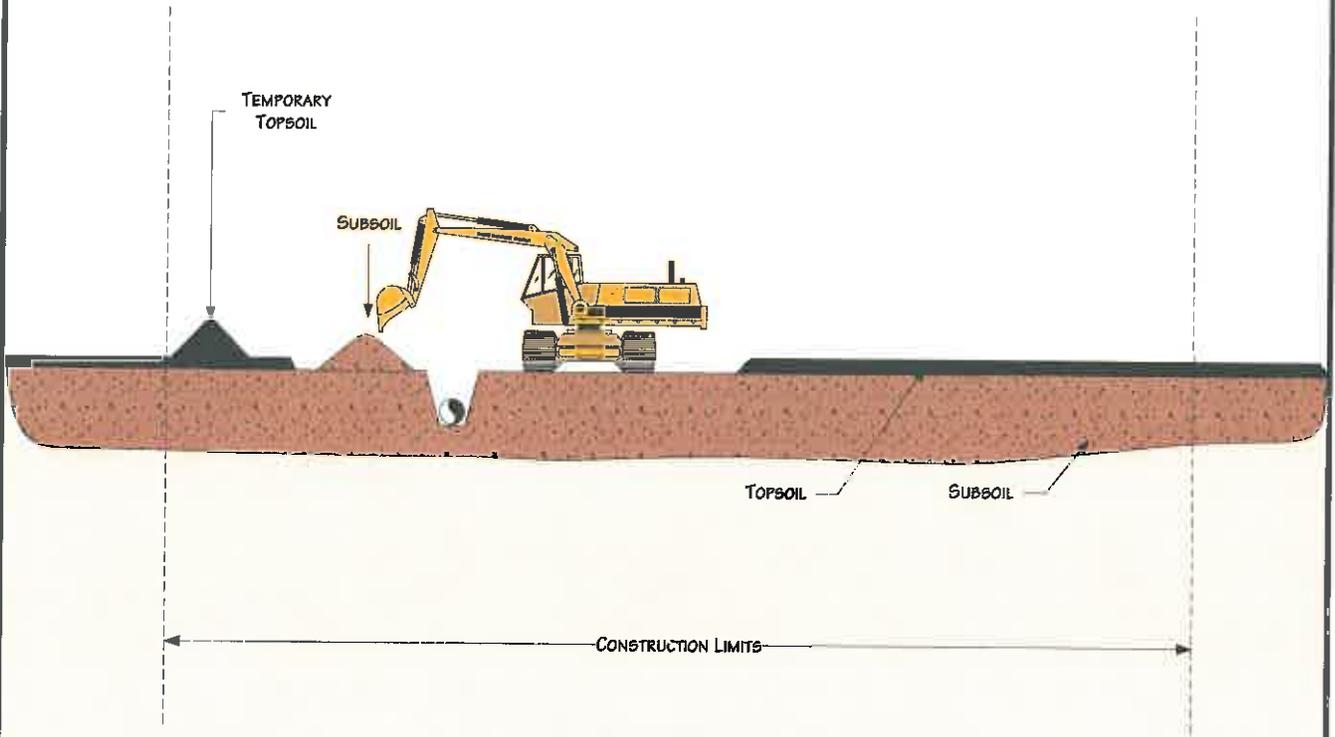
PROFILE: TRENCH BOX

For environmental review purposes only.



**Figure 2**  
Environmental Mitigation Plan  
Typical Trench Box

DATE: 3/23/2015
REVISED: 4/8/2015
SCALE: NTS
DRAWN BY: JEBAKKEN
K3 CLIENT PROJECTS/D-FEELIBARRI 201504/REVISED TYPICALS/ FIG_02_TRENCH_BOX.VSD



**PROFILE**

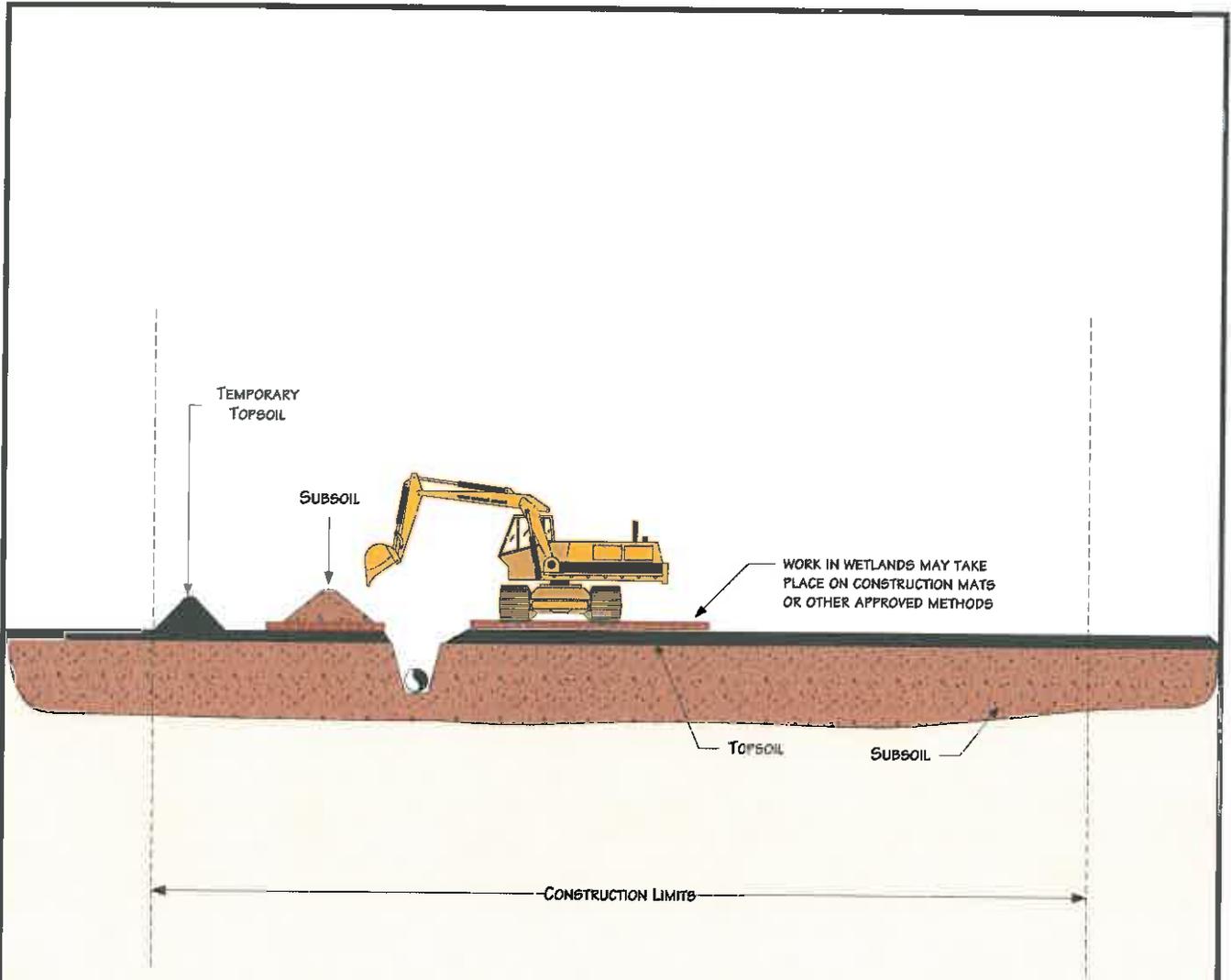
**NOTES:**

1. STOCKPILE TOPSOIL SEPARATELY FROM SUBSOIL AS SHOWN OR IN OTHER CONFIGURATIONS APPROVED BY THE COMPANY.
2. MINIMUM ONE FOOT SEPARATION MUST BE MAINTAINED BETWEEN TOPSOIL AND SUBSOIL OR A PHYSICAL BARRIER SHOULD BE USED.



**Figure 3**  
**Environmental Mitigation Plan**  
 Typical Topsoil Segregation – Upland

DATE: 7/9/2001	
REVISED: 4/7/2015	
SCALE: NTS	© ER&C CONSULTANTS LTD.
DRAWN BY: JPBOENTJE	
201504 REVISED TYPICALS	
FIG_03_TOPSOIL_SEGREGATION_UPLAND	
VSD	



**PROFILE**

**NOTES:**

1. STOCKPILE TOPSOIL SEPARATELY FROM SUBSOIL AS SHOWN OR IN OTHER CONFIGURATIONS APPROVED BY THE COMPANY.
2. MINIMUM ONE FOOT SEPARATION MUST BE MAINTAINED BETWEEN TOPSOIL AND SUBSOIL OR A PHYSICAL BARRIER SHOULD BE USED.
3. TO MINIMIZE WETLAND DISTURBANCE, WORK IN WETLANDS MAY TAKE PLACE ON CONSTRUCTION MATS OR OTHER APPROVED METHODS.
4. ALL STOCKPILES WILL BE PLACED ON CONSTRUCTION MATS WITHIN SATURATED WETLANDS



**Figure 4**  
**Environmental Mitigation Plan**  
**Typical Topsoil Segregation – Wetland**

DATE: 7/9/2001

REVISED: 4/14/2015

SCALE: NTS

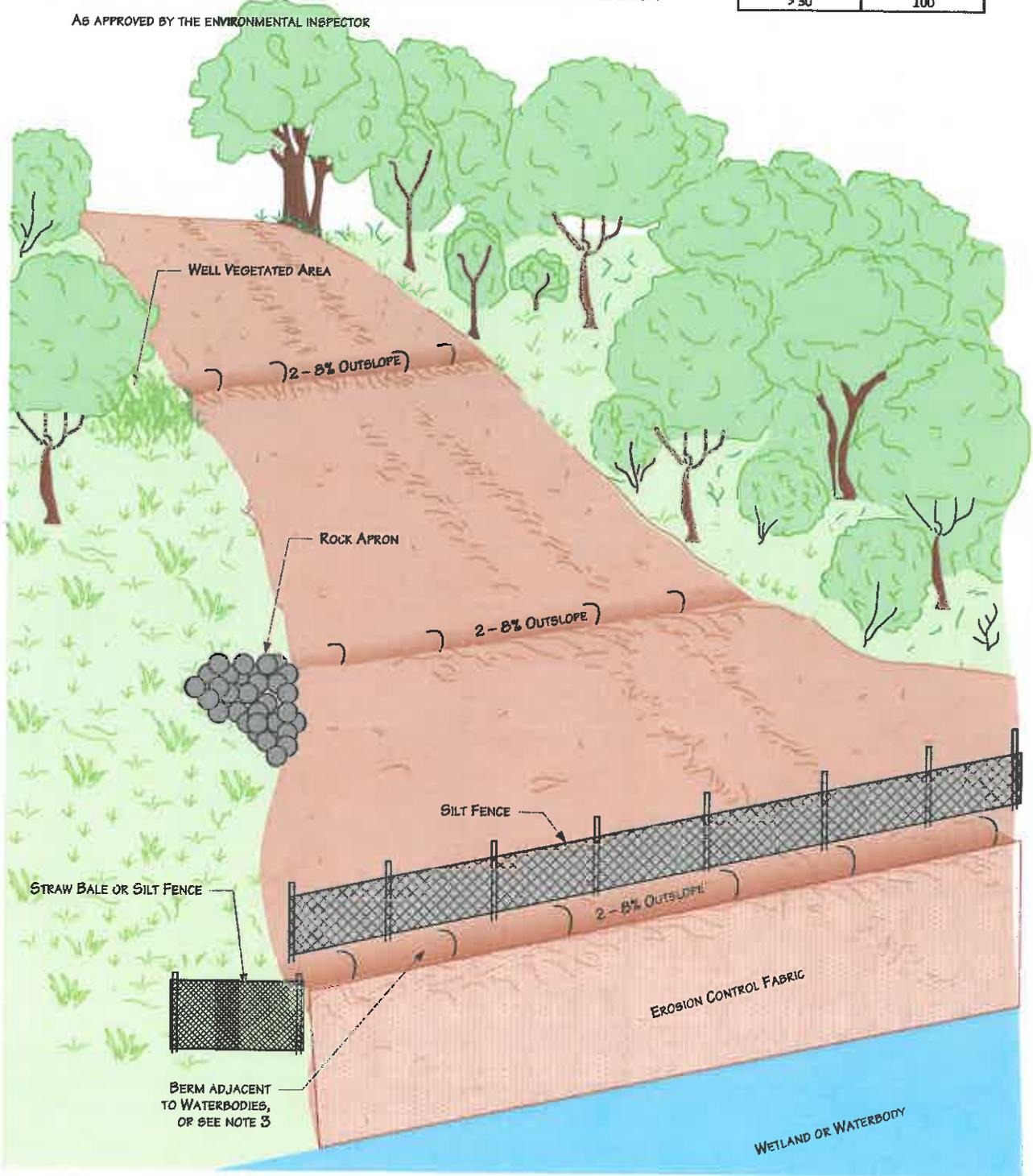
DRAWN BY: JPBOENTJE  
 K3 CLIENT PROJECTS/D-1/FELTBARR  
 201504/REVISED\_TYPICALS/  
 FIG. 04 TOPSOIL\_SEGREGATION\_WETLA  
 ND.VSD

**NOTES:**

1. SLOPE BREAKERS ARE PERMANENT EROSION CONTROL STRUCTURES.
2. STRAW BALES OR SILT FENCE SHALL BE REMOVED AFTER VEGETATION IS ESTABLISHED.
3. LOWEST BERM MAY BE OMITTED IF SILT FENCE OR STRAW BALES ARE INSTALLED AT THAT LOCATION.

AS APPROVED BY THE ENVIRONMENTAL INSPECTOR

Typical Spacing for Temp Waterbars	
Slope	Spacing (ft)
5 - 15	300
15 - 30	200
> 30	100



**Figure 5**  
**Environmental Mitigation Plan**  
 Typical Temporary Berms  
 Perspective View

DATE: 3/18/2015

REVISED: 4/14/2015

SCALE: NTS

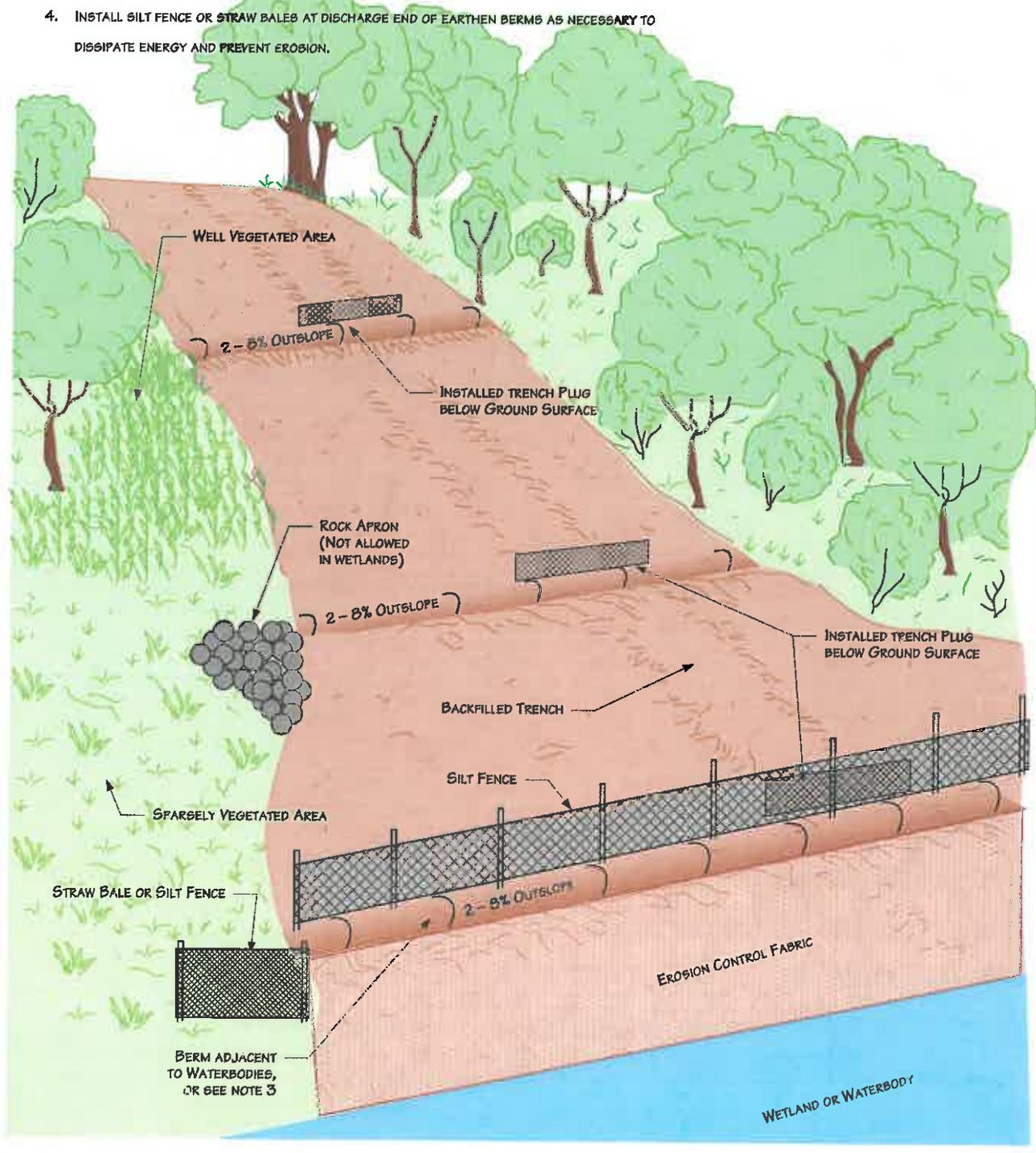
DRAWN BY: JPBOENTJE

K:\CLIENT PROJECTS\ID-FEELBARR\201504\REVISED TYPICALS\FIG\_05\_TEMP\_BERMS\_PERSVIEW.VSD

**NOTES:**

1. BERMS ARE PERMANENT.
2. STRAW BALES OR SILT FENCE SHALL BE REMOVED AFTER VEGETATION IS ESTABLISHED.
3. LOWEST BERM MAY BE OMITTED IF SILT FENCE OR STRAW BALES ARE INSTALLED AT THAT LOCATION.  
AS APPROVED BY THE ENVIRONMENTAL INSPECTOR
4. INSTALL SILT FENCE OR STRAW BALES AT DISCHARGE END OF EARTHEN BERMS AS NECESSARY TO DISSIPATE ENERGY AND PREVENT EROSION.

Typical Spacing for Perm Waterbars	
Slope	Spacing (ft)
3-5	250
5-15	200
15-25	150
>25	<100



**Figure 6**  
**Environmental Mitigation Plan**  
 Typical Permanent Berms  
 Perspective View

DATE: 3/18/2015

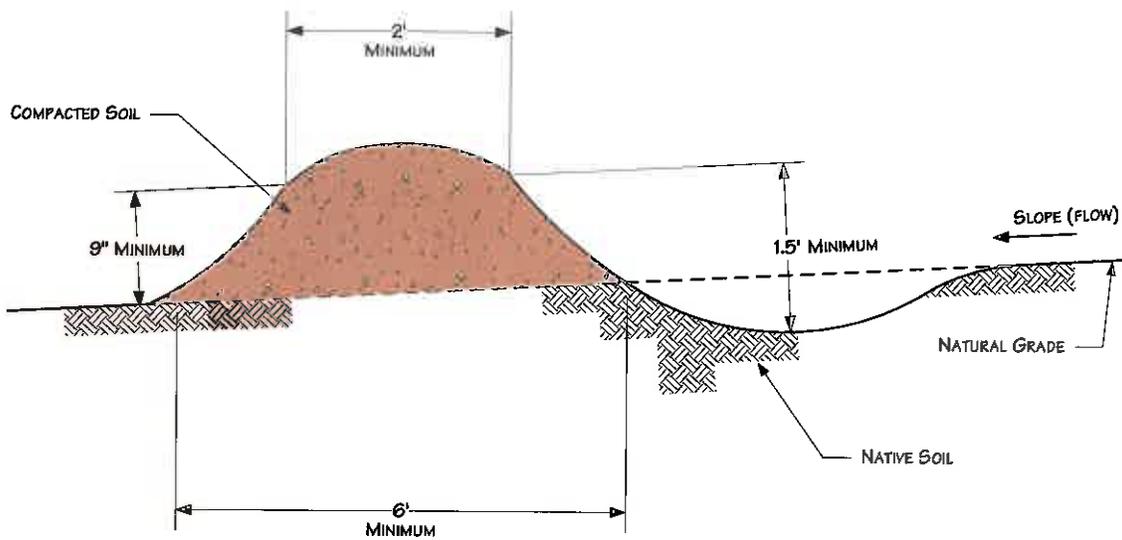
REVISED: 4/14/2015

SCALE: NTS

DRAWN BY: JPBOENTJE

K3 CLIENT PROJECTS/D-PEELIBARRI  
 2015/04/REVISED TYPICALS/1  
 FIG\_06\_PERM\_BERMS\_PERSVIEW.VSD





**NOTES**

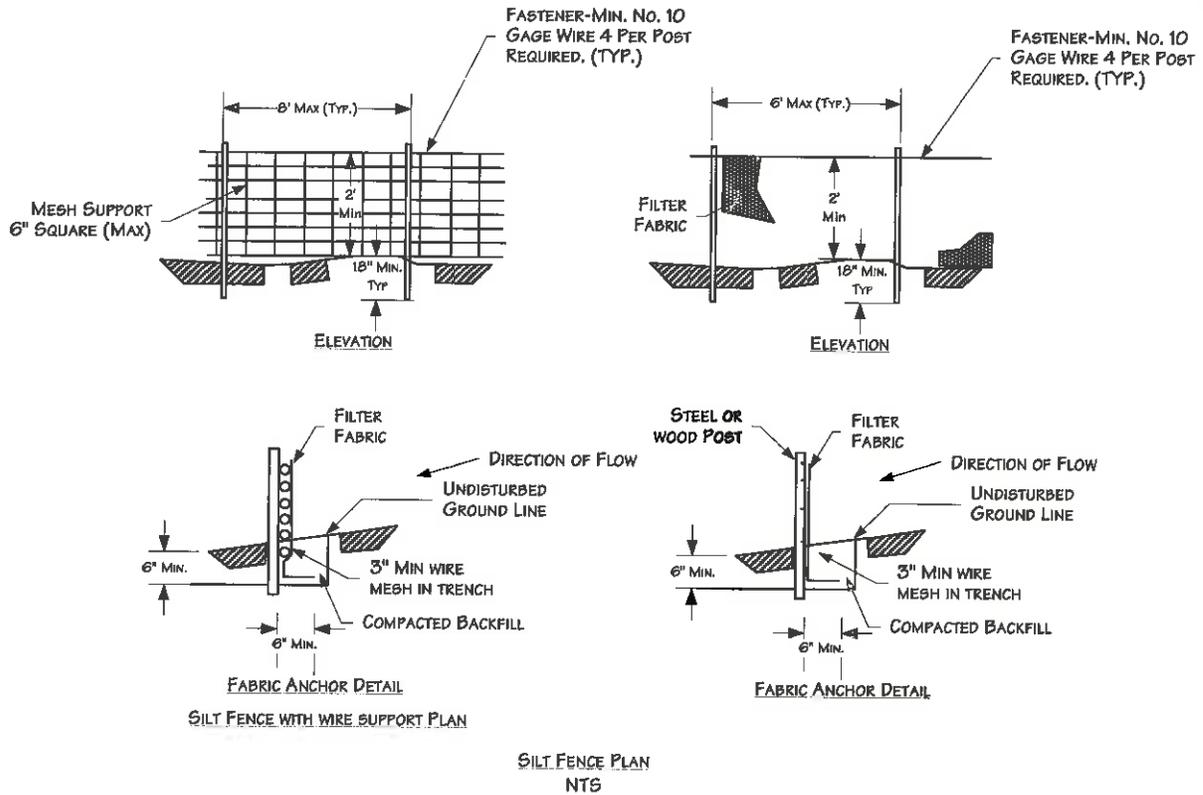
1. BERMS SHALL BE CONSTRUCTED WITH 2 TO 4 PERCENT OUTSLOPE.
2. BERMS SHALL BE OUTLETED TO WELL VEGETATED STABLE AREAS, SILT FENCES, STRAW BALES OR ROCK APRONS.
3. BERMS SHALL BE SPACED AS DESCRIBED IN CONSTRUCTION SPECIFICATIONS.
4. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS.
5. DIMENSIONS ARE GUIDELINES AND MAY BE MODIFIED SUBJECT TO FIELD CONDITIONS.

For environmental review purposes only.



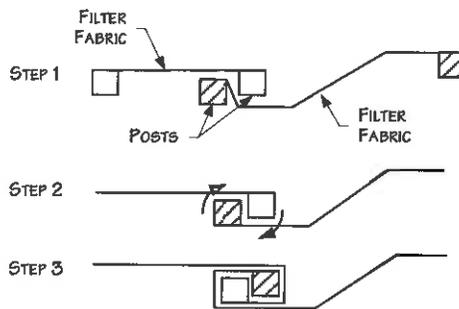
**Figure 7**  
**Environmental Protection Plan**  
 Typical Temporary or Permanent Berms  
 Cross Section View

DATE: 5/25/2001
REVISED: 4/10/2015
SCALE: NTS
DRAWN BY: KMKENDALL
<small>K:\CLIENT PROJECTS\ID-FEELIBARR\201504\REVISED TYPICALS\FIG_07_TEMPPERM_BERMS_XSVIEW.VSD</small>



**NOTES:**

1. WIRES OF MESH SUPPORT SHALL BE MIN. GAGE NO. 12.
2. FILTER FABRIC SHALL MEET THE REQUIREMENTS OF THE SPECIFICATION WITH EQUIVALENT OPENING SIZE OF AT LEAST 30 FOR NONWOVEN AND 50 FOR WOVEN. (SIEVE NO.)
3. THE POSTS USED TO SUPPORT THE SILT FENCE SHOULD BE HARDWOOD MATERIAL WITH A MINIMUM CROSS SECTIONAL AREA OF 4 INCHES SQUARE AND 4 FEET LONG. METAL POSTS SHOULD BE USED IN AREAS THAT POND WATER.



**ATTACHING TWO SILT FENCES**

**NOTES:**

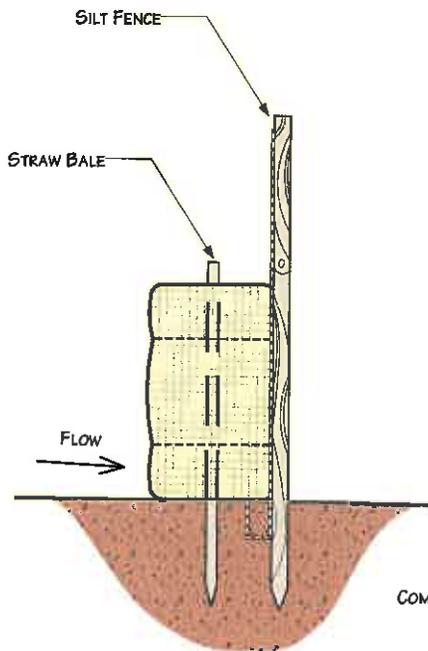
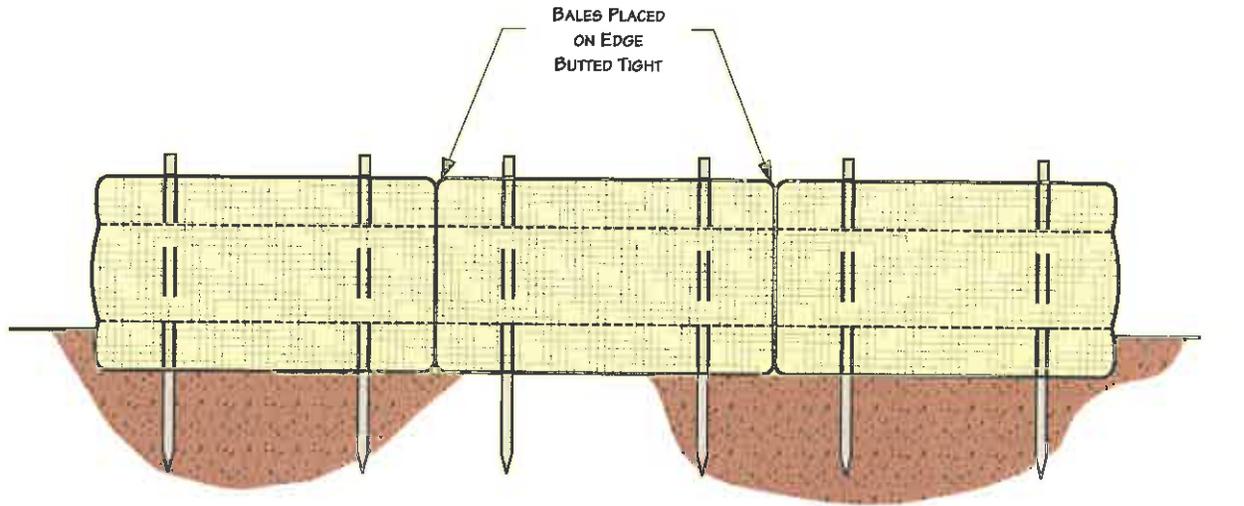
1. PLACE THE END POST OF THE SECOND FENCE INSIDE THE END POST OF THE FIRST FENCE.
2. ROTATE BOTH POSTS AT LEAST 180 DEGREES IN A CLOCKWISE DIRECTION TO CREATE A TIGHT SEAL WITH THE FABRIC MATERIAL.
3. DRIVE BOTH POSTS A MINIMUM OF 18 INCHES IN THE GROUND AND BURY THE FLAP.

For environmental review purposes only.

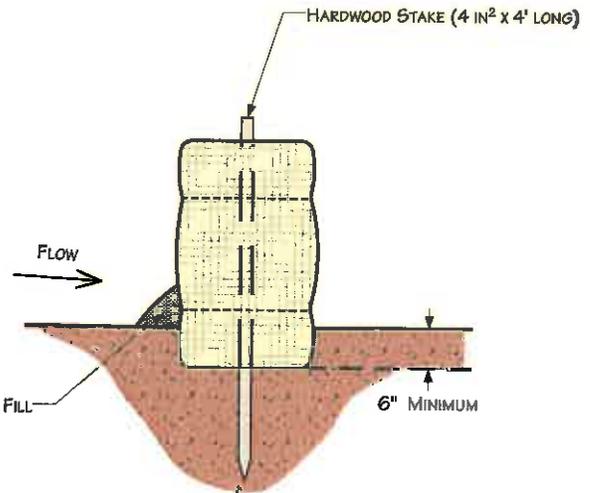


**Figure 8**  
**Environmental Mitigation Plan**  
**Typical Silt Fence Installation**

DATE: 5/25/2001	
REVISED: 4/10/2015	
SCALE: NTS	<small>an ENV Group company</small>
DRAWN BY: KMKENDALL	
<small>K1 CLIENT PROJECTS/D-FIELD/ARRA 201504/REVISED TYPICALS/ FIG. 08 SILT FENCE INSTALL/SD</small>	



STRAW BALES & SILT FENCE



STRAW BALES ONLY

For environmental review purposes only.



**Figure 9**  
**Environmental Mitigation Plan**  
**Typical Straw Bale Installation**

DATE: 5/25/2001

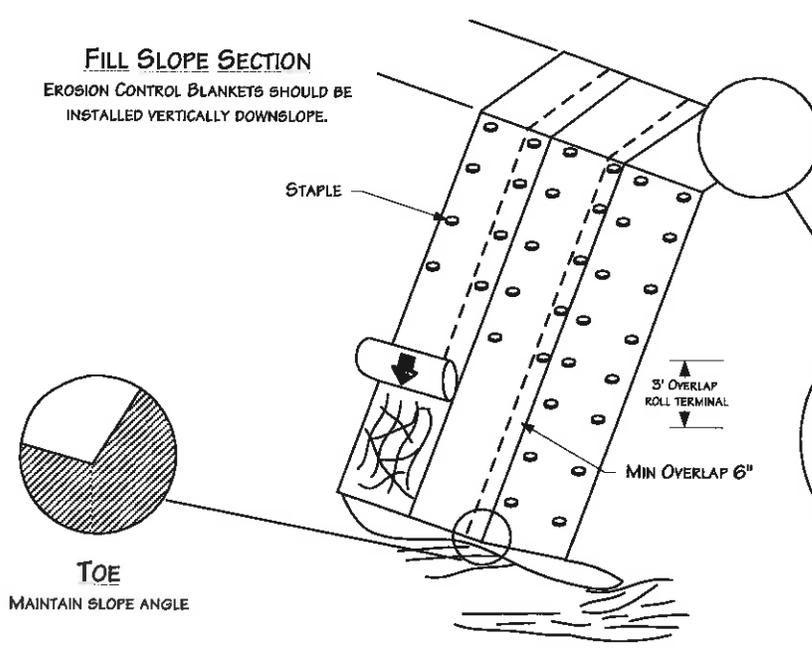
REVISED: 4/10/2015

SCALE: NTS

DRAWN BY: KMKENDALL

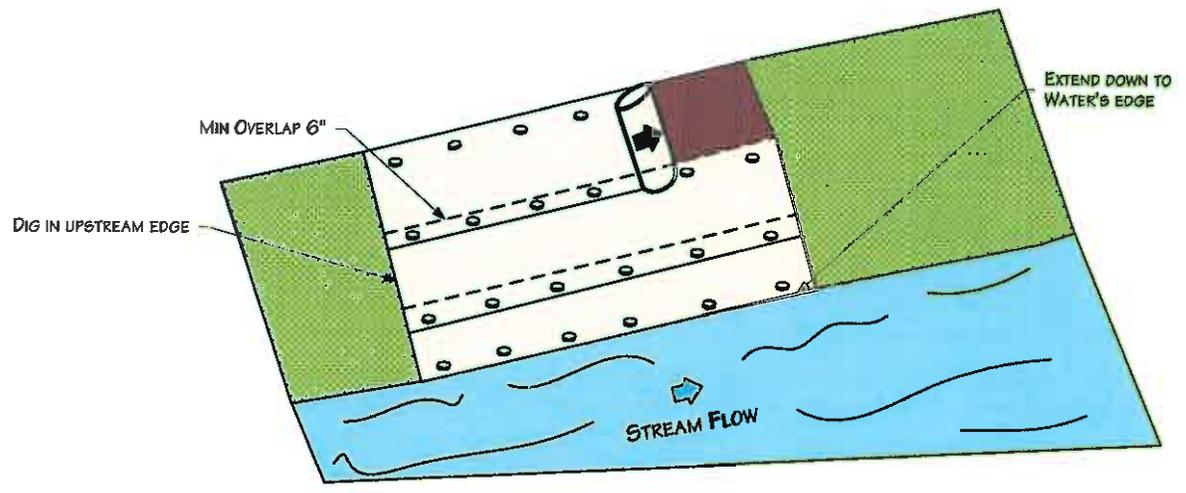
K1 CLIENT PROJECT SID-FREELBARR  
 201504REVISED TYPICALS  
 FIG 09 STRAW BALE INSTALL.VSD

**FILL SLOPE SECTION**  
 EROSION CONTROL BLANKETS SHOULD BE  
 INSTALLED VERTICALLY DOWNSLOPE.



- NOTES:**
1. SLOPE SURFACE SHALL BE SMOOTH AND FREE OF ROCKS, LUMPS OF DIRT, GRASS AND STICKS. MAT SHALL BE PLACED FLAT ON SURFACE TO ENSURE PROPER SOIL CONTACT.
  2. FOR OPTIMUM RESULTS, RECOMMENDED STAPLE PATTERN GUIDES MUST BE FOLLOWED. SUGGESTED ANCHORING METHODS VARY ACCORDING TO THE MANUFACTURER.

**STREAM BANK**  
 EROSION CONTROL BLANKETS SHOULD BE  
 INSTALLED PARALLEL TO STREAM FLOW.

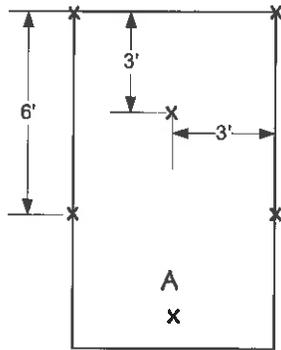


For environmental review purposes only.

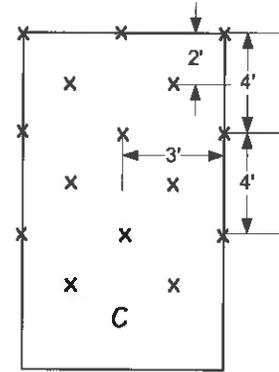


**Figure 10**  
**Environmental Mitigation Plan**  
 Typical Erosion Control Blanket Installation

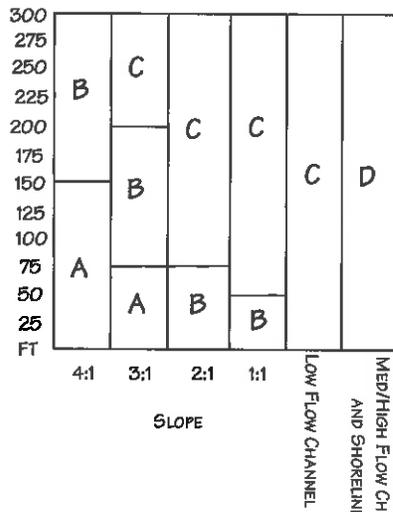
DATE: 5/25/2001  
 REVISED: 4/14/2015  
 SCALE: NTS  
 DRAWN BY: KMKENDALL  
 201504 REVISED TYPICALS  
 FIG 10 EROSION CONTROL BLANKET IN  
 STALL.VSD



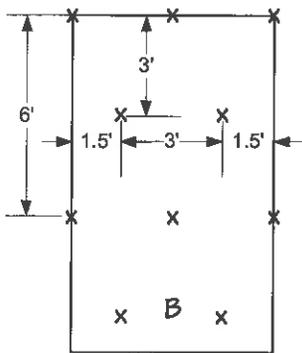
1 STAPLE PER SQ. YD



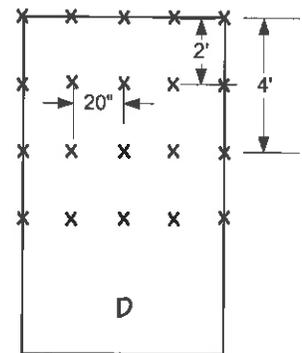
2 STAPLES PER SQ. YD



LENGTH OF SLOPE



1 1/2 STAPLES PER SQ. YD



3 1/2 STAPLES PER SQ. YD

FOR OPTIMUM RESULTS, THESE RECOMMENDED STAPLE PATTERN GUIDES MUST BE FOLLOWED. SUGGESTED ANCHORING METHODS VARY ACCORDING TO THE MANUFACTURER. THIS CHART SHOWS HOW TO SLOPE LENGTHS AND HOW GRADIENTS AFFECT SAMPLING PATTERNS.

For environmental review purposes only.



**Figure 11**  
**Environmental Mitigation Plan**  
 Typical Staple Pattern for  
 Erosion Control Fabric

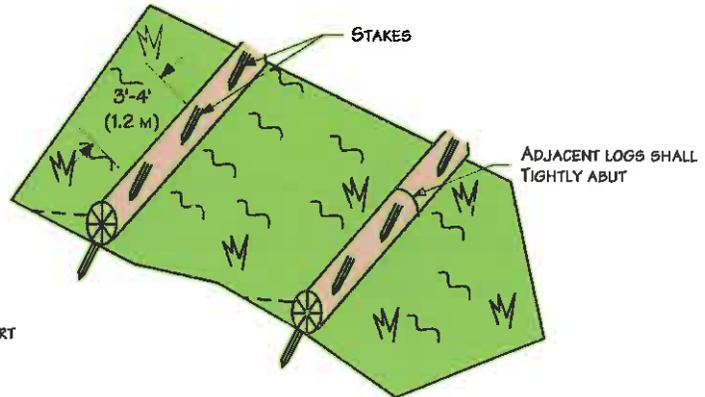
DATE: 5/25/2001

REVISED: 4/10/2015

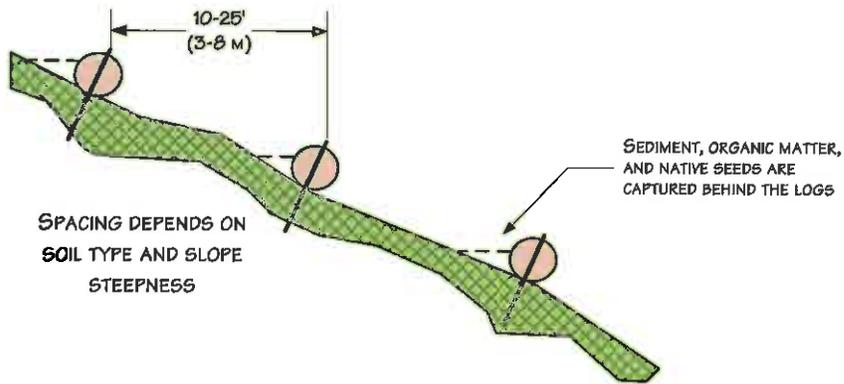
SCALE: NTS

DRAWN BY: KMKENDALL  
 2015/04/REVISD TYPICALS  
 FIG\_11\_STAPLE\_PATTERN\_EROSION\_CO  
 NTROL\_FABRIC.VSD

BIOLOGS SHOULD BE PLACED AND STAKED SECURELY ALONG SLOPE CONTOURS PER MANUFACTURER'S SPECIFICATION. STAKES SHOULD BE PLACED 3' TO 4' APART



RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND THE LOG.



For environmental review purposes only.



**Figure 12**  
**Environmental Mitigation Plan**  
**Typical Biolog Installation**

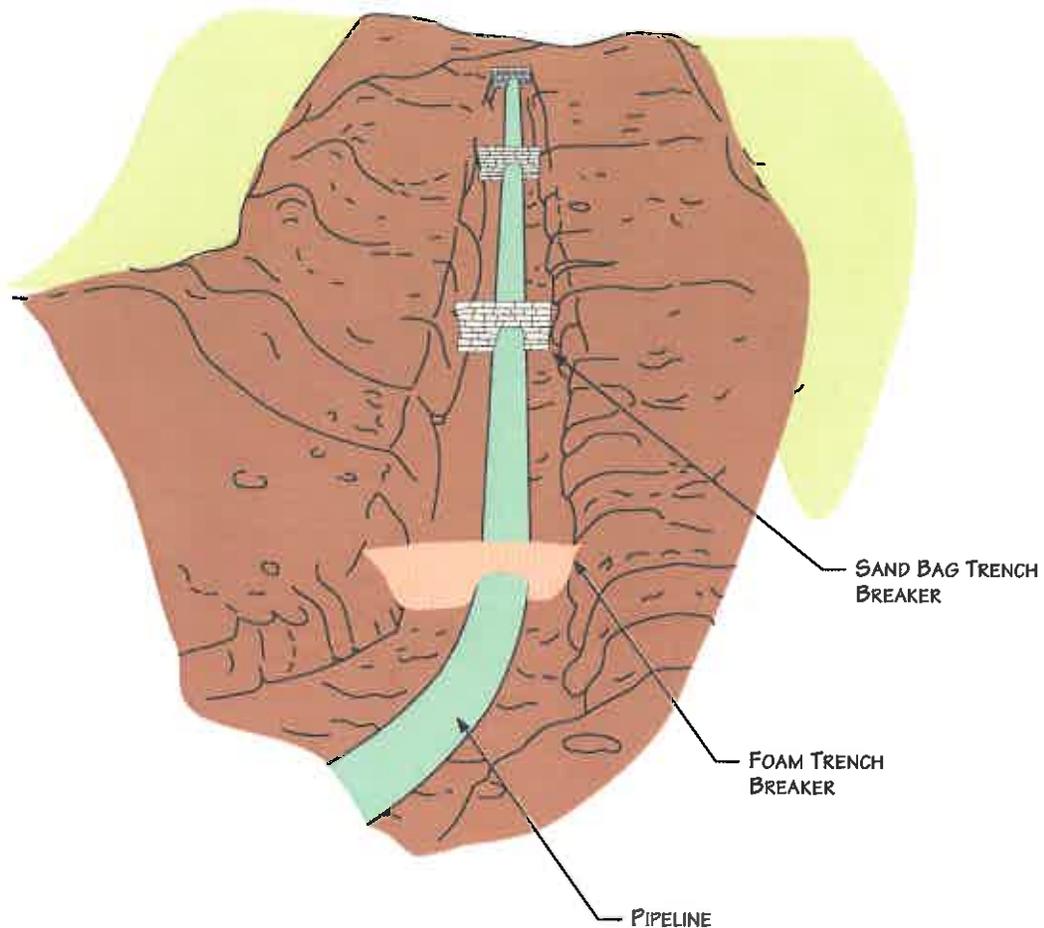
DATE: 5/25/2001

REVISED: 4/13/2015

SCALE: NTS

DRAWN BY: KMKENDALL

K:\CLIENT PROJECTS\ID-REEL\BARRI  
 201504\REVISED TYPICALS  
 FIG\_12\_BIOLOG INSTALL.VSD



**NOTES**

1. BAGS WILL NOT BE FILLED WITH TOPSOIL.
2. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS.

For environmental review purposes only.



**Figure 14**  
**Environmental Mitigation Plan**  
 Typical Trench Breakers - Perspective View

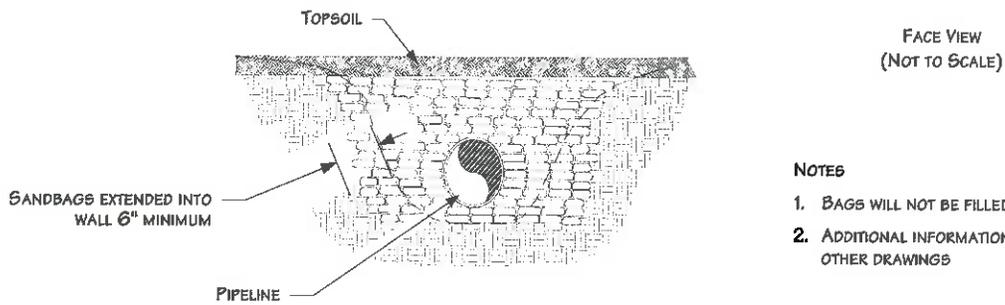
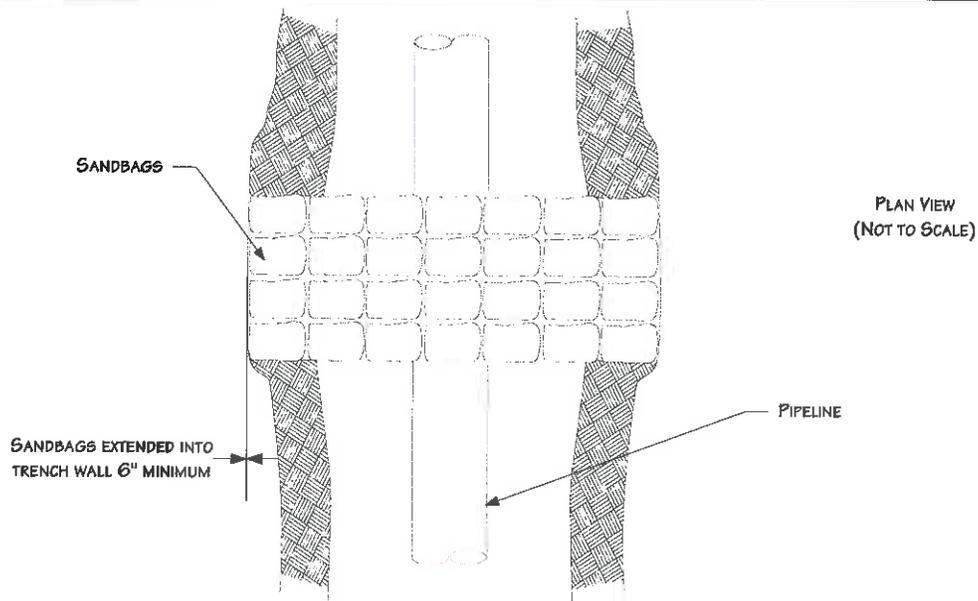
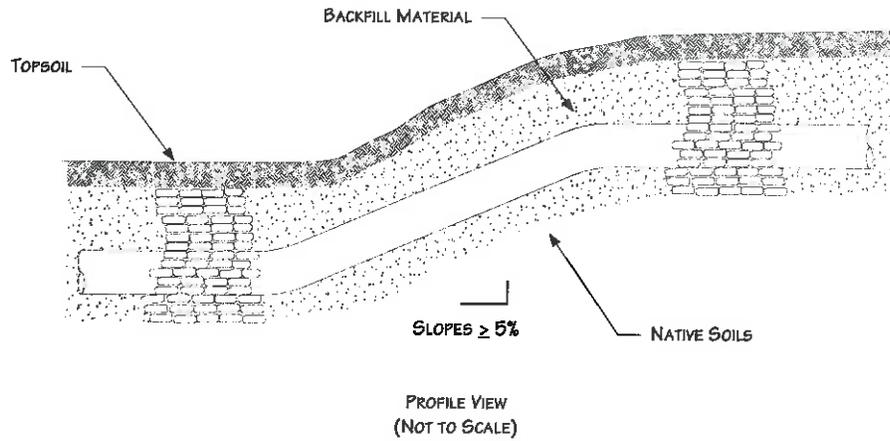
DATE: 5/25/2001

REVISED: 4/10/2015

SCALE: NTS

DRAWN BY: KMKENDALL  
 KCI CLIENT PROJECTS/SUBSAFE/BAGS  
 201504/REVISED TYPICALS/  
 FIG\_14\_TRENCH\_BREAKER\_PERSVIEW.  
 VSD





**NOTES**

1. BAGS WILL NOT BE FILLED WITH TOPSOIL
2. ADDITIONAL INFORMATION INCLUDED ON OTHER DRAWINGS

For environmental review purposes only.



**Figure 15**  
**Environmental Mitigation Plan**  
 Typical Trench Breakers – Plan & Profile View

DATE: 11/15/2000

REVISED: 4/10/2015

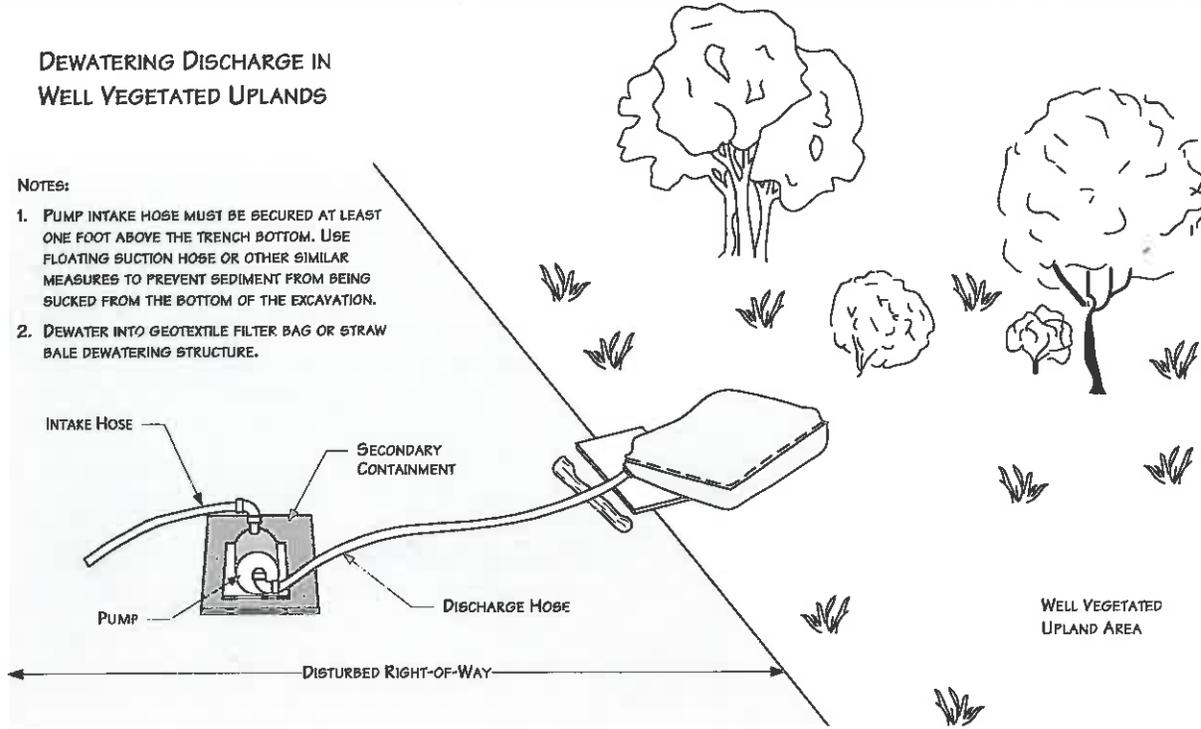
SCALE: NTS

DRAWN BY: KMKENDALL  
 K1 CLIENT PROJECTS/ENBRIDGE  
 2015/04/REVISD TYPICALS/  
 FIG 15 TRENCH\_BREAKER\_PLAN/PROFVI  
 EW/VSD

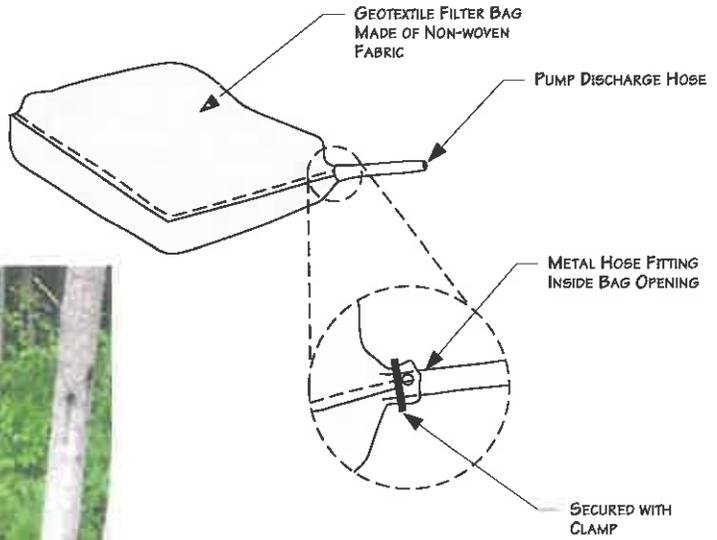
### DEWATERING DISCHARGE IN WELL VEGETATED UPLANDS

**NOTES:**

1. PUMP INTAKE HOSE MUST BE SECURED AT LEAST ONE FOOT ABOVE THE TRENCH BOTTOM. USE FLOATING SUCTION HOSE OR OTHER SIMILAR MEASURES TO PREVENT SEDIMENT FROM BEING SUCKED FROM THE BOTTOM OF THE EXCAVATION.
2. DEWATER INTO GEOTEXTILE FILTER BAG OR STRAW BALE DEWATERING STRUCTURE.



### GEOTEXTILE FILTER BAG



For environmental review purposes only.



**Figure 23**  
Environmental Mitigation Plan  
Typical Dewatering Measures

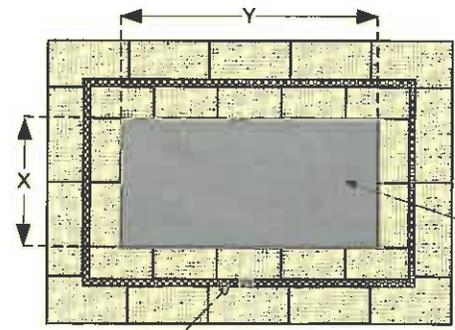
DATE: 5/25/2001

REVISED: 4/10/2015

SCALE: NTS

DRAWN BY: KMKENDALL

KY CLIENT PROJECT SID/FRED/BARR  
2015/REVISED TYPICALS  
FIG\_23\_DEWATERING\_MEASURES\_VSD

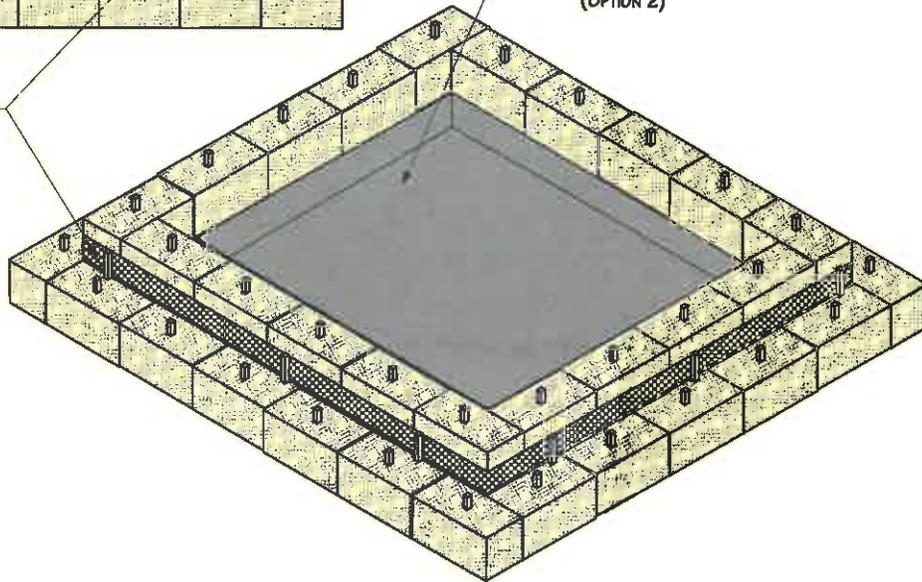


**NOTES:**

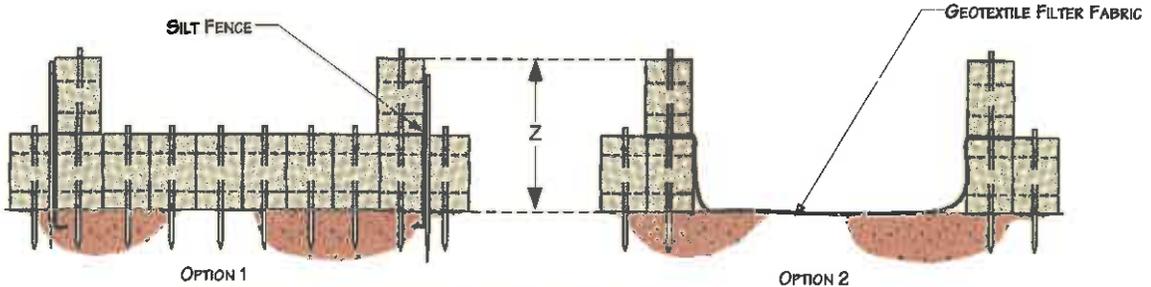
1. ARRANGE THE STRAW BALES TO THE X AND Y DIMENSIONS NECESSARY TO OBTAIN THE REQUIRED STORAGE CAPACITY.
2. SILT FENCE ENDS MUST BE WRAPPED TO JOIN TWO SECTIONS.
3. INSTALL SILT FENCE 2 INCHES ABOVE TOP OF STRAW BALE, AND ANCHOR A MINIMUM OF 8 INCHES STRAIGHT DOWN
4. SILT FENCE POST STAKING MUST BE 4 FEET OR LESS

SILT FENCE  
(OPTION 1)

GEOTEXTILE FILTER FABRIC  
(OPTION 2)



PERSPECTIVE VIEW



MINIMUM STRUCTURE CAPACITY $X \times Y \times Z =$ (CUBIC FEET)	MAXIMUM PUMPING RATE (GALLONS PER MINUTE)
1600	100
2400	150
3200	200
4000	250
4800	300
5600	350
6400	400

For environmental review purposes only.



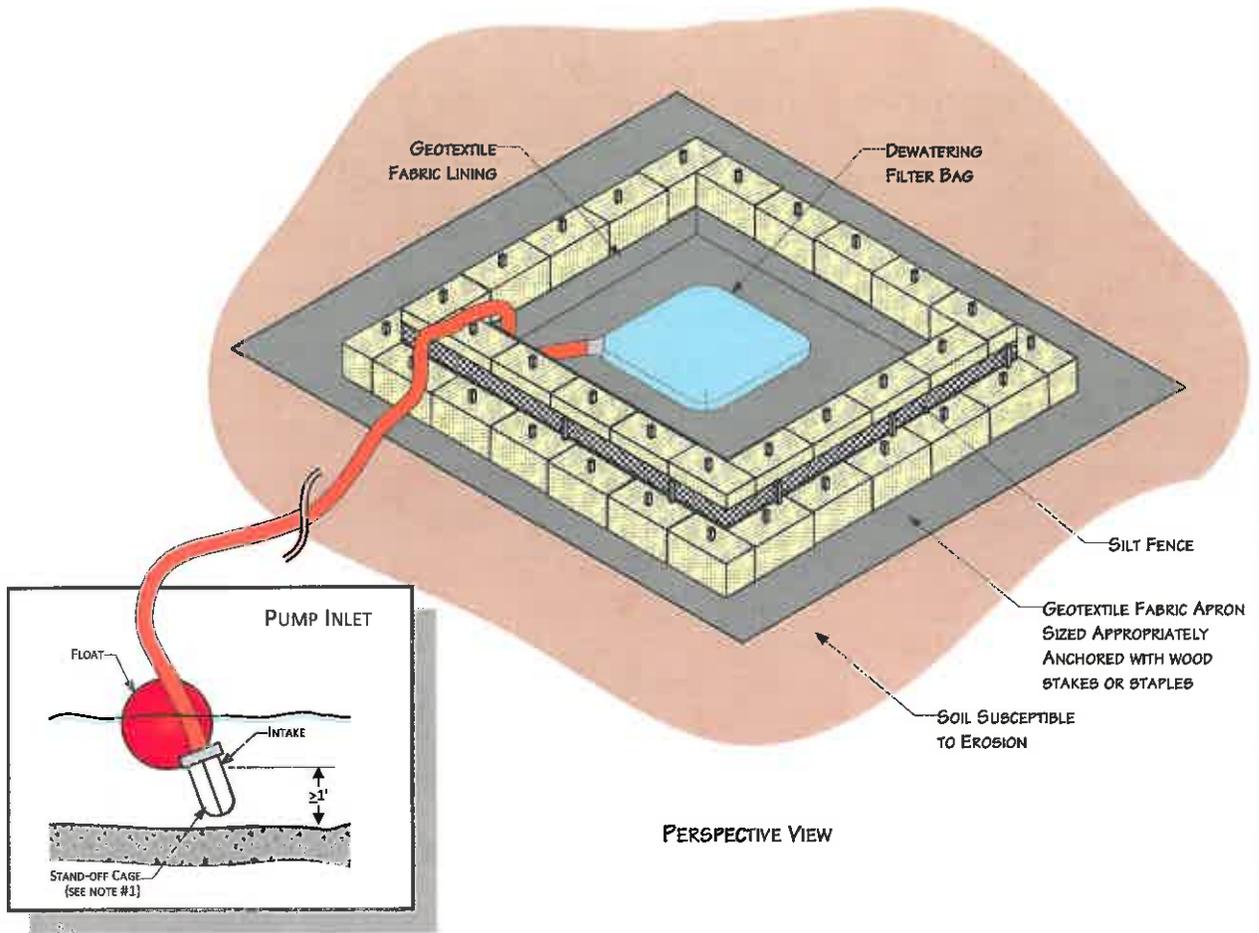
**Figure 24**  
**Environmental Mitigation Plan**  
**Straw Bale Dewatering Structure**

DATE: 5/25/2001

REVISED: 4/14/2015

SCALE: NTS

DRAWN BY: KMKENDALL  
K1 CLIENT PROJECTS/2015/11/16/2015/04/REVISED TYPICALS/FIG 24 STRAW\_BALE\_DEWATERING\_STRUCTURE.VSD



\* SEE FIGURE 24 FOR EXAMPLE OF OPTION 1 AND OPTION 2 DESIGNS.

**NOTES:**

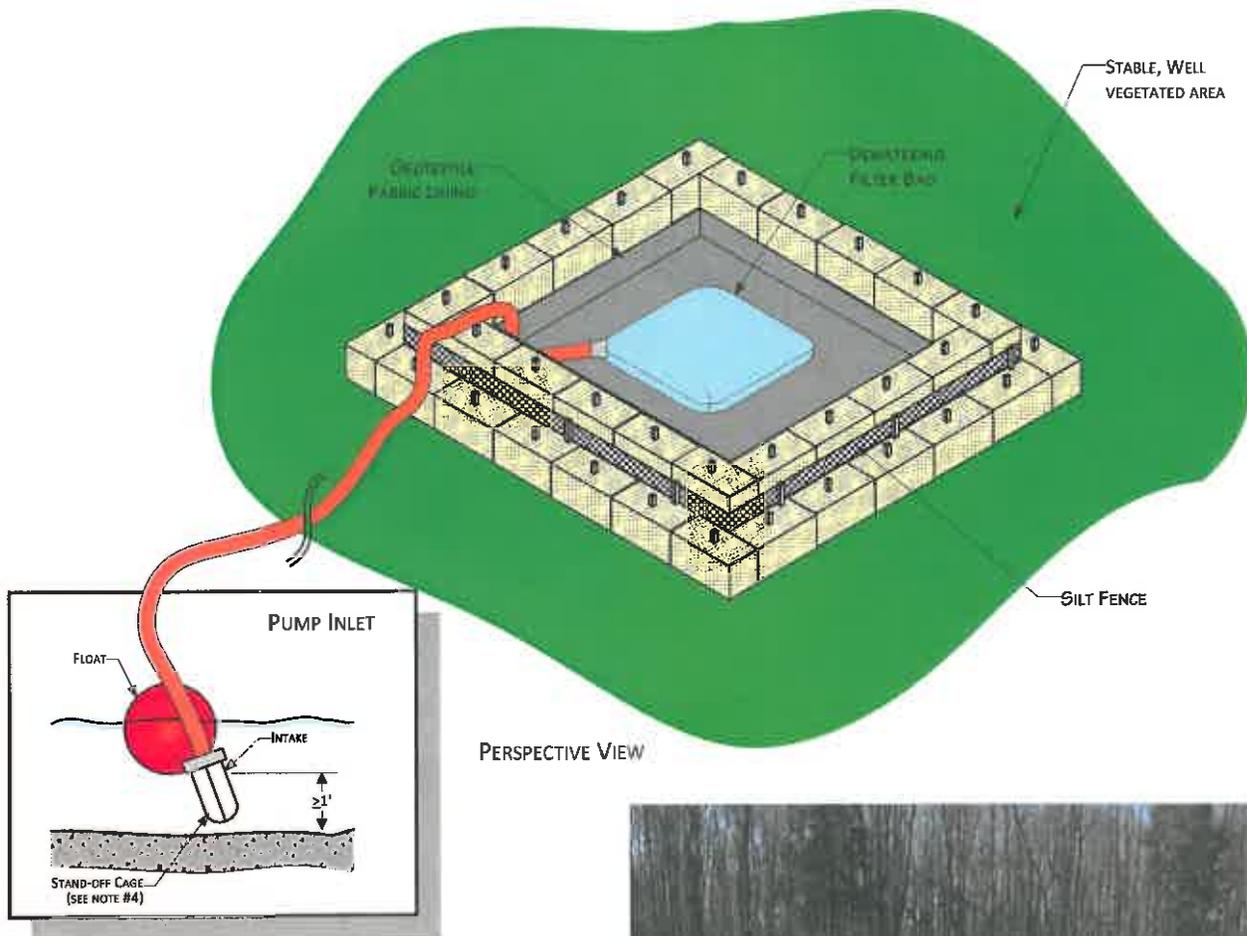
1. DEWATERING INTAKE HOSE SUPPORTED AT LEAST 1 FOOT FROM BOTTOM OF TRENCH BEING DEWATERED. USE FLOATING SUCTION HOSE OR OTHER SIMILAR MEASURES TO PREVENT SEDIMENT FROM BEING SUCKED FROM BOTTOM OF THE EXCAVATION.
2. USE A FILTER BAG AT THE DISCHARGE HOSE END.
3. MONITOR FILTER BAG AND REPLACE AS NEEDED.
4. CONSTRUCT DEWATERING STRUCTURE TO ACCOMMODATE ANTICIPATED PUMPING RATES.
5. ONE-BALE HEIGHT MAY BE USED WHEN ADEQUATE AREA IS AVAILABLE TO CONSTRUCT APPROPRIATE SIZED STRUCTURE.

For environmental review purposes only.



**Figure 25**  
**Environmental Mitigation Plan**  
**Straw Bale Dewatering Structure**

DATE: 5/25/2001	
REVISED: 4/14/2015	
SCALE: NTS	
DRAWN BY: KMKENDALL	
201504 (REVISED TYPICALS)	
FIG 25 STRAW_BALE_DEWATERING_STRUCTURE.VSD	



\* SEE FIGURE 24 FOR EXAMPLE OF OPTION 1 AND OPTION 2 DESIGNS.

**NOTES:**

1. DEWATERING INTAKE HOSE SUPPORTED AT LEAST 1 FOOT FROM BOTTOM OF TRENCH BEING DEWATERED. USE FLOATING SUCTION HOSE OR OTHER SIMILAR MEASURES TO PREVENT SEDIMENT FROM BEING SUCKED FROM BOTTOM OF THE EXCAVATION.
2. USE A FILTER BAG AT THE DISCHARGE HOSE END.
3. MONITOR FILTER BAG AND REPLACE AS NEEDED.
4. CONSTRUCT DEWATERING STRUCTURE TO ACCOMMODATE ANTICIPATED PUMPING RATES.
5. ONE-BALE HEIGHT MAY BE USED WHEN ADEQUATE AREA IS AVAILABLE TO CONSTRUCT APPROPRIATE SIZED STRUCTURE.

For environmental review purposes only.



**Figure 26**  
**Environmental Mitigation Plan**  
**Straw Bale Dewatering Structure**

DATE: 9/24/2009

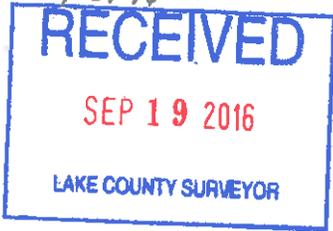
REVISED: 4/14/2015

SCALE: NTS

DRAWN BY: JEBAKKEN

201504 REVISED TYPICALS  
 FIG 26 STRAW\_BALE\_DEWATERING\_STRUCTURE.VSD

Handout 6-C  
9-21-16



LAKE COUNTY DRAINAGE BOARD

RE: The Obstruction of Private Drainage

Comes now Paul + Christine Gesiakowski, who petitions the Lake County Drainage Board, per IC 36-9-27.4, for removal of drainage obstruction(s). Petitioner, in support of the petition, advised the Board that:

1. Petitioner is the owner of tract Lot 4 in JAMAR Estates per the records of the Lake County Auditor and that said tract is upstream of a drainage obstruction within a private tile drain or a defined natural surface water channel, causing an adverse effect on petitioners tract.
2. An obstruction to drainage exists on the downstream tract owned by See attached sheet which is listed on the Auditors Records as tract number see attached sheet and whose address is shown as see attached sheet. Said obstruction is caused by see attached and is located see attached
3. The petitioner has requested in writing & sent return receipt requested to the above named downstream owner, to remove the obstruction and at this time the obstruction has not been removed. In support of this there is attached a copy of the letter requesting the removal of the obstruction with the original return receipt. It has been thirty (30) or more days since the receipt of the letter by the above downstream owner.
4. Petitioner has submitted a copy of the Auditors Tax Map showing location of drain; location of obstruction; drainage shed of drain; and size of drain if tiled.
5. Petitioner has submitted a list of owners within the drainage shed of the private tile or natural stream showing names of owners; owners address; parcel number; and acres in tract. All of this information is per the Auditors Record. Also included is the estimated acres benefited by the drain for each tract listed.
6. Petitioner believes that the obstruction was: (Mark One)  
 Caused intentionally by the downstream owner.  
 Not caused intentionally by the downstream owner.

Paul Gesiakowski  
Signed

Christine Gesiakowski  
Signed

Paul Gesiakowski  
Printed

Christine Gesiakowski  
Printed

(219) 689-6831 (219) 801-6648  
Phone Number(s)

10353 Cline Avenue  
Crown Point  
Address

# Lake County Drainage Board Petition

#2

James, Andrew

Parcel # 45-15-02-100-007.000-041

7411 W. 101st Avenue Crown Point IN 46307

Guritz, James O. + Patricia J.

Parcel # 45-11-35-352-006.000-032

7715 W. 101st Avenue Crown Point IN 46307

Walter, Christine A.

Parcel # 45-11-35-352-007.000-032

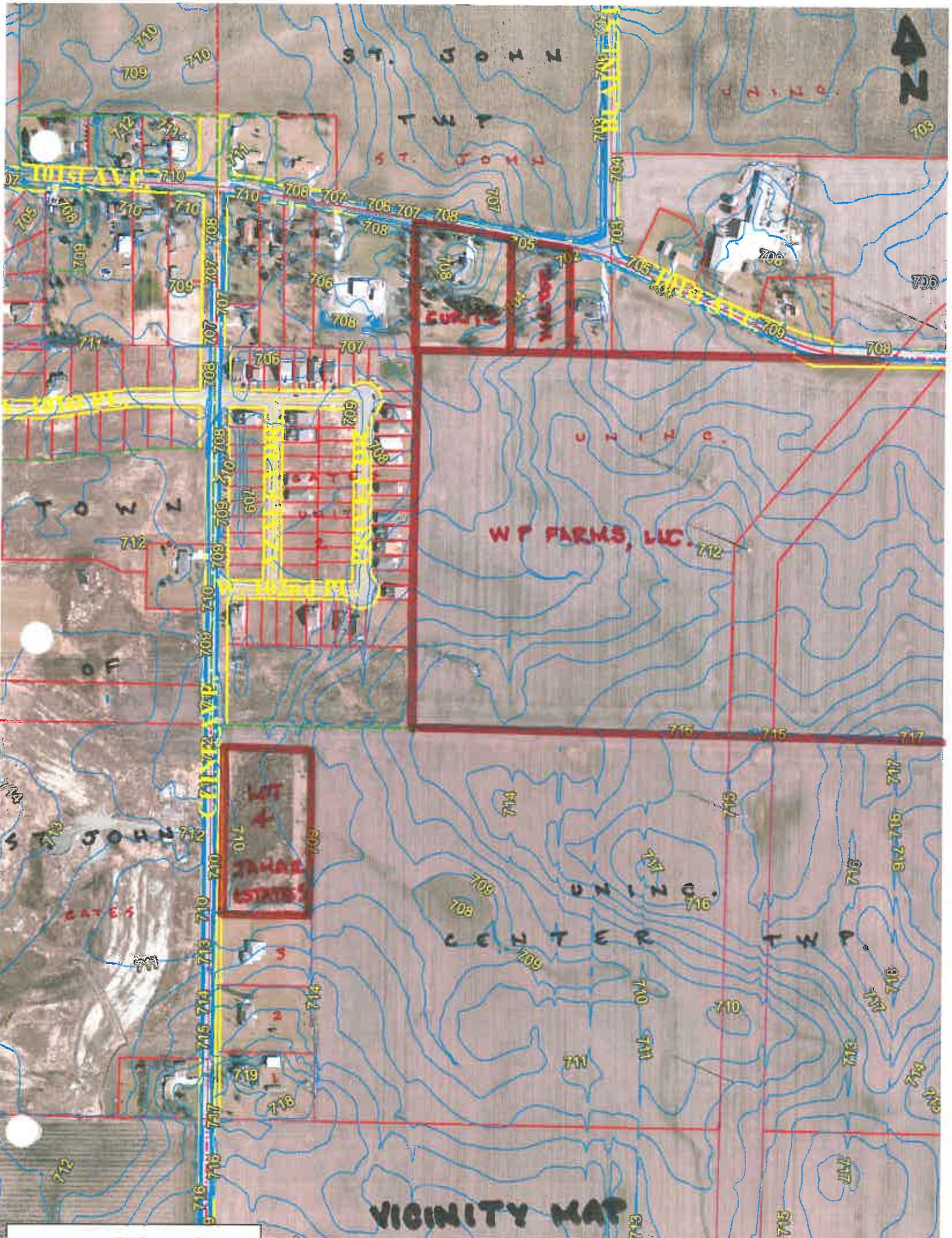
7635 W. 101st Avenue Crown Point IN 46307

Paul + Christine Gesiakowski

Lot 4 JAMAR Estates

10353 Cline Avenue Crown Point IN 46307

(219) 689-6831 + (219) 801-6648



VICINITY MAP



S T. G O I Z  
T E T

S T. G O M L

W P FARMS, LLC

UNIZC

C E N T E R T W A

TOLEAVE

TOLEAVE

JOHN

GATES

LOT 4  
JAHAR  
ESTATES



Dear Christine Walter:

July 7<sup>th</sup>, 2016

222 Ernest Street

Griffith, In 46319

This letter to you is to inform you of an attempt to reduce the risk of ongoing flooding that occurs on our property as the result of drainage flow issues that may exist on your property. We live at 10353 Cline Avenue and in March of 2015 we moved into the home we built there.

We have experienced multiple flooding events since then and have determined that storm water backs up out of the ground drains from north of where we live. The investigation with the Lake County Surveyors Office along with the Town of St. John has determined the natural overland flow through your property has obstructed the overland flow route from the Gates of St. John at the detention pond outfall to the intersection at the southwest corner of 101<sup>st</sup> Avenue and Blaine Street.

Per the Lake County Private Drain Petition procedure, which comes from the Indiana Drainage Code (I.C. 36-9-27.4), if after 30 days the obstruction or re-establishing the overland flow has not been removed or re-graded, the Lake County Drainage Board will be petitioned by us.

Any questions, please contact the Lake County Surveyors Office at 219.755.3745.

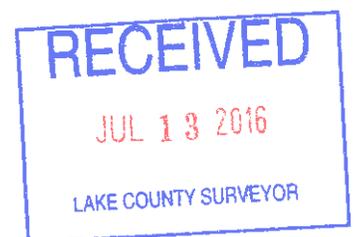
Sincerely,

Paul and Christine Gesiakowski

10353 Cline Avenue

Crown Point, IN 46307

*Paul Gesiakowski*  
*Christine Gesiakowski*



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**GRIFFITH, IN 46319**

Certified Mail Fee	<b>\$3.30</b>
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Extra Services & Fees (check box, add fee as applicable)	<b>\$0.00</b>
<input type="checkbox"/> Return Receipt (hardcopy)	\$ <del>0.00</del>
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<input type="checkbox"/> Certified Mail Restricted Delivery	\$ <del>0.00</del>
<input type="checkbox"/> Adult Signature Required	\$ <del>0.00</del>
<input type="checkbox"/> Adult Signature Restricted Delivery	\$ <del>0.00</del>
Postage	<b>\$0.47</b>
\$	
<b>Total Postage and Fees</b>	<b>\$3.77</b>
\$	

**0373**  
**12**

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**07/07/2016**

Sent To

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City, State, ZIP+4®

PS Form 3800, April 2015 PSN 753-01-000-9001

See Reverse for Instructions

7015 3010 0002 0662 9097

Dear James and Patricia Guritz:

July 7<sup>th</sup>, 2016

7715 101<sup>st</sup> Avenue

Crown Point, IN 46307

This letter to you is to inform you of an attempt to reduce the risk of ongoing flooding that occurs on our property as the result of drainage flow issues that may exist on your property. We live at 10353 Cline Avenue and in March of 2015 we moved into the home we built there.

We have experienced multiple flooding events since then and have determined that storm water backs up out of the ground drains from north of where we live. The investigation with the Lake County Surveyors Office along with the Town of St. John has determined the natural overland flow through your property has obstructed the overland flow route from the Gates of St. John at the detention pond outfall to the intersection at the southwest corner of 101<sup>st</sup> Avenue and Blaine Street.

Per the Lake County Private Drain Petition procedure, which comes from the Indiana Drainage Code (I.C. 36-9-27.4), if after 30 days the obstruction or re-establishing the overland flow has not been removed or re-graded, the Lake County Drainage Board will be petitioned by us.

Any questions, please contact the Lake County Surveyors Office at 219.755.3745.

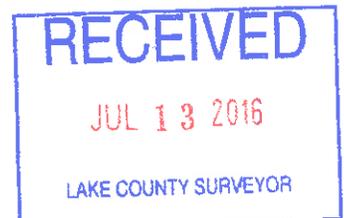
Sincerely,

Paul and Christine Gesiakowski

10353 Cline Avenue

Crown Point, IN 46307

*Paul Gesiakowski*  
*Christine Gesiakowski*



**U.S. Postal Service™**  
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**CRUMM POINT, IN 46307**

7015 3010 0002 0662 9110

Certified Mail Fee	<b>\$3.30</b>
Extra Services & Fees (check box, add fee as appropriate)	<b>\$0.00</b>
<input type="checkbox"/> Return Receipt (hardcopy)	\$ <del>0.00</del>
<input type="checkbox"/> Return Receipt (electronic)	\$ <del>0.00</del>
<input type="checkbox"/> Certified Mail Restricted Delivery	\$ <del>0.00</del>
<input type="checkbox"/> Adult Signature Required	\$ <del>0.00</del>
<input type="checkbox"/> Adult Signature Restricted Delivery	\$ <del>0.00</del>
Postage	<b>\$0.47</b>
<b>Total Postage and Fees</b>	<b>\$3.77</b>

0373  
12

Postmark  
Here

07/07/2016

Sent To  
 Street and Apt. No., or PO Box No.  
 City, State, ZIP+4®

Dear W.P. Farms LLC:

July 7<sup>th</sup>, 2016

8051 Wicker Avenue Ste. A

St. John, IN 46373

This letter to you is to inform you of an attempt to reduce the risk of ongoing flooding that occurs on our property as the result of drainage flow issues that may exist on your property. We live at 10353 Cline Avenue and in March of 2015 we moved into the home we built there.

We have experienced multiple flooding events since then and have determined that storm water backs up out of the ground drains from north of where we live. The investigation with the Lake County Surveyors Office along with the Town of St. John has determined the natural overland flow through your property has obstructed the overland flow route from the Gates of St. John at the detention pond outfall to the intersection at the southwest corner of 101<sup>st</sup> Avenue and Blaine Street.

Per the Lake County Private Drain Petition procedure, which comes from the Indiana Drainage Code (I.C. 36-9-27.4), if after 30 days the obstruction or re-establishing the overland flow has not been removed or re-graded, the Lake County Drainage Board will be petitioned by us.

Any questions, please contact the Lake County Surveyors Office at 219.755.3745.

Sincerely,

Paul and Christine Gesiakowski

10353 Cline Avenue

Crown Point, IN 46307



RECEIVED

JUL 13 2016

LAKE COUNTY SURVEYOR

7015 3010 0002 0662 9103

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**SAINT JOHN, IN 46373**

Certified Mail Fee	<b>\$3.30</b>
\$	
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$ <del>0.00</del>
<input type="checkbox"/> Return Receipt (electronic)	\$ <del>0.00</del>
<input type="checkbox"/> Certified Mail Restricted Delivery	\$ <del>0.00</del>
<input type="checkbox"/> Adult Signature Required	\$ <del>0.00</del>
<input type="checkbox"/> Adult Signature Restricted Delivery	\$ <del>0.00</del>
Postage	<b>\$0.47</b>
\$	
<b>Total Postage and Fees</b>	<b>\$3.77</b>
\$	

**0373**  
**12**

Postmark  
Here

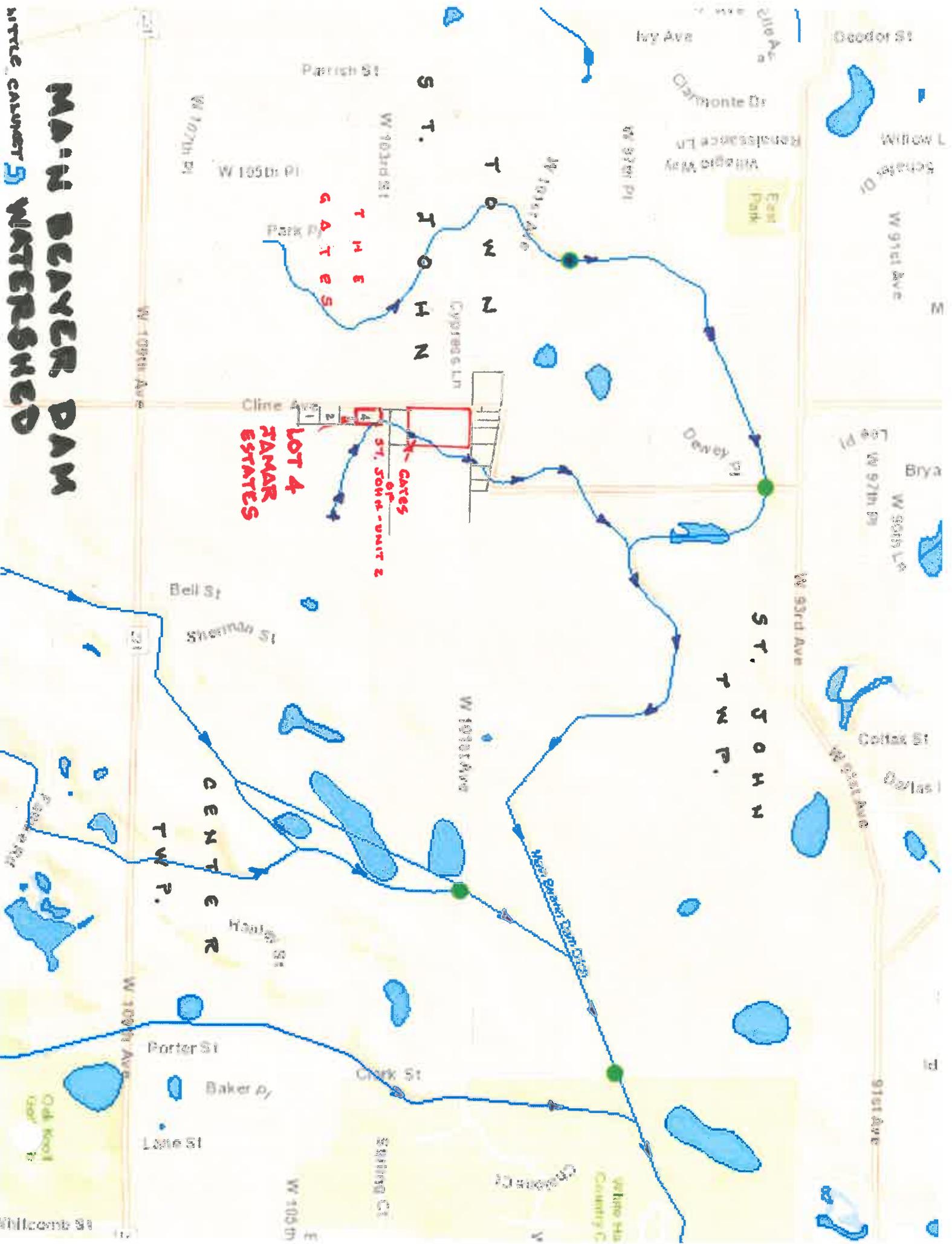
**07/07/2016**

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# MAH BEAVER DAM WATER SHED

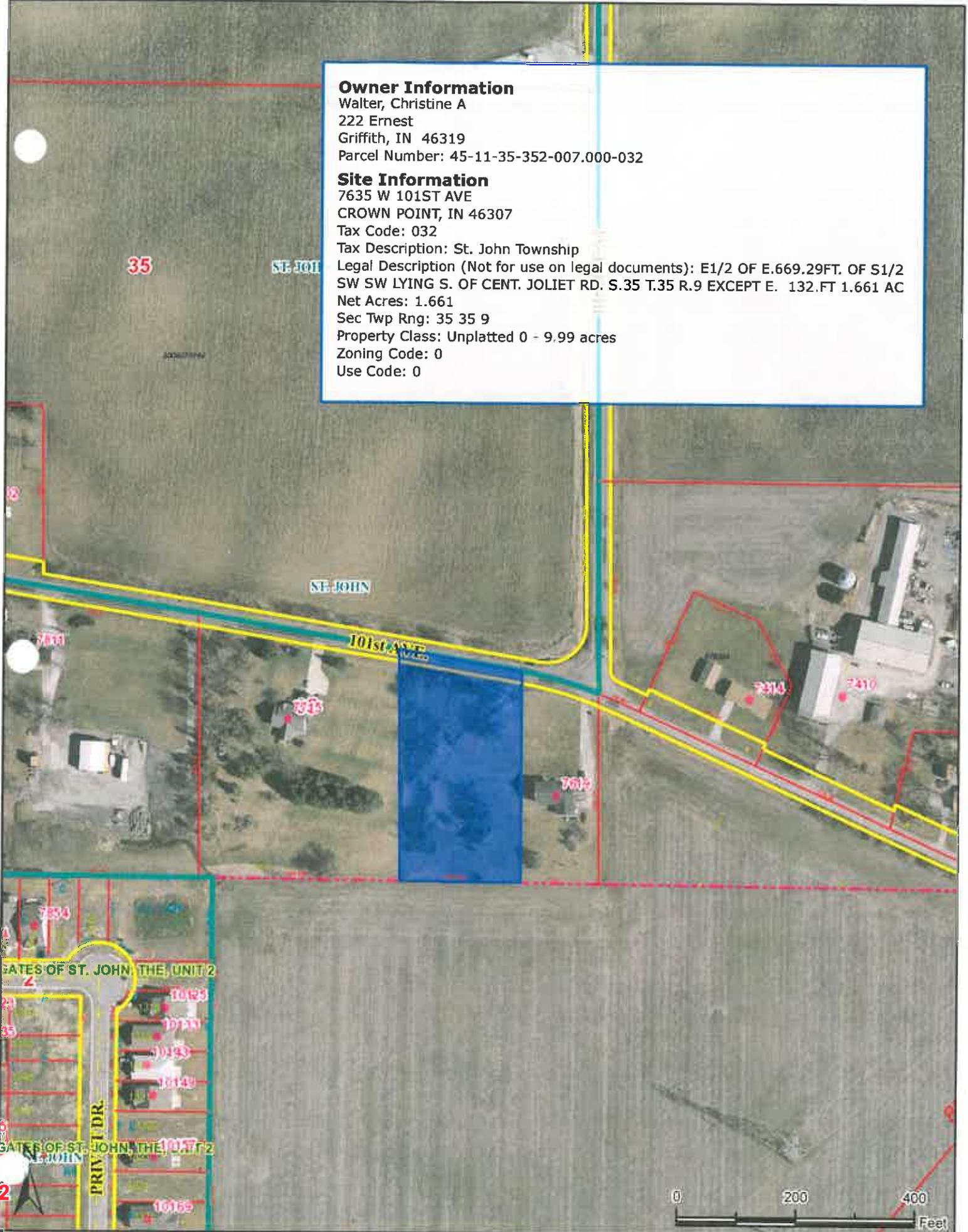


**Owner Information**

Walter, Christine A  
222 Ernest  
Griffith, IN 46319  
Parcel Number: 45-11-35-352-007.000-032

**Site Information**

7635 W 101ST AVE  
CROWN POINT, IN 46307  
Tax Code: 032  
Tax Description: St. John Township  
Legal Description (Not for use on legal documents): E1/2 OF E.669.29FT. OF S1/2 SW SW LYING S. OF CENT. JOLIET RD. S.35 T.35 R.9 EXCEPT E. 132.FT 1.661 AC  
Net Acres: 1.661  
Sec Twp Rng: 35 35 9  
Property Class: Unplatted 0 - 9.99 acres  
Zoning Code: 0  
Use Code: 0

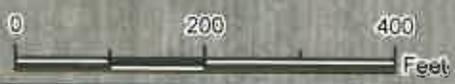
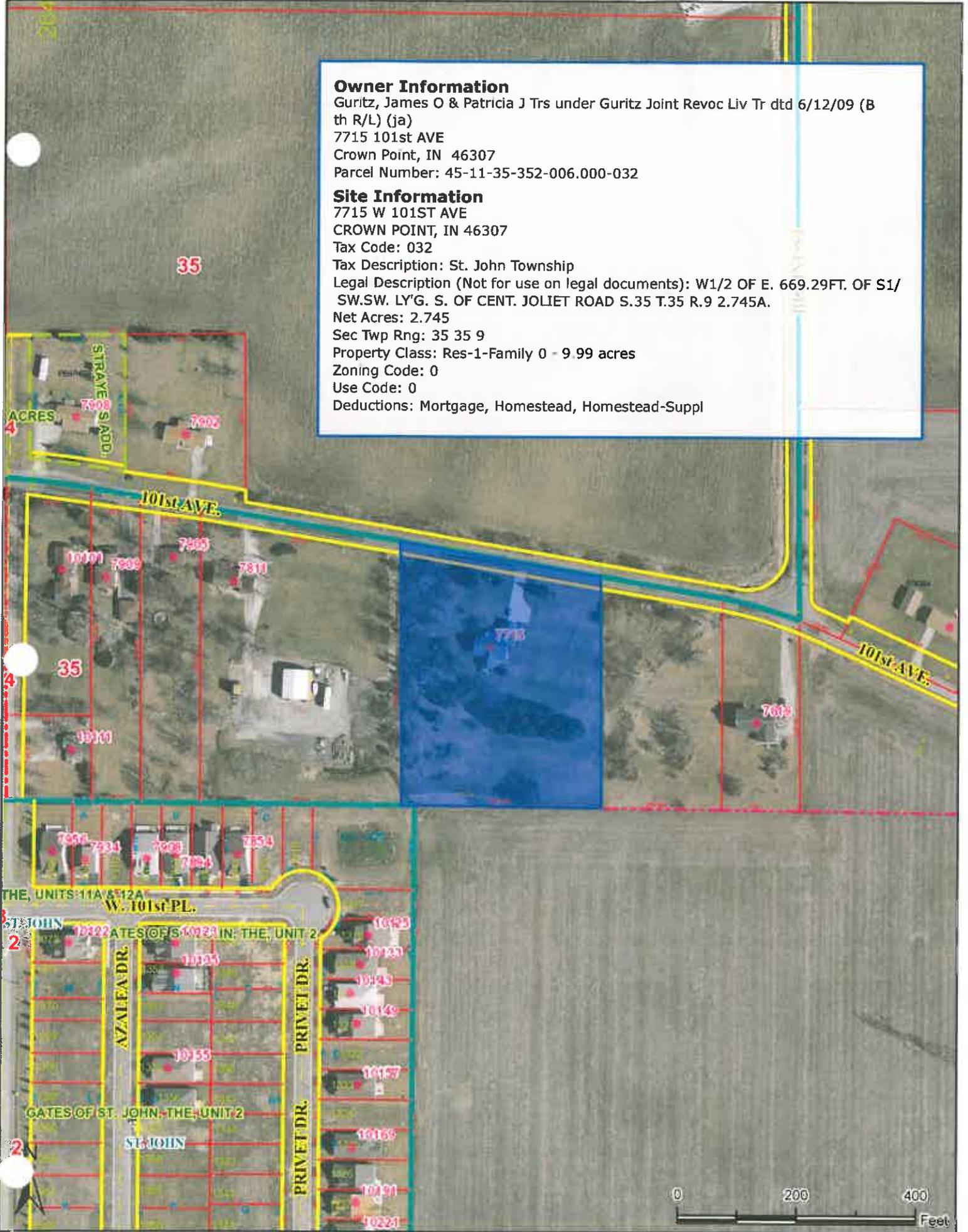


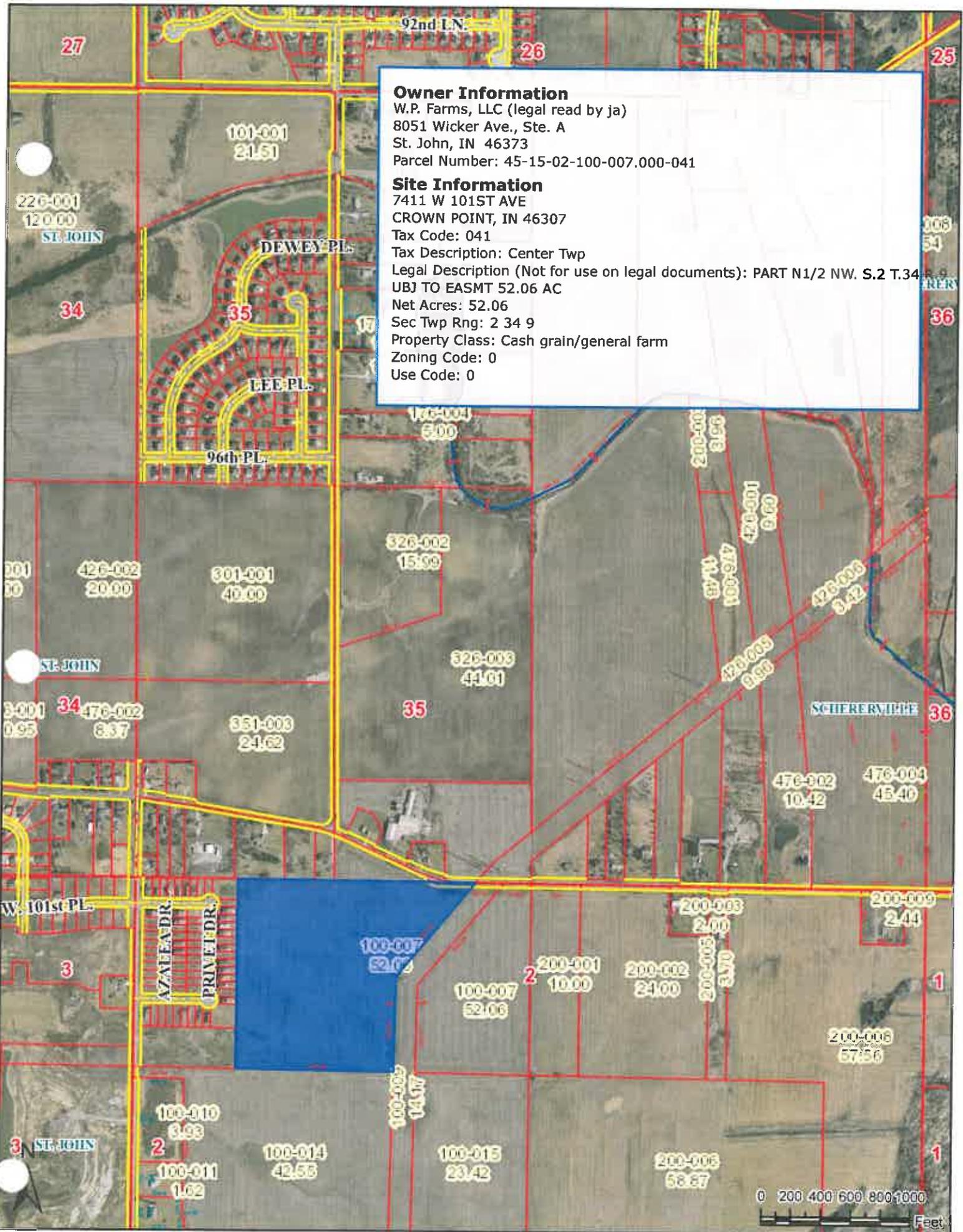
**Owner Information**

Guritz, James O & Patricia J Trs under Guritz Joint Revoc Liv Tr dtd 6/12/09 (B  
th R/L) (ja)  
7715 101st AVE  
Crown Point, IN 46307  
Parcel Number: 45-11-35-352-006.000-032

**Site Information**

7715 W 101ST AVE  
CROWN POINT, IN 46307  
Tax Code: 032  
Tax Description: St. John Township  
Legal Description (Not for use on legal documents): W1/2 OF E. 669.29FT. OF S1/  
SW.SW. LY'G. S. OF CENT. JOLIET ROAD S.35 T.35 R.9 2.745A.  
Net Acres: 2.745  
Sec Twp Rng: 35 35 9  
Property Class: Res-1-Family 0 - 9.99 acres  
Zoning Code: 0  
Use Code: 0  
Deductions: Mortgage, Homestead, Homestead-Suppl





**Owner Information**

W.P. Farms, LLC (legal read by ja)  
 8051 Wicker Ave., Ste. A  
 St. John, IN 46373  
 Parcel Number: 45-15-02-100-007.000-041

**Site Information**

7411 W 101ST AVE  
 CROWN POINT, IN 46307  
 Tax Code: 041  
 Tax Description: Center Twp  
 Legal Description (Not for use on legal documents): PART N1/2 NW, S.2 T.34  
 UBJ TO EASMT 52.06 AC  
 Net Acres: 52.06  
 Sec Twp Rng: 2 34 9  
 Property Class: Cash grain/general farm  
 Zoning Code: 0  
 Use Code: 0



# Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

7-A-7  
9-21-16

*D... Emerson, Jr.*  
County Surveyor

September 15, 2016

To the Following Contractors:

Via Email Notification

Delta Industrial Inc.  
2063 West 1250 South  
Hanna, Indiana 46340  
ATTN: Mike Eaton  
(219) 797-4004  
[michael.eaton@delta3inc.com](mailto:michael.eaton@delta3inc.com)

Ziese and Sons Excavating Inc.  
6929 West 109<sup>th</sup> Avenue  
Crown Point, Indiana 46307  
ATTN: Bryan Schulte  
(219) 663-2625  
[bryans@azcl.biz](mailto:bryans@azcl.biz)

LGS Plumbing, Inc.  
1112 East Summit Street  
Crown Point, Indiana 46307  
ATTN: Larry Smith  
(219) 663-2177  
[lgsplbg@yahoo.com](mailto:lgsplbg@yahoo.com)

**RE: Hawthorne Hills – Storm Sewer Video Inspection  
123<sup>rd</sup> Place and Cedar Lake Road  
Un-incorporated Crown Point, Center Township**

The Lake County Surveyor is requesting proposals for the Hawthorne Hills – Storm Sewer Video Inspection located at 123<sup>rd</sup> Place and Cedar Lake Road, Un-Incorporated Crown Point (See Attached Maps).

The Lake County Surveyor is asking for a Proposal for a video inspection to locate and catalog any obstructions and the condition of the storm sewers and structures. Also indicate the earliest date you can begin work and the time to complete.

Proposals are to be submitted no later than Thursday, September 22, 2015, by 2:00 PM, Local Time to:

Lake County Surveyor's Office  
ATTN: Dan Gossman  
2293 North Main Street  
Crown Point, Indiana 46307

Proposals must be received at the above address in a sealed envelope, labeled Hawthorne Hills – Storm Sewer Video Inspection Project. Proposals received after 2:00 PM will be returned unopened.

The proposals will be opened at the Lake County Surveyor's Office after 2:00 PM Local time on Thursday, September 22, 2015.

APPROVED THIS 21<sup>ST</sup> DAY OF SEPT 2016



AWTHORNE HILLS UNIT 3

CROWN POINT

18

HAWTHORNE HILLS UNIT 3

HENDRICKS CE

Street @  
3574

3504

3404

HAWTHORNE HILLS UNIT 2

HAWTHORNE HILLS UNIT 2

123 84 PL

CEDAR LAKE RD.

18

KUZMA ESTATES

KUZMA ESTATES

KUZMA ESTATES

18

0 200 400 Feet



Manhole 1.

SEE HIVE COVER

15"

750.13 INY.

750.31 INY.

751.10 INY.

0.30%

224.16

222.15

105.07

105.23

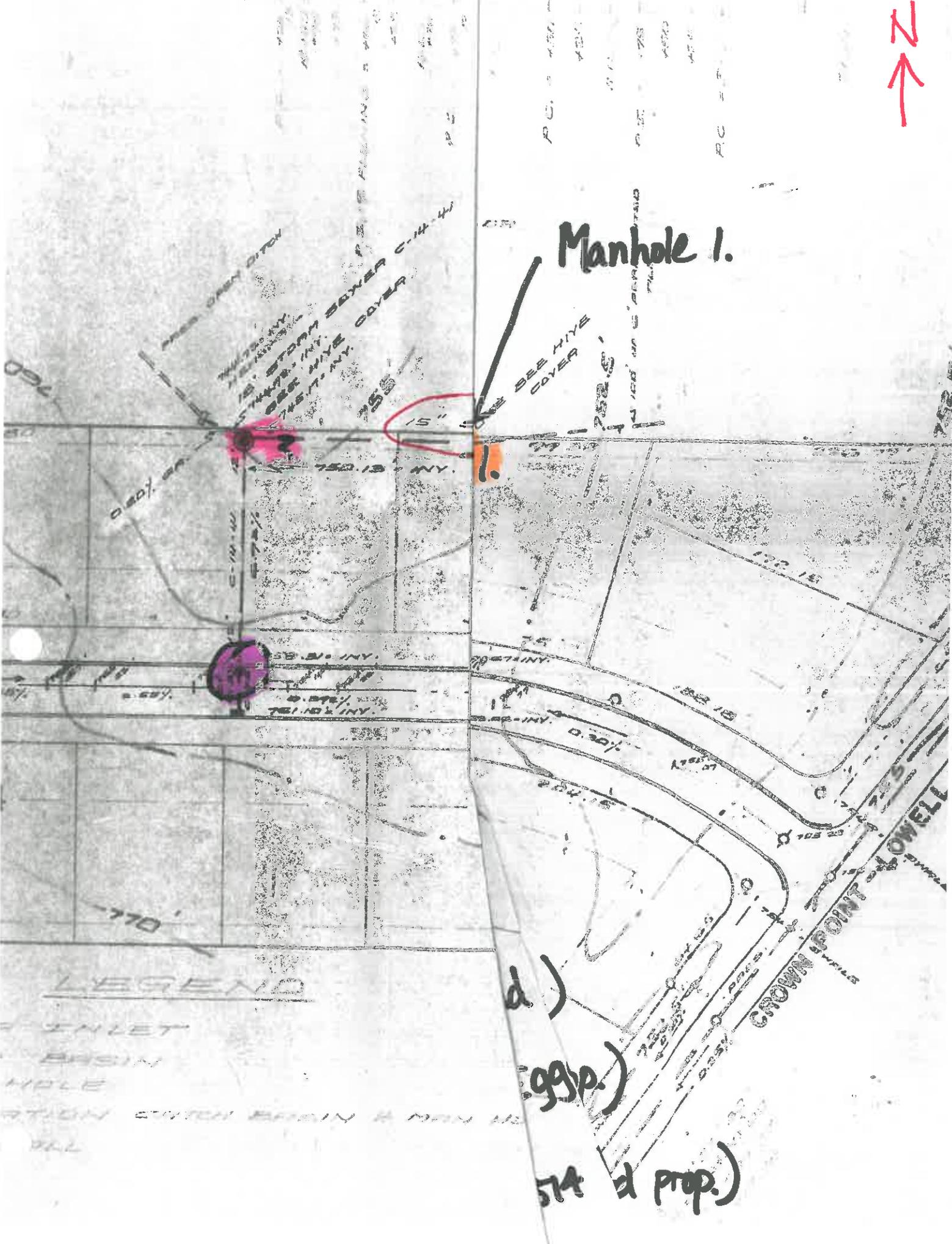
LEGEND

- INLET
- BASIN
- HOLE
- RTION SWITCH BASIN & MAN HOLE
- ALL

d)

9930.)

514 d prop.)



7-B-1  
9-21-16



# Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

Bill Emerson, Jr.  
County Surveyor

September 2, 2016

Bill Emerson, Jr.  
Lake County Surveyor  
2293 N. Main Street  
Crown Point, Indiana 46307

Gerry Scheub  
Lake County Commissioner  
2293 N. Main Street  
Crown Point, IN 46307

RE: 17104 Morse Street (ERT Report # 16-0002)  
Lowell, Cedar Creek Twp.

Dear Gentlemen,

An inspection was conducted Friday September 2, 2016 at 17104 Morse Street in unincorporated Lowell. Myself and Drainage Administrator Dan Gossman met with the property owner Patrick Parks regarding standing water along part of the southern boundary of their property.

Mr. Parks is concerned about the integrity of his fence, which borders the adjacent property to the south (17110 Morse). He says the standing water is causing the posts to become loose and lean. He is also concerned about mosquitoes breeding here. When he asked about spraying for mosquitos here, Mr. Parks was advised that the county Health Dept. oversees this, and that we would relay his request to Commissioner Scheub.

As you can see from the attached photos, the PVC/ corrugated plastic pipe which discharges sump pump water from 17110, keeps this area wet all the time, since it is a low lying area of the yard. The area in question is *not* part of a county Regulated Drain easement, and therefore is not under the jurisdiction of the Lake County Drainage Board. Furthermore, because the water being discharged is clean groundwater, and not sewage, gray water, etc., it is *not* considered an illicit discharge under the County Stormwater Ordinance, which is regulated by the county MS4.

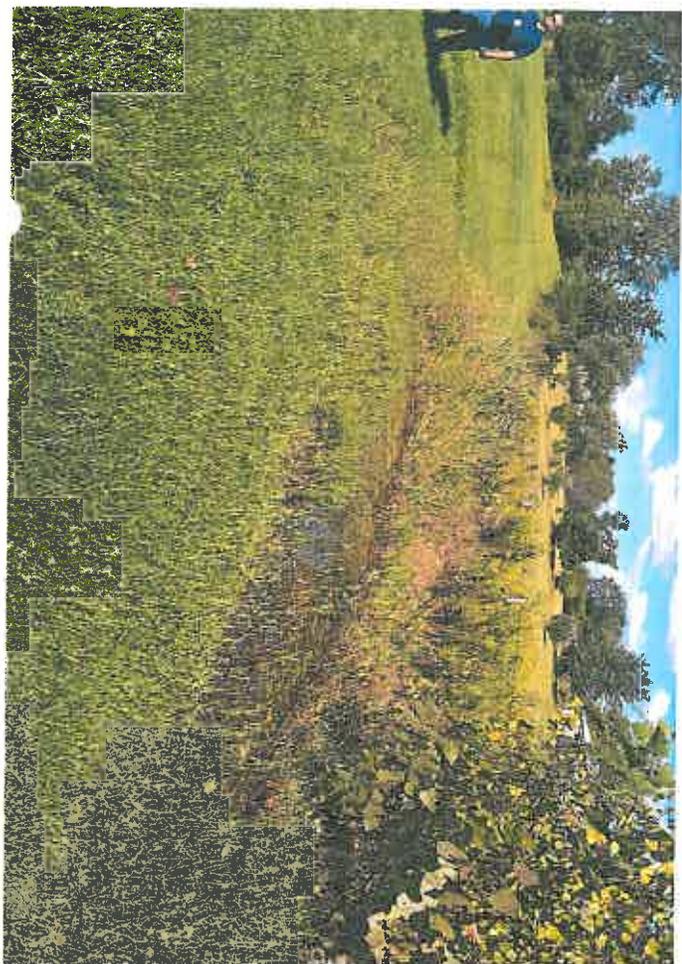
Mr. Parks indicated that this situation has existed for about 13 years, and they were unable to get the neighboring property owner to address it. The property is now vacant, and up for sale, and Mr. Parks would like to have the issue resolved before new owners purchase it. It appears that if the pipe were moved in order to discharge the sump pump water to the roadside ditch instead of this low lying area bordering the two properties, this area would dry up. In my opinion, this is a matter to be resolved by the two property owners.

If you need any further information, please let me know.

Sincerely,

Chris Brown  
MS4 Compliance Inspector

Cc: Dan Gossman, Drainage Administrator  
Rich Budziak, MS4 Coordinator  
Lake County Emergency Management Agency  
Alice Dahl, Cedar Creek Twp. Drainage Advisory Committee Representative  
Lake County Drainage Board/Advisory Committee



7-B-2  
9-21-16



# Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

*Bill Emerson, Jr.*  
*County Surveyor*

September 16, 2016

Bill Emerson, Jr.  
Lake County Surveyor  
2293 N. Main Street  
Crown Point, Indiana 46307

RE: 6914 160<sup>th</sup> Place (Farmington Meadows Subdivision)

After receiving a call regarding flooding from property owner Jeanna Katona of 6914 160<sup>th</sup> Place in unincorporated Lowell, an inspection was made of her property by myself and Drainage Administrator Dan Gossman.

Mrs. Katona complained of flooding in the back of her property and neighboring properties after rain events. She says that during moderate rain events, water which flows through the area overland towards nearby storm sewer inlets, can overtop the existing swale and flow into her house. She also feels there may be issues with the storm sewer system itself.

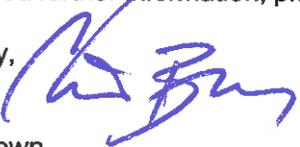
As you can see from the attached photos, no water was present at the time of the inspections, however you can see the sediment residue in the area indicating where the water had been.

We also checked the stormwater inlets, (see photos), which at the time of the inspection were not full of water, but which did have some pretty significant erosion around the structure, which will need to be addressed.

Finally, I inspected the ditch southeast of Mrs. Katonas property, which is where the storm sewer pipes outlet from the sub. The water level in the ditch was relatively low at the time of inspection, and did not appear to be obstructed.

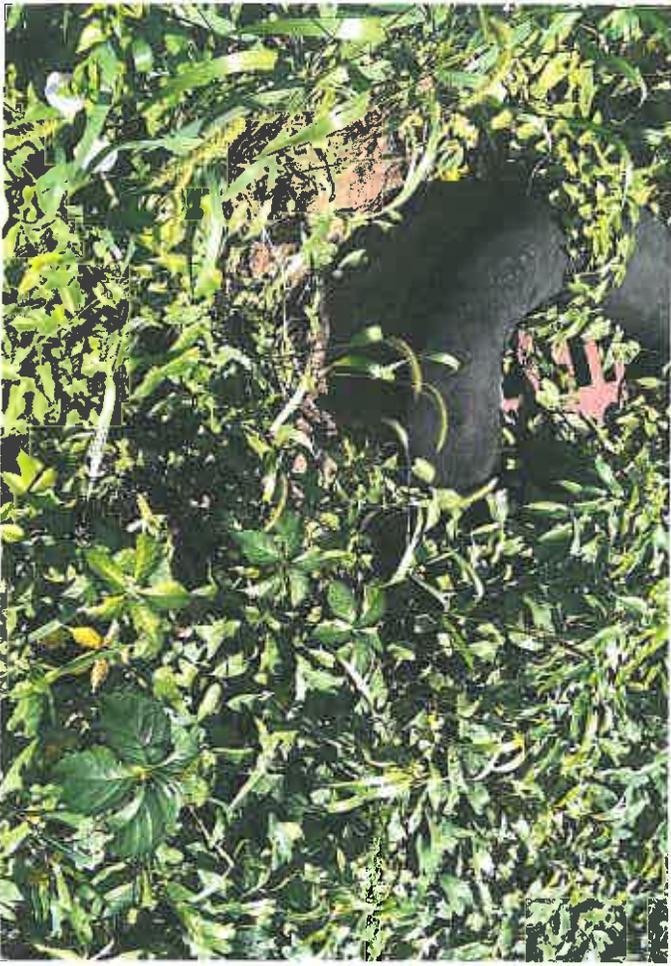
We are reviewing the drainage and storm sewer plans for this sub, and will continue to investigate the situation for possible solutions to these issues.

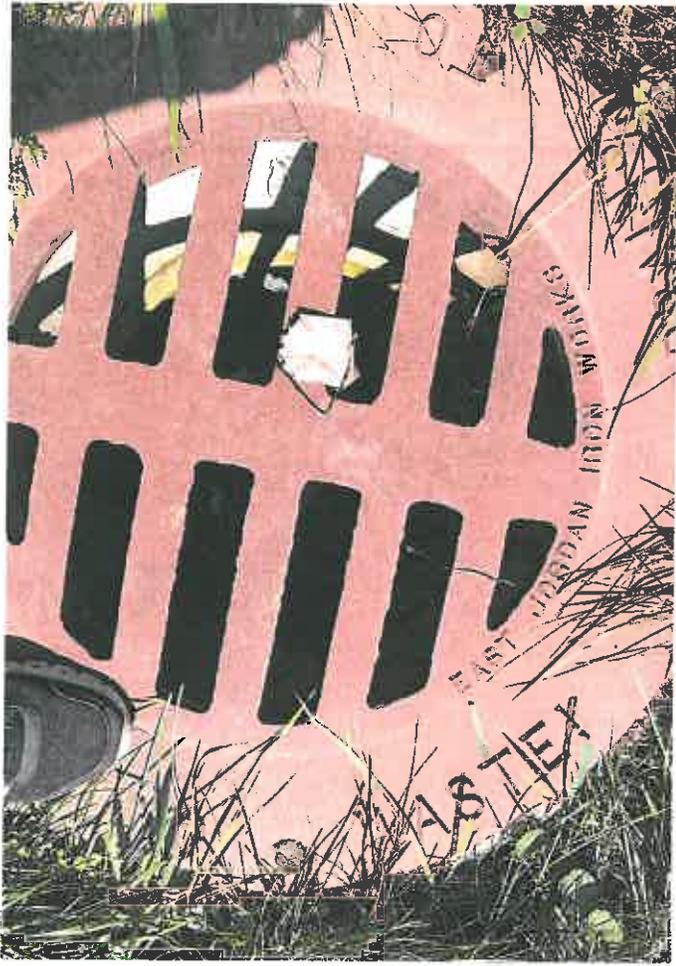
If you need further information, please let me know.

Sincerely, 

Chris Brown  
MS4 Compliance Inspector

Cc: Dan Gossman, Drainage Administrator  
Rich Budziak, MS4 Coordinator  
Alice Dahl, Cedar Creek Twp. Drainage Advisory committee Representative  
Lake County Drainage Board/ Advisory Committee







10-A-1  
9-21-16



# Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

Bill Emerson, Jr.  
County Surveyor

August 25, 2016

To the Following Contractors:

JWL

Via Email Notification

Delta III Inc. *KCH*  
2063 West 1250 South  
Hanna, Indiana 46340  
ATTN: Mike Eaton  
(219) 797-4004  
delta3bill@csinet.net

Gariup Construction *JWL*  
3965 Harrison Street  
Gary, Indiana 46401  
ATTN: Christine Johnsen  
(219) 887-5233  
christine.johnsen@gariup.com

Ellas Construction Co., LLC  
9137 Elmwood Drive  
Munster, Indiana 46321 *MS*  
ATTN: John Eliopoulos  
(219) 838-3333  
john@ellasconstruction.com

Austgen Equipment *JD*  
11309 Broadway  
Crown Point, Indiana 46307  
ATTN: John Dumbky  
(219) 690-1850  
john@austgenequipment.com

~~Brooker Contracting, LLC  
17316 Camelot Drive  
Lowell, Indiana 46356  
ATTN: Jim Brooker  
(219) 671-6312  
jimbrooker@brookercontracting.com~~

R.A. Oros, Inc. *SP*  
8244 Greenwood Avenue  
Munster, Indiana 46321  
ATTN: Emil Poppa  
(219) 838-4942  
elpop@comcast.net

RE: **2016 TURKEY CREEK BANK STABILIZATION**  
**Joliet Street to James Wittchen Drive**  
**Schererville, St John Twp.**

The Lake County Surveyor has been requested to solicit proposals by the Lake County Drainage Board for the 2016 Turkey Creek Bank Stabilization - Joliet Street to James Wittchen Drive, Schererville, St John Twp. Therefore the Lake County Surveyor has scheduled a **Mandatory Meeting for Wednesday, August 31, 2016, at 2:00 PM Local Time at the project site. Your presence or a representative of your company is Mandatory in order to submit a proposal.**

The Lake County Surveyor is asking for a Proposal to clear and snag, slope repair and place rip-rap.

Please note proposals will only be accepted from contractors attending the Mandatory meeting referenced above. Also indicate the earliest date you can begin work and the time to complete.

Proposals are to be submitted no later than Wednesday, September 21, 2016, by 9:00AM, Local Time to:

Lake County Surveyor's Office  
ATTN: Dan Gossman  
2293 North Main Street  
Crown Point, Indiana 46307

Proposals must be received at the above address in a sealed envelope, labeled 2016 Turkey Creek Bank Stabilization Project. Proposals received after 9:00 AM will be returned unopened.

The proposals will be opened at the Lake County Drainage Board meeting on Wednesday, September 21, 2016.

PLANS & SPECIFICATIONS FOR  
**2016 Turkey Creek Bank Stabilization,  
Joliet Street to James Wittchen Drive**  
TOWN OF SCHERERVILLE, ST JOHN TOWNSHIP  
LITTLE CALUMET RIVER WATERSHED

Prepared For  
**Lake County Drainage Board**



**LAKE COUNTY SURVEYOR – BILL EMERSON, JR.**



Prepared By  
The Office of Lake County Surveyor

August 15, 2016

**2016 TURKEY CREEK BANK STABILIZATION**  
**Joliet St to James Wittchen Dr, Schererville, St John Twp.**

**SPECIAL INSTRUCTIONS TO BIDDERS**

**A. GENERAL INFORMATION:**

1. It is the intention of the Lake County Drainage Board, hereinafter referred to as the Board, to secure bids for maintenance work to be performed on TURKEY CREEK BANK STABILIZATION hereinafter referred to as the Project, as identified and described herein and in the plans and specifications prepared by the Lake County Surveyor's office, hereinafter referred to as the Manager.
2. All bids for the proposed work shall be submitted on a unit price or lump sum basis, as applicable, and as set forth on the bid proposal form attached herein, all in accordance with the project documents.
3. The Board intends to review all bids for the project and upon final review and determination, award the bid to the successful bidder. Among other considerations, the successful bidder will be determined by the lowest most responsive and responsible overall total bid as provided in the bid proposal form attached herein. The total quantity of work to be awarded by the Board will be based on the total dollars available at the time of contract award and the respective applicable unit prices and/or lump sums of the successful bidder.
4. The bid proposal form to the Board consisting of 2 pages, as set out hereinafter, shall be attached and submitted with Bid Form 96 and Form 95.

**A. BIDDERS INFORMATION**

1. It is the responsibility of all project bidders to review all bid documents to ascertain their effect on each bid.
2. It is the responsibility of all project bidders to carefully examine the project site and fully inform himself/herself with the limitations and conditions related to the work covered by his/her bid, and shall include in his/her bid a sum to cover the cost of all such items. It is the purpose and intent of the contract documents that a fully complete job be accomplished. It is the responsibility of each bidder to include all costs necessary to provide all labor, materials and equipment for the portion of the work bid upon, including incidentals, whether or not specifically called for in the project plans and specifications. Each bidder by making his/her bid represents that he/she has read and understands the bid documents and represents that he/she has visited the site and has familiarized himself/herself with all the conditions under which the work is to be performed.
3. It is the responsibility of all bidders to contact all utility companies and public and/or private agencies to become familiar with the specific locations of all existing utilities and systems that will affect the work. The successful bidder shall protect all such systems and utilities, including all other improvements which may exist within or adjacent to the work area during the prosecution of the work. All existing improvements, utilities and systems that may be

damaged during construction shall be repaired and/or replaced to a condition at least equal to that prior to such damage at no additional expense to the Board. All such companies shall be notified prior to commencement of the work in order that all such lines be located and identified by the affected companies.

4. All inquiries as to the documents, interpretations, substitutions, conflicts, discrepancies, omissions and questions shall be referred to the Manager, representative of the Board, who in turn will refer same to the Board.
5. All bidders in doubt as to the true meaning of any part of the project documents shall submit to the Manager, not less than seven (7) days before the bid deadline, a written request for interpretation and clarification.
6. Bidders are responsible for acquiring any and all issued addenda in time to incorporate them into their bid. Each bidder shall enumerate all addenda he has received in his bid.
7. All bidders and their sub-contractors, if any, shall furnish proof, satisfactory to the Board that they are in good standing and are authorized to do business in the State of Indiana and that they are licensed to perform the work within the County of Lake. All bidders shall hold a General Contractor License from the County of Lake. All bidders shall furnish a list of their sub-contractors, if any, including name, address and telephone numbers.
8. The County's affirmative action program as adopted by the County of Lake, dated May 31, 1977, a copy of which is on file in the Lake County Auditor's office and the office of the Board of Commissioners of the County of Lake, is a condition of the project documents. The bidder shall submit, together with his/her bid, in writing, his/her affidavit, that he/she will comply with the County's affirmative action program.
9. It is recommended that all bidders attend any and all pre-bid conferences that may be scheduled by the Board.
10. The Lake County Surveyor, or their designated agents, will perform project supervision and periodic inspections to determine compliance with all project documents, percentages or inspections will include measurements and elevations of the completed work for compliance with the plans and specifications prior to payment recommendations to the Board.
11. The Contractor shall be permitted to submit claims for payment on a monthly basis as the work progresses, subject to a fifteen percent (15%) retainage, all as approved by the Lake County Surveyor or their designated agents. Fifteen percent (15%) of the completed value of the work shall be withheld by the Board for a period of sixty (60) days after the completion of the work and its acceptance by the Lake County Surveyor and the Engineer for the purpose of securing payment of suppliers, laborers and subcontractors, if any.

The Contractor shall be required to furnish a sworn statement of all indebtedness for labor and materials furnished, used or extended for said construction, the amount of due and to become due to each subcontractor and material supplier before issuance of any payment, and final waiver of lien and an affidavit showing all bills, on the issuance of the final payment.

Upon certifications by the Lake County Surveyor or their designated agents, the Board shall pay to the Contractor, on account of the contract, the value of labor and materials incorporated into the work.

12. A bid security in the form of a certified check/cashier's check or a bid bond from an acceptable surety made payable to the Board shall accompany each bid. The bid security shall be in the penal amount of five percent (5%) of the total bid. Bid security shall be forfeited if the bid is withdrawn after closing time on the date for receiving bids. Out of state bidders must submit a certified check of ten percent (10%) of the total bid made payable to the Board.

Upon execution of the contract, the successful bidder shall give to the Board a bond payable to the Board, in an amount fixed by the Board but not less than the amount of the bid, and with a corporate surety licensed to do business in Indiana. The bond must be conditioned on the faithful performance of the contract and the payment of all expenses and damages incurred under the contract, including payment of all suppliers, laborers, and subcontractors. However, in lieu of a corporate surety bond, the Board may accept:

- (1) a cash bond;
- (2) a property bond; or
- (3) a bond from a sufficiently financed private bonding company.

13. All Contractors, including sub-contractors, shall carry full insurance coverage and certificates of insurance shall be delivered to the Board, upon signing of the contract.

- a. Workmen's Compensation, as required by applicable Federal and State laws.
- b. Contractor's Liability, including contractual liability, form of insurance shall be comprehensive general liability and comprehensive automobile liability \$500,000 CSL; for bodily injury, property damage and personal injury, including complete operations broad form; bodily injury and property damage, automobile liability, owned, non-owned and hired.
- c. In addition to the above, the Contractor shall provide operations and products liability, XCU coverage and \$1,000,000 umbrella liability.
- d. At all times during the progress of the work, the Contractor shall maintain such insurance as will protect and save harmless the Board, and its agents, from claims under the Workmen's Compensation Act, from any and all other claims for damages for property damage, personal injury and/or death and patent infringement, which may arise from operation under the contract documents, whether such act or omission be by itself or by an employee or sub-contractor or anyone directly or indirectly employed by either of them; and certificates of such insurance as required by the project documents shall be filed with the Board.
- e. Should the Board suffer any damage, cost or expense, including attorney's fees, in any manner, because of any wrongful act or negligence of the Contractor, or anyone employed by it or a subcontractor or the assertion of any claim of whatever nature which arises from operation under the contract documents, then the Contractor shall reimburse the Board for any such damage and all reasonable attorney fees and expenses related to such claim and/or reimbursement thereto, all without relief from validation and appraisal laws.

B. RIGHT OF THE BOARD

1. The Board reserves the right to issue addenda changing, altering or supplementing the contract documents, at any time prior to the bid deadline.
2. The Board reserves the right to reject any or all bids and to waive any information or irregularity in any bid accepted.
3. The Board reserves the right to approve or reject any sub-contractor submitted by the bidders.
4. The Board reserves the right to award all or individual projects within the scope of work to comply with available funds.

APPROVED THIS 17 DAY OF AUGUST, 2016

LAKE COUNTY DRAINAGE BOARD



\_\_\_\_\_  
GERRY J. SCHEUB, CHAIRMAN



\_\_\_\_\_  
MICHAEL C. REPAY, MEMBER



\_\_\_\_\_  
KYLE W. ALLEN, SR., MEMBER

## GENERAL INFORMATION

### A. INDR. COE AND STATE PERMITS

The Board will procure all necessary permits from the Indiana Department of Natural Resources, the Army Corps of Engineers and the Indiana Department of Environmental Management for the performance of the work. All such permits are considered part of the project documents and all work shall be performed in strict compliance with all provisions and conditions therein. In the event discrepancies exist between the project documents and the provisions and conditions of such permits, the Contractor shall immediately notify the Lake County Surveyor or their designated agents to resolve any such discrepancy.

### B. CONSTRUCTION METHODS AND STANDARDS

All construction methods, standards and specifications, as adopted by the Board shall govern the performance of the work unless otherwise specified in the project documents.

### C. WORK WITHIN EASEMENTS

All work shall be performed within the limits of the existing regulated drain easement for TURKEY CREEK BANK STABILIZATION, and within other access and work easements acquired by the Board as otherwise specified herein.

### D. MAINTENANCE OF DRAINWAYS

All construction shall be performed in such a manner that will not interfere with existing drainage of the areas adjacent to the project. All work shall be performed in such a manner that will ensure proper drainage.

### E. AUTHORIZATION TO PROCEED

No work shall be performed prior to receipt of "Authorization to Proceed" notification from the Lake County Surveyor.

### F. CONTRACTOR'S SCHEDULE

The Contractor will be requested to attend a pre-construction conference to be scheduled by the Lake County Surveyor at which time the Contractor will be required to submit a construction schedule to the Lake County Surveyor prior to commencement of the work.

**2016 TURKEY CREEK BANK STABILIZATION  
Joliet St to James Wittchen Dr, Schererville, St John Twp.**

**TECHNICAL SPECIFICATIONS**

**A. GENERAL**

1. The Contractor shall remove any/all deleterious material from the ditch area and dispose same in an approved site.
2. It shall be the responsibility of the Contractor to fine grade the site to match the existing ground elevations.
3. Excess material generated shall be placed in sites as designated by the property owner.
4. Mirafi 180N 8oz. non-woven geotextile fabric AASHTO MZ88-96 Spec for sub surface drainage Class I and separation Class I or an equal material approved by the BOARD.
5. Single Net Erosion Control Blankets shall be the North American Green S75, or an equivalent approved by the BOARD. The S75 shall meet Type 2.C specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) FP-03 Section 713.17
6. The Contractor will furnish and install any/all erosion protection devices in accordance with IDEM's/SCS Rule No. 5 as applicable for projects of this nature.
7. Any haul routes/roads shall be approved by the Town of Schererville and Lake County Surveyor. All disturbed areas (routes) shall be restored to prior conditions and seeded, mulched and fertilized in accordance with INDOT's standard seeding specification. Routing may be over subgrade roads with shallow utilities, i.e., existing sanitary/storm sewers, water mains/services, gas and/or telephone cables. It shall be the responsibility of the contractor to protect/maintain same. Any damages are the responsibility of the contractor.
8. All work described for this project is to be performed in a manner that does not adversely affect adjoining landowners' property.

**BID PROPOSAL**  
**For**  
**2016 TURKEY CREEK BANK STABILIZATION**  
**Joliet St to James Wittchen Dr, Schererville, St John Twp.**

The undersigned, having familiarized (himself/herself/themselves) with the plans and specifications and on-site conditions which comprise the following:

Documents for the project known as the 2016 TURKEY CREEK BANK STABILIZATION  
 Joliet St to James Wittchen Dr, Schererville, St John Twp.

The undersigned has carefully inspected the site of the proposed work and can perform the various items of work for the unit prices/lump sums stipulated. All prices listed include any incidental work that may be necessary to complete the project in accordance with the provisions of the plans and specifications, as may be amended. Items listed below are shown and appropriately labeled on the plans.

ITEM NO. 1

Clear/snag all trees, debris, trash, vegetation from ditch bottom and both sides.  
 A total length of 625 linear feet at \$ \_\_\_\_\_/l.f. \$ \_\_\_\_\_

ITEM NO. 2

Apply 5x 90 revetment rip rap.  
 Total of 1,200 tons at \$ \_\_\_\_\_/ton \$ \_\_\_\_\_

ITEM NO. 3

Apply Mirafi 180N 8oz. non-woven geotextile fabric AASHTO MZ88-96 Spec for sub surface drainage Class I and separation Class I or an approved equal material.  
 Total of 1400 square yards at \$ \_\_\_\_\_/s.y. \$ \_\_\_\_\_

ITEM NO. 4

Apply North American Green S75, or an approved equivalent.  
 Total of 1,400 square yards at \$ \_\_\_\_\_/s.y. \$ \_\_\_\_\_

ITEM NO. 5

Mulch and seed all disturbed areas (INDOT Spec.)  
 Total of 0.29 acres at \$ \_\_\_\_\_/ac. \$ \_\_\_\_\_

ITEM NO. 6

Apply Silt Fence  
 A total length of 625 linear feet at \$ \_\_\_\_\_/lf \$ \_\_\_\_\_

ITEM NO. 7

Incidentals including mobilization and demobilization.  
 Lump Sum \$ \_\_\_\_\_

**GRAND TOTAL:** \$ \_\_\_\_\_

**BID PROPOSAL**  
**2016 TURKEY CREEK BANK STABILIZATION**  
**Joliet St to James Wittchen Dr, Schererville, St John Twp.**

\_\_\_\_\_ CAN BEGIN THE WORK IN \_\_\_\_\_ DAYS UPON  
[Company Name]  
RECEIPT OF AUTHORIZATION TO COMMENCE THE WORK FROM THE LAKE COUNTY SURVEYOR,  
WHICH INCLUDES MATERIAL DELIVERY TIME AND COMPLETE THE WORK WITHIN \_\_\_\_\_  
DAYS, SUBJECT TO WEATHER CONDITIONS.

BID PROPOSAL FORM SUBMITTED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2016.

BY: \_\_\_\_\_  
Company Name  
\_\_\_\_\_  
Authorize Signature  
\_\_\_\_\_  
Printed Name  
\_\_\_\_\_  
Address  
\_\_\_\_\_  
Phone No.                      Fax No.  
\_\_\_\_\_  
Email

10-A-1  
9-21-16



# Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

**Bill Emerson, Jr.**  
County Surveyor

September 2, 2016

## **ADDENDUM NO. 1**

### **2016 TURKEY CREEK – BANK STABILIZATION Joliet Street to James Whittchen Drive, Schererville, St John Twp.**

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents as noted below:

1. PRE-BID MEETING MINUTES. See attached minutes for the pre-bid meeting held on August 31, 2016, at 1:30 P.M. outlining additional information and requirements for the project.
2. TECHNICAL SPECIFICATIONS. See attached additional Specifications for the following:
  - a. Riprap installation as required by the Indiana Drainage Handbook
  - b. Erosion Control Blanket installation as required by the Indiana Drainage Handbook
  - c. Mulch and Seed as required by the Indiana Drainage Handbook
  - d. Silt Fence installation as required by the Indiana Drainage Handbook

If you have any additional questions, submit all questions in writing to the Lake County Surveyor's office prior to **4:00 p.m. local time, September 16, 2016**. A written response will be emailed to all contractors eligible for submitting a proposal. No questions will be answered by telephone. Questions shall be submitted via email ([gossmdv@lakecountyin.org](mailto:gossmdv@lakecountyin.org)).



*Bill Emerson, Jr.*  
*County Surveyor*

# *Office of the Lake County Surveyor*

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

## **Pre-Bid Meeting Minutes 2016 Turkey Creek – Bank Stabilization Joliet Street to James Wittchen Drive Schererville, St John Twp., Lake County, Indiana**

Issue Date: September 2, 2016

Prepared by: Bill Emerson, Jr., Lake County Surveyor  
Dan Gossman, Drainage Administrator

Attendees: Bill Emerson, Jr., Lake County Surveyor  
Dan Gossman, Drainage Administrator  
Tom Regalado, Asst Drainage Admn  
Jeff Huet, Schererville Public Works Director  
Contractors - See attached Sign-in Sheet

The Mandatory Pre-bid meeting for the 2016 Turkey Creek – Bank Stabilization was held on August 31, 2016 at 1:30 p.m. (CST) at the project site.

1. The attached sign-in sheet was distributed.
2. Lake County Surveyor Bill Emerson, Jr., Drainage Administrator Dan Gossman and Schererville Public Works Director Jeff Huet conducted the meeting.
3. Contractors must familiarize themselves with the project and are encouraged to revisit the jobsite.
4. You **MUST** be a licensed general contractor in Lake County and licensed in the Town of Schererville. The Schererville Public Works Director is Jeff Huet, and he can be contacted via email ([jhuet@schererville.org](mailto:jhuet@schererville.org)).
5. Tree removal: Tree cutting will be required for the entire side slopes only where necessary to maneuver machinery (stumps should be cut flush with the ground and treated to prevent regrowth). Preserve trees where possible.
6. Gabion Wall: Repair existing gabion wall in place.
7. The contractor must coordinate with the property owners.
8. Project Bid Date: September 21, 2016 at 9 A.M. CST.



# Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

Bill Emerson, Jr.  
County Surveyor

August 25, 2016

To the Following Contractors:

*JWL*

Via Email Notification

Delta III Inc. *KCH*  
2063 West 1250 South  
Hanna, Indiana 46340  
ATTN: Mike Eaton  
(219) 797-4004  
delta3bill@csinet.net

Gariup Construction  
3965 Harrison Street  
Gary, Indiana 46401  
ATTN: Christine Johnsen  
(219) 887-5233  
christine.johnsen@gariup.com

Ellas Construction Co., LLC  
9137 Elmwood Drive  
Munster, Indiana 46321 *M<sup>s</sup>*  
ATTN: John Eliopoulos  
(219) 838-3333  
john@ellasconstruction.com

Austgen Equipment *JD*  
11309 Broadway  
Crown Point, Indiana 46307  
ATTN: John Dumsky  
(219) 690-1850  
john@austgenequipment.com

~~Brooker Contracting, LLC  
17316 Camelot Drive  
Lowell, Indiana 46356  
ATTN: Jim Brooker  
(219) 671-6312  
jimbrooker@brookercontracting.com~~

R.A. Oros, Inc. *SP*  
8244 Greenwood Avenue  
Munster, Indiana 46321  
ATTN: Emil Poppa  
(219) 838-4942  
elpop@comcast.net

RE: **2016 TURKEY CREEK BANK STABILIZATION**  
**Joliet Street to James Wittchen Drive**  
**Schererville, St John Twp.**

The Lake County Surveyor has been requested to solicit proposals by the Lake County Drainage Board for the 2016 Turkey Creek Bank Stabilization - Joliet Street to James Wittchen Drive, Schererville, St John Twp. Therefore the Lake County Surveyor has scheduled a **Mandatory Meeting for Wednesday, August 31, 2016, at 2:00 PM Local Time at the project site. Your presence or a representative of your company is Mandatory in order to submit a proposal.**

The Lake County Surveyor is asking for a Proposal to clear and snag, slope repair and place rip-rap.

Please note proposals will only be accepted from contractors attending the Mandatory meeting referenced above. Also indicate the earliest date you can begin work and the time to complete.

Proposals are to be submitted no later than **Wednesday, September 21, 2016, by 9:00AM, Local Time to:**

Lake County Surveyor's Office  
ATTN: Dan Gossman  
2293 North Main Street  
Crown Point, Indiana 46307

Proposals must be received at the above address in a sealed envelope, labeled 2016 Turkey Creek Bank Stabilization Project. Proposals received after 9:00 AM will be returned unopened.

The proposals will be opened at the Lake County Drainage Board meeting on Wednesday, September 21, 2016.



*Bill Emerson, Jr.*  
*County Surveyor*

# *Office of the Lake County Surveyor*

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

## **2016 Turkey Creek – Bank Stabilization Technical Specifications**

**PRACTICE 510  
STONE RIPRAP**

**DESCRIPTION** ● Covering of a portion of a channel bank with a layer of stone that approximates the natural slope of the channel bank. (Note: This practice is also included in the Indiana Erosion Control Handbook.)



**Exhibit 510a:** Stone Riprap (Source: North Carolina Erosion Control Manual)

<b>PURPOSE</b>	● To protect streambanks from the erosive forces of flowing water.
<b>WHERE APPLICABLE</b>	<ul style="list-style-type: none"> <li>● On small to medium sized channels and on all character types.</li> <li>● Generally applicable where flow velocities exceed 6 ft/sec or where vegetative streambank protection is inappropriate.</li> <li>● Shaded areas.</li> <li>● Streams where water levels fluctuate.</li> <li>● Actively eroding banks usually along channel curves or wherever it is desirable to reduce the energy of the water.</li> </ul>
<b>ADVANTAGES</b>	<ul style="list-style-type: none"> <li>● Relatively inexpensive, especially compared to other structural methods such as walls.</li> <li>● Flexible and resistant to scour.</li> <li>● Allows for water percolation.</li> </ul>
<b>CONSTRAINTS</b>	<ul style="list-style-type: none"> <li>● Available stone must be able to resist the force of high velocity water flows.</li> <li>● Not recommended on steep slopes or areas where slope cannot be regraded to 2:1 (1V:2H) or flatter.</li> <li>● Hand-placed riprap is labor intensive.</li> <li>● Flooding may wash riprap into stream.</li> </ul>

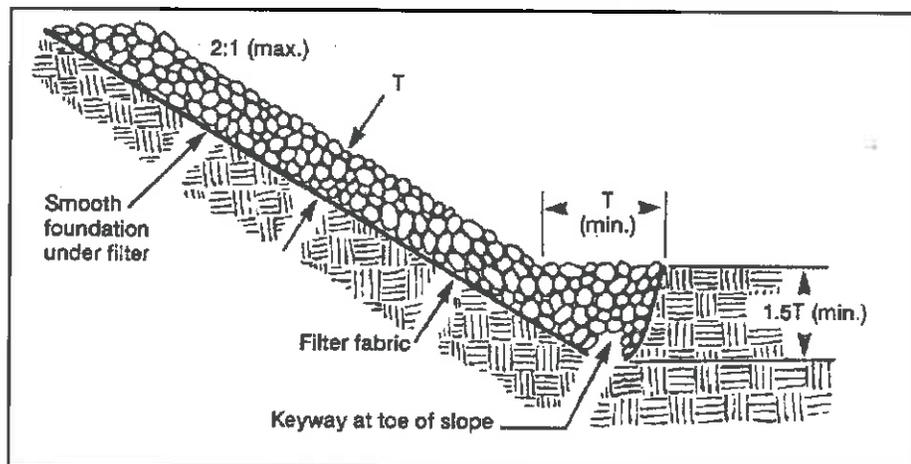
## DESIGN AND CONSTRUCTION GUIDELINES

### Materials

- Hard, angular and weather-resistant stone having specific gravity of at least 2.5.
- Where available, use local stone. Local stone can often be obtained at lower cost and it also blends better into the existing streambank environment.
- 50% of stone (by weight) must be larger than specified  $d_{50}$  and no more than 15% of the pieces (by weight) should be less than 3 inches.
- Geotextile fabric or sand/gravel layer should be used for stabilization under all permanent riprap installations.

### Installation

- Remove brush, trees, stumps and other debris.
- Excavate only deep enough for filter and riprap.
- Compact any fill material to density of surrounding natural soil.



**Exhibit 510b:** Construction of a riprap bank with toe protection (Source: Indiana Erosion Control Handbook)

- Cut keyway at base of slope to reinforce the toe; keyway depth should be  $1\frac{1}{2}$  times the design thickness of the riprap and extend a horizontal distance equal to the design thickness.
- Place geotextile fabric. If using sand/gravel filter, spread the well-graded aggregate in a uniform layer at least 6 inches thick; if 2 or more layers are required, place the layer of smaller gradation first and avoid mixing the layers.
- Add riprap to full thickness in 1 operation.
- Place smaller rock in voids to form a dense, uniform, well-graded mass. Some hand placement of material will most likely be necessary.
- Blend the riprap surface smoothly with the surrounding area to eliminate protrusions or overfalls.
- Riprap may be either hand-placed or dumped.

**Special Considerations**

- Use the peak 10-year storm discharge for computing the minimum expected (design) velocity.
- Foundation toe must be properly reinforced to prevent undercutting or slumping.
- Slopes steeper than 2:1 (1V:2H) should be flattened so stone material will not become displaced.
- Riprap must be properly graded to prevent stone movement and erosion of the foundation.
- Compact the slopes before placing riprap or stone settlement and displacement may occur.
- Extend riprap sections the entire length between well-stabilized points of the stream channel.
- Riprap used must be of large enough size and extend at least 12 inches below normal water level to provide habitat for aquatic organisms in the voids
- May secure toe using A-Jacks (See Practice 509)

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**MAINTENANCE**

- Inspect periodically for displaced stone material, slumping and erosion at edges (especially downstream or downslope). Properly designed and installed riprap usually requires very little maintenance if promptly repaired.

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**REFERENCES**

**Related Practices**

- Practice 501 Live Stakes.
- Practice 507 Live Cribwalls.
- Practice 508 Lunkers.
- Practice 512 Gabion Retaining Wall.
- Other Combined Practices.

**Other Sources of Information**

- Indiana Erosion Control Handbook.
- North Carolina Erosion Control Manual.
- Pennsylvania Streambank Stabilization Guide.
- COE Streambank Guidelines.

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Last Print/Revision Date: October 13, 1996

<p><b>PRACTICE 1104</b></p> <p><b>EROSION CONTROL BLANKET</b></p>
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**DESCRIPTION**

- Biodegradable organic or synthetic mulch incorporated into a polypropylene or similarly netting material. (Note: this practice is also included in the Indiana Erosion Control Handbook.)



Exhibit 1104a: Erosion Control Blanket (Source: CBBEL Files)

<b>PURPOSE</b>	<ul style="list-style-type: none"> <li>● To prevent erosion.</li> </ul>
<b>WHERE APPLICABLE</b>	<ul style="list-style-type: none"> <li>● Usually on slopes or in areas of concentrated flow.</li> <li>● Area with high potential for erosion.</li> </ul>
<b>ADVANTAGES</b>	<ul style="list-style-type: none"> <li>● Provides temporary surface stabilization.</li> <li>● Provides immediate erosion and water quality benefits.</li> <li>● Reduces soil crusting.</li> <li>● Conserves moisture and increases seed germination and seedling growth.</li> <li>● Applicable in areas of concentrated flow and steep slopes (where mulch alone often fails).</li> </ul>
<b>CONSTRAINTS</b>	<ul style="list-style-type: none"> <li>● Expensive.</li> </ul>
<b>DESIGN AND CONSTRUCTION GUIDELINES</b>	<p><b>Materials</b></p> <ul style="list-style-type: none"> <li>● Organic (straw, excelsior, coconut fiber, etc.) or synthetic mulch material incorporated into a polypropylene or similar netting. Material may be biodegradable, photodegradable, or permanent.</li> </ul> <p><b>Installation</b></p> <ul style="list-style-type: none"> <li>● Select type and weight of blanket to fit site conditions (e.g. slope, channel, flow velocity).</li> <li>● Install necessary erosion control devices.</li> <li>● Grade site as specified on plans.</li> <li>● Add topsoil where appropriate.</li> </ul>

- Prepare seedbed, fertilize, and seed immediately after grading.
- Lay blankets on seeded areas following manufacturers directions. Blankets should be laid so they are in continuous contact with the soil, and upslope or upstream ones should overlap the lower ones by at least 8".
- Tuck the uppermost edge of the upper blankets into a check slot (slit trench) and backfill with soil. Tamp down.
- Anchor blankets as specified by the manufacturer. This usually involves driving 6"-8" wood or metal staples into the ground in a pattern determined by site conditions. Wood staples are preferable to metal staples. Wood staples will swell and hold better.



**Exhibit 1104b:** Proper installation of erosion control blankets in a drainageway  
(Source: Indiana Erosion Control Handbook)

**Special Considerations**

- Maximum life varies with material.
- Poor contact between the soil and the blanket resulting from improper stapling, or not using check slots, may cause water to flow under the blanket.

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**MAINTENANCE**

- Inspect for erosion after each storm event during vegetation establishment.
- If any areas show erosion, pull back that portion of the blanket, add soil, re-seed, and re-lay and staple the blanket.
- Check area periodically after vegetation establishment.

---

**REFERENCES**

**Related Practices**

- Practice 1101 Mulching.
- Practice 1102 Vegetative Stabilization.
- Practice 1105 Bonded Fiber Matrix.

**Other Sources of Information**

- Indiana Erosion Control Handbook.
- NRCS Standard Specifications.

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Last Print/Revision Date: October 13, 1996

**PRACTICE 1102  
VEGETATIVE STABILIZATION AND SEEDING**

**DESCRIPTION** ● Stabilization and protection of streambanks with selected vegetation.



Exhibit 1102a: Vegetative Stabilization (Source: North Carolina Erosion Control Manual)

**PURPOSE**

- To protect streambanks from the erosive forces of flowing water and provide a natural, pleasing appearance.
- To restabilize areas disturbed during construction.
- Shade provided by woody vegetation maintains lower water temperatures and provides wildlife habitat.

**WHERE APPLICABLE**

- Generally applicable along streams and ditches where bankfull flow velocity does not exceed 5 ft/sec., and soils are erosion resistant.
- Vegetative techniques usually should be incorporated with structural techniques if the bankflow velocity exceeds 5 ft/sec. (See referenced sources.)

**ADVANTAGES**

- Often less expensive than structural techniques.
- Natural appearance.
- May create or enhance wildlife habitat.
- Self repairing in many cases.

**CONSTRAINTS**

- May not be applicable in high flow ditches and streams.
- Full stabilization may not be achieved until plants become established.
- Often requires limited but regular maintenance such as burning, and in some situations, herbiciding or even mowing.

**DESIGN AND CONSTRUCTION GUIDELINES**

**Materials**

- Appropriate plant species selected from following Exhibit 1102b or other referenced sources. Note that not all species listed are suitable for every region or soil.
- Mulch, erosion control blankets, and/or bonded fiber matrix.

**Partial Sunlight (Half Day) to Full Sunlight**

<u>Common Name</u>	<u>Botanic Name</u>	<u>Plugging</u>	
		<u>Rate On Center</u>	<u>Seeding Rate</u>
<u>Banks and Slopes (Stabilizing Matrix Species)</u>			
Big Bluestem	Andropogon gerardii	18-24"	5 lb/ac
Brown Fox Sedge	Carex vulpinoidea	18-24"	0.25 lb/ac
Canada Wild Rye	Elymus canadensis	18-24"	5 lb/ac
Streambank Rye	Elymus riparius	18-24"	1 lb/ac
Silky Wild Rye	Elymus villosus	18-24"	1 lb/ac
Virginia Wild Rye	Elymus virginicus	18-24"	3 lb/ac
Torrey's Rush	Juncus torreyi	18-24"	0.01 lb/ac
Evening Primrose	Oenothera biennis	18-24"	0.25 lb/ac
Switch Grass	Panicum virgatum	18-24"	1 lb/ac
Indian Grass	Sorghastrum nutans	18-24"	5 lb/ac
Prairie Cord Grass	Spartina pectinata	18-24"	N/A
Blue Vervain	Verbena hastata	18-24"	1 lb/ac
<u>Toe, Lower Banks (Stabilizing Species)</u>			
Sweet Flag	Acorus calamus	18-24"	N/A
Water Plantain	Alisma subcordatum	18-24"	N/A
Bluejoint Grass	Calamagrostis canadensis	18-24"	N/A
Creeping Spike Rush	Eleocharis acicularis	18-24"	N/A
Blue Flag Iris	Iris virginica	18-24"	N/A
Torrey's Rush	Juncus torreyi	18-24"	N/A
Switch Grass	Panicum virgatum	18-24"	N/A
Arrowhead	Sagittaria latifolia	18-24"	N/A
Hardstem Bulrush	Scirpus acutus	18-24"	N/A
Chairmaker's Rush	Scirpus americanus	18-24"	N/A
Dark Green Rush	Scirpus atrovirens	18-24"	N/A
River Bulrush	Scirpus fluviatilis	18-24"	N/A
Prairie Cord Grass	Spartina pectinata	18-24"	N/A
Blue Vervain	Verbena hastata	18-24"	N/A
<u>Cover Crops (Hydroseeding, Hand or Machine Planted Species)</u>			
Annual Ryegrass	Lolium multiflorum	N/A	60 lb/ac
Perennial Ryegrass	Lolium perenne	N/A	24 lb/ac
Smartweed	Polygonum punctatum	N/A	5 lb/ac
Yellow Coneflower	Ratibida pinnata	18-24"	0.25 lb/ac
Black-Eyed Susan	Rudbeckia hirta	18-24"	0.25 lb/ac
<u>Brush for live stakes, brush mattress, live fascine, branch packings, live cribwall and vegetated geogrid. (North bank may have to be planted by shade-tolerant species.)</u>			
Buttonbush	Cephalanthus occidentalis		
Silky Dogwood	Cornus amomum		
Red-Osier Dogwood	Cornus stolonifera		

Exhibit 1102b : Plant species for Vegetative Stabilization (Source: DuPage County Streambank Stabilization Program)

**Partial Sunlight (Half Day) to Full Sunlight (continued)**

<u>Common Name</u>	<u>Botanic Name</u>	<u>Plugging</u>	
		<u>Rate On Center</u>	<u>Seeding Rate</u>
<u>Brush ... (continued from last page)</u>			
White Willow	Salix alba		
Peach-Leaved Willow	Salix amygdaloides		
Pussy Willow	Salix discolor		
Sandbar Willow	Salix interior		
Black Willow	Salix nigra		
Elderberry	Sambucus canadensis		
<u>Non-Stabilizing Decorative and Screening Plants</u>			
Swamp Milkweed	Asclepias incarnata		
Joe-Pye Weed	Eupatorium maculatum		
Spiderwort	Tradescantia ohiensis		
Culver's Root	Veronicastrum virginicum		
Golden Alexanders	Zizia aurea		
<u>Shrubs (Plant sparsely to prevent overshadowing banks)</u>			
Eastern Ninebark	Physocarpus opulifolius		
Arrowwood Viburnum	Viburnum dentatum		
Nannyberry Viburnum	Viburnum lentago		
<u>Trees (Plant lightly to prevent overshadowing banks)</u>			
White Ash	Fraxinus americana		
Green Ash	Fraxinus pennsylvanica		
Quaking Aspen	Populus tremuloides		
Swamp White Oak	Quercus bicolor		
White Cedar	Thuja occidentalis		
Basswood	Tilia americana		
<u>Buffer Zone/Filter Strips</u>			
Big Bluestem	Andropogon gerardii	N/A	5 lb/ac
New England Aster	Aster novae-angliae	N/A	2 oz/ac
Oats*	Avena sativa	N/A	25 lb/ac
Daisy*	Chrysanthemum leucanthemum	N/A	0.25 lb/ac
Chicory*	Cichorium intybus	N/A	0.1 lb/ac
Barley*	Hordeum vulgare	N/A	25 lb/ac
Annual Ryegrass*	Lolium multiflorum	N/A	25 lb/ac
Wild Bergemont	Monarda fistulosa	N/A	0.5 oz/ac
Switch Grass	Panicum virgatum	N/A	1 lb/ac
Yellow Coneflower*	Ratibida pinnata	N/A	0.25 lb/ac

Exhibit 1102b (continued): Plant species for vegetative Stabilization (Source: DuPage County Streambank Stabilization Program)

Partial Sunlight (Half Day) to Full Sunlight (continued)

<u>Common Name</u>	<u>Botanic Name</u>	<u>Plugging Rate On Center</u>	<u>Seeding Rate</u>
<u>Buffer Zone/Filter Strips (continued)</u>			
Black-Eyed Susan*	Rudbeckia hirta	N/A	0.25 lb/ac
Indian Grass	Sorghastrum nutans	N/A	5 lb/ac
Alsike Clover*	Trifolium hybridum	N/A	0.1 lb/ac
Red Clover*	Trifolium pratense	N/A	0.1 lb/ac
Hoary Vervain	Verbena stricta	N/A	0.5 oz/ac

\* Transition species to be planted in the outer 5 feet of buffer to blend into existing landscape.

Full Shade

Bank and Slopes

Sideflowering Aster	Aster lateriflorus	18-24"	0.25 lb/ac
Gray Sedge	Carex amphibola	18-24"	N/A
Common Wood Sedge	Carex blanda	18-24"	N/A
Fowl Manna Grass	Glyceria striata	18-24"	0.25 lb/ac

Non-Stabilizing Decorative Plants

Jack-in-the-Pulpit	Arisaema triphyllum	10'	N/A
Green Dragon	Arisaema dracontium	10'	N/A
Turtlehead	Chelone glabra	10'	N/A
Shooting Star	Dodecatheon meadia	10'	N/A
Spotted Jewelweed	Impatiens capensis	10'	N/A
Cardinal Flower	Lobelia cardinalis	10'	N/A
Virginia Bluebells	Mertensia virginica	10'	N/A
Solomon's Seal	Polygonatum Canaliculatum	10'	N/A
Ostrich Fern	Pteris pennsylvanica	10'	N/A
Swamp Buttercup	Ranunculus septentrionalis	10'	N/A

Not Recommended

Box Elder	Acer negundo
Garlic Mustard	Allilaria officinalis
Tartarian Honeysuckle	Loicera tatarica
Reed Canary Grass	Phalaris arundinacea
Common Buckthorn	Rhamnus cathartica
Glossy Buckthorn	Rhamnus frangula
Multiflora Rose	Rosa multiflora

Exhibit 1102b (continued): Plant species for vegetative Stabilization (Source: DuPage County Streambank Stabilization Program)

## Installation

- Site Preparation

1. Selected vegetative stabilization measure should be compatible with improvements planned or carried out by others.
2. Protective measures should be started at a stabilized or controlled point on the stream and extended to a stabilized or controlled point downstream.
3. The grade of the channel must be controlled, either by natural or artificial means, before any vegetative measure can be used, unless live stakes can be installed below the anticipated depth of the bottom scour.
4. The substrate should have enough silt and clay material to maintain adequate moisture and nutrient supply, and sufficient pore space to permit root penetration. The bulk density should be 1.2-5 grams per cubic centimeter. Clay content should not exceed 35%.
5. Soil depth appropriate for plant growth should be at least 12", except where adding soil material is not feasible because of steep grades.
6. pH should be in a range between 5.5 and 6.5.
7. Substrate should be free of toxins harmful to plant growth.

- Seedbed Preparation

1. Apply fertilizer or other required amendments prior to final seedbed preparation.
2. Prepare seedbed to a minimum depth of 3" by disking or other means. All tillage should follow the contour of the land.

- Seeding/Plugs (Exhibit 1102b)

1. All permanent seed mixes should be installed with a rangeland drill seeder. Temporary mixes may be applied with a drill seeder, cultipacker, or a hydraulic sprayer. Hydro seeders are also good for larger areas.
2. All seed, if possible, should be certified for viability.

- Timing

1. Dormant seedings should take place between Dec. 1-Feb. 28 (north of U.S. 40), Dec. 10-Jan 15 (south of U.S. 40).
2. Permanent seedings should take place between March 1 and September 30. Permanent seeding done between May 10 and August 10 may need irrigation.
3. Temporary seeding should take place between March 1 and April 15 (oats), September 15 to October 30 (cereal rye and wheat), and March 1 to May 1 or August 1 to September 1 (perennial ryegrass).
4. Plugs should be installed during spring.

**Special Considerations**

- Use of native species is always preferable to invasive introduced species such as Tall Fescue. However, the use of such species is sometimes inevitable where immediate and effective erosion control is essential. Indiana Erosion Control Handbook includes the listing of more traditional permanent seeding species applicable to many of these situations.
- All seedings should be protected with stabilization methods during the period of establishment (Practices 1101, 1103, and 1104).
- A listing of vendors who regularly carry native species noted in Exhibit 1102b may be obtained from the U.S. Fish and Wildlife Service.

---

**MAINTENANCE**

- Areas of inadequate cover after dormant seedings should be reseeded with a temporary or permanent matrix after mid- to late-April.
- Areas seeded with a permanent or temporary matrix should be fertilized as necessary. Damaged, eroded, bare, or sparsely covered areas should be repaired and reseeded.

---

**REFERENCES**

**Related Practices**

- Practice 1101 Mulching.
- Practice 1103 Bonded Fiber Matrix.
- Practice 1104 Erosion Control Blankets and Matting.
- Practice 1201 Wetland Replacement.
- Practice 1202 Stream Environment Enhancement.
- Practice 1204 Tree Replacement.

**Other Sources of Information**

- Indiana Erosion Control Handbook.
- DuPage County Streambank Stabilization Program.
- NRCS Standard Specifications.
- COE Engineering Manual.

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Last Print/Revision Date: October 13, 1996

**PRACTICE 105  
SILT FENCING**

**DESCRIPTION**

- Temporary barrier of entrenched geotextile fabric (filter fabric) stretched across and attached to supporting posts used to intercept sediment-laden runoff from small drainage areas of disturbed soil. (Note: this practice is also included in the Indiana Erosion Control Handbook.)



**Exhibit 105a:** Silt Fencing (Source: North Carolina Erosion Control Manual)

<b>PURPOSE</b>	<ul style="list-style-type: none"><li>• Cause the deposition of transported sediment load from sheet flows leaving disturbed areas.</li></ul>
<b>WHERE APPLICABLE</b>	<ul style="list-style-type: none"><li>• Situations when sediment laden runoff from small drainage areas are a concern.</li></ul>
<b>ADVANTAGES</b>	<ul style="list-style-type: none"><li>• Silt fences capture and retain sediment on the construction site thus protecting waterways, streets and other areas outside of the construction limits from sedimentation.</li><li>• Silt fences often serve to define construction limits to equipment operators as well as bystanders.</li><li>• Silt fences are usually more effective and less expensive than a Straw Bale Filter (Practice 106).</li></ul>
<b>CONSTRAINTS</b>	<ul style="list-style-type: none"><li>• Not appropriate where the maximum drainage area exceeds 1/4 acre per 100 feet of fence. Silt fencing is further restricted by slope steepness.</li></ul>

Land Slope	Max. Distance Above Fence
< 2%	100'
2-5%	75'
5-10%	50'
10-20%	25'
> 20%	15'

**Exhibit 105b:** Maximum distance above silt fence based on land slope. (Source: Indiana Erosion Control Handbook)

- Silt fence should not be used in the flow path of defined drainageways.
- Silt fence may be a high maintenance item during earth moving activities in adjacent areas, and during the rainy season.

**DESIGN AND CONSTRUCTION GUIDELINES**

**Materials**

- 2" x 2" hardwood posts or steel posts.
- 14 gauge, 6" mesh wire fence (optional).
- Woven or non-woven geotextile fabric with specified filtering efficiency and tensile strength.

Physical Property	Woven Fabric	Non-woven Fabric
Filtering efficiency	85%	85%
Tensile strength at 20% elongation:		
Standard strength	30 lbs/l.in.	50 lbs/l.in.
Extra strength	50 lbs/l.in.	70 lbs/l.in.
Slurry flow rate	0.3 gal./min./sq.ft.	4.5 gal./min./sq.ft.
Water flow rate gal./min./sq.ft.	15 gal./min./sq.ft.	220
UV resistance	70%	85%

**Exhibit 105c:** Properties of woven versus non-woven silt fence fabric. (Source: Indiana Erosion Control Handbook)

**Installation**

- Dig an 8" deep, flat-bottomed or V-shaped trench along the entire intended fence line.
- Drive wood or steel support posts at least 1' into the ground, ≤ 8' apart (≤ 6' apart if not using support wire). Adjust spacing if necessary to ensure that posts are set at the low points along the fence.
- Fasten support wire to the up slope side of the posts, extending it 8" into the trench, or as recommended by the manufacturer.
- Run a continuous length of geotextile fabric on the up slope sides of the posts.

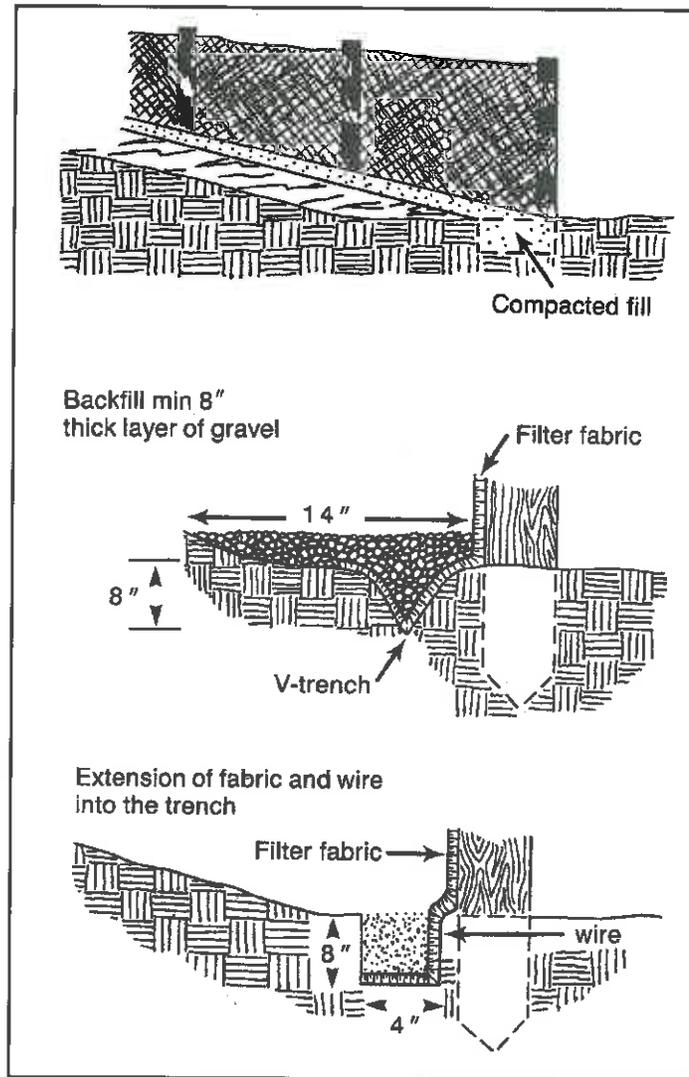


Exhibit 105d: Silt fence installation Details (Source: North Carolina Erosion Control Manual)

- If a joint is necessary, nail the overlap to the nearest post with lath.
- Place the bottom 1' of fabric in the 8" deep trench, extending the remaining 4" toward the up slope side.
- Backfill the trench with compacted earth or gravel.

#### Special Considerations

- Fence should be at least 10' from the toe of the slope to provide for sediment storage.
- The height of the fence should be 24"-36" above the ground surface.
- Silt fences should not be placed in areas of concentrated flows.
- Improper placement and/or installation can exacerbate and even create erosion problems.

#### MAINTENANCE

- Inspect fence periodically and after each storm event.
- Replace fencing as necessary.
- Remove deposited sediment when it reaches half the height of the fence at its lowest point, or if the fence begins to bulge.

# **T.O.C.**

## **REFERENCES**

### **Related Practices**

- Practice 106 Straw Bale Filter.
- Practice 1102 Vegetative Stabilization.

### **Other Sources of Information**

- Indiana Erosion Control Handbook.
- NRCS Standard Specifications.
- North Carolina Erosion Control Manual

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Last Print/Revision Date: October 13, 1996



Indiana Department of Natural Resources

10-A-1  
9-21-16

Michael R. Pence., Governor  
Cameron F. Clark, Director  
Division of Water  
402 W. Washington Street  
Room W264  
Indianapolis, IN 46204  
Phone (317) 232-4160  
Toll-free (877) 928-3755  
Fax (317) 233-4579  
[www.in.gov/dnr/water/](http://www.in.gov/dnr/water/)

September 8, 2016

Bill Emerson Jr.  
Lake County Surveyor  
Building A, 3<sup>rd</sup> Floor  
2293 N. Main Street  
Crown Point, IN 46307



RE: SEA 368 Field Review Request

Dear Mr. Emerson:

Reference is made to an email received on September 6, 2016, from Dan Gossman, Office of the Lake County Surveyor, regarding a reconstruction project on Turkey Creek. This project is assigned to file SEA #912. The project is located in Section 15, Township 35 North, Range 9 West, St. John Township, Lake County. We are currently working on the review.

We also recommend you contact the US Army Corps of Engineers regarding this project if you have not already done so to determine their jurisdiction and any required permits. Please submit any correspondence from the Corps to the above address once obtained. Contact information for the Corps is:

Chicago Corps of Engineers  
111 North Canal Street  
Chicago, IL 60606-7206  
Phone: (312) 846-5530  
Fax : (312) 353-4110

If you should have any questions please contact me at (317) 234-0586.

Sincerely,

Erin Basiger  
Statewide Region Environmental Biologist  
Division of Fish and Wildlife



**APPLICATION FOR AUTHORIZATION TO DISCHARGE DREDGED OR FILL MATERIAL TO ISOLATED WETLANDS AND/OR WATERS OF THE STATE**

State Form 51821 (R2 / 11-15)

Indiana Department of Environmental Management

10-A-1  
9-21-16

- INSTRUCTIONS:** 1. Read the instruction sheet before filling out this form.  
2. You must complete all applicable sections of this form

1. Applicant Information		2. Agent Information	
Name of Applicant <b>Lake County Surveyor</b>		Name of Agent	
Mailing address (Street/ PO Box/ Rural Route, City, State, ZIP Code) 2293 North Main Street Crown Point, IN 46307		Mailing address (Street/ PO Box/ Rural Route, City, State, ZIP Code)	
Daytime Telephone Number (219) 755-3745		Daytime Telephone Number	
Fax Number (219) 755-3750		Fax Number	
E-mail address (optional) gossmdv@lakecountyin.org		E-mail address (optional)	
Contact person (required) Dan Gossman		Contact person	
3. Project / Tract Location			
County <b>Lake</b>		Nearest city or town <b>Schererville</b>	
U.S.G.S. Quadrangle map name (Topographic map) St John		Project street address (if applicable) Between Joliet Street and James Wittchen Drive in Schererville, IN.	
Quarter <b>NE</b>	Section <b>15</b>	Township <b>35</b>	Range <b>9</b>
Type of aquatic resource(s) to be impacted (Attach Worksheet One.) drainage ditch		Project name or title (if applicable) 2016 Turkey Creek Bank Stabilization	
Other location descriptions or driving directions US Highway 30 to Cline Avenue turn right (north). Approximately 3/4 mile on Cline Avenue to Joliet Street then turn left (west). Approximately 300 feet turn left (south) on Julie Drive and you have arrived at the project site on the left.			
4. Project Purpose and Description (Use additional sheet(s) if required.)			
Has any construction been started? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Anticipated start date (month, day, year) <b>10-15-2016</b>	
If yes, how much work is completed?			
Purpose of project and overview of activities The project involves routine bank stabilization along an approximate 625 feet long reach along Turkey Creek Regulated Drain beginning on the south side of Joliet Street in Schererville, Lake County, Indiana. All scheduled maintenance will take place within the 75 feet Regulated Drain Easement on Turkey Creek. Channel clearing and snagging will occur throughout the entire project length. Riprap will be placed over the top of geotextile fabric to stabilize the existing banks in order to prevent further erosion and undermining.			

**5. Avoidance, Minimization, and Mitigation Information: Applicants must answer all of the following questions**  
(Use additional sheet(s) if necessary - provide a detailed response to all applicable questions.)

**A. For projects with Class II isolated wetlands –**

1. Is there a reasonable alternative to the proposed activity?  
No - There are no wetlands indicated on the National Wetland Inventory

2. Is the proposed activity reasonably necessary or appropriate?  
There are no wetlands indicated on the National Wetland Inventory

This ditch is a major conveyance and bank stabilization is extremely vital to maintain the structural integrity and prevent soil and other pollutants from entering the ditch and traveling downstream.

**B. For projects with Class III wetlands, adjacent wetlands, and/or streams, rivers, lakes or other water bodies –**

1. Is there a practicable alternative to the proposed activity?  
There are no wetlands indicated on the National Wetland Inventory

2. Have practicable and appropriate steps to minimize impacts to water resources been taken?  
There are no wetlands indicated on the National Wetland Inventory

Yes - Silt fence is included in this project along with mulched seeding and erosion control blanket for all disturbed areas.

Describe all compensatory mitigation required for unavoidable impacts.  
There are no wetlands indicated on the National Wetland Inventory

**6. Drawing / Plan Requirements (Applicants must provide the following.)**

- Top/aerial/overhead views of the project site showing existing conditions and proposed construction.
- Cross sectional view of areas of fill or alterations to streams and other waters.
- North arrow, scale, property boundaries.
- Include wetland delineation boundary (if applicable). Label all wetlands (jurisdictional, isolated and exempt) as I-1, I-2, I-3, etc. and the mitigation areas as M-1, M-2, etc.
- Location of all surface waters, including wetlands, erosion control measures, existing and proposed structures, fill and excavation locations, disposal area for excavated material, including quantities, and wetland mitigation site (if applicable).
- Approximate water depths and bottom configurations (if applicable).

**7. Supplemental Application Materials (Applicants must provide the following.)**

- A wetland delineation of all wetlands on the project site (for projects with wetland impacts).
- At least three photographs of the project site. Indicate the photo locations on the project plans.
- If isolated wetlands are present, a letter from the Corps of Engineers verifying this statement.
- Wetland mitigation plan and monitoring report.
- Classification of all isolated wetlands on the tract (if isolated wetlands are present onsite).
- Copies of all applicable local permits and/or resolutions pertaining to the project or tract.
- Tract history (see instructions).

**8. Additional information that MAY be required (IDEM will notify you if needed.)**

- Erosion control and/or storm water management plans.
- Sediment analysis.
- Species surveys for fish, mussels, plants and threatened or endangered species.
- Stream habitat assessment.
- Any other information IDEM deems necessary to review the proposed project.

### 9. Permitting Requirements

a. Does this project require the issuance of a Department of the Army Section 404 Permit from the US Army Corps of Engineers?  Yes  No  
 If no, you do not need to answer Part b.

b. Have you applied for an Army Corps of Engineers Section 404 permit?  Yes  No  
 If yes, please supply the Corps of Engineers ID Number, the Corps of Engineers District, the project manager, and a copy of any correspondence with the Corps. If no, contact the Army Corps of Engineers regarding the possible need for a permit application.  
 Have contacted Chicago District (Paul Leffler). Waiting to hear back.

c. Have you applied for, received, or been denied a permit from the Department of Natural Resources for this project?  Yes  No  
 Please give the permit name, permit number, and date of application, issuance or denial.  
 IDNR is scheduling an SEA 368 as notified by Erin Basinger on 09-08-2016

d. Have you applied for, received, or been denied any other federal, state, or local permits, variances, licenses, or certifications for this project?  
 Yes  No  
 Please give the permit name, agency from which it was obtained, permit number, and date of issuance or denial.

### 10. Adjoining Property Owners and Addresses

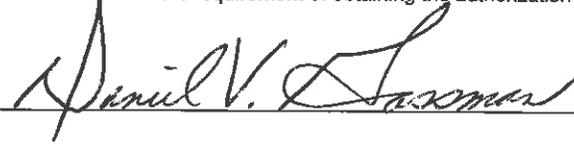
List the names and addresses of landowners adjacent to the property on which your project is located and the names and addresses of other persons (or entities) potentially affected by your project. Use additional sheet(s) if required.

<p>Name <b>Kelly Ryan</b> Address (number and street) 727 Joliet Street City State ZIP Code Scherverville IN 46375</p>	<p>Name <b>Joanna Mills</b> Address (number and street) 765 Joliet Street City State ZIP Code Scherverville IN 46375</p>
<p>Name <b>Marcario Gallegos, Jr.</b> Address (number and street) 729 Joliet Street City State ZIP Code Scherverville IN 46375</p>	<p>Name <b>Dragomir &amp; Suzana Ivetic</b> Address (number and street) 1700 Cline Avenue City State ZIP Code Scherverville IN 46375</p>
<p>Name <b>Michael &amp; Patricia Buchler</b> Address (number and street) 711 Julie Drive City State ZIP Code Scherverville IN 46375</p>	<p>Name <b>Jeffery Jorge</b> Address (number and street) 1702 Cline Avenue City State ZIP Code Scherverville IN 46375</p>
<p>Name <b>Lexroca LLC</b> Address (number and street) 652-704 James Wittchen Drive City State ZIP Code Scherverville IN 46375</p>	<p>Name <b>James &amp; Linda Payer</b> Address (number and street) 722 James Wittchen Drive City State ZIP Code Scherverville IN 46375</p>
<p>Name  Address (number and street)  City State ZIP Code</p>	<p>Name <b>Deborah Gleason</b> Address (number and street) 720 James Wittchen Drive City State ZIP Code Scherverville IN 46375</p>
<p>Name  Address (number and street)  City State ZIP Code</p>	<p>Name  Address (number and street)  City State ZIP Code</p>

**11. Signature - Statement of Affirmation**

I certify that I am familiar with the information contained in this application and, to the best of my knowledge and belief, such information is true and accurate. I certify that I have the authority to undertake and will undertake the activities as described in this application. I am aware that there are penalties for submitting false information. I understand that any changes in project design subsequent to IDEM's granting of authorization to discharge to a water of the state are not authorized and I may be subject to civil and criminal penalties for proceeding without proper authorization. I agree to allow representatives of the IDEM to enter and inspect the project site. I understand that the granting of other permits by local, state, or federal agencies does not release me from the requirement of obtaining the authorization requested herein before commencing the project.

Applicant's Signature:



Date: 09/08/2016

(mm/dd/yyyy)

Print Name: Daniel V. Gossman

Title: Drainage Administrator

**Worksheet – Summary of Onsite Water Resources and Project Impacts**

A. Jurisdictional Wetlands (Existing Conditions)		Jurisdictional Wetlands (Proposed Impacts)			
Wetland Type	Size of wetland (acreage)	To be Impacted?	Acreage	Fill quantity (cys)	ATF
<input type="checkbox"/> EM <input type="checkbox"/> SS <input type="checkbox"/> FO		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> EM <input type="checkbox"/> SS <input type="checkbox"/> FO		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> EM <input type="checkbox"/> SS <input type="checkbox"/> FO		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> EM <input type="checkbox"/> SS <input type="checkbox"/> FO		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> EM <input type="checkbox"/> SS <input type="checkbox"/> FO		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> EM <input type="checkbox"/> SS <input type="checkbox"/> FO		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> EM <input type="checkbox"/> SS <input type="checkbox"/> FO		<input type="checkbox"/> Yes <input type="checkbox"/> No			

Describe the type and composition of fill material to be placed in wetlands on the project site:

Describe the type and composition and quantity (*cubic yards*) of material proposed to be dredged or excavated from wetlands on the project site:

B. Isolated Wetlands (Existing Conditions)		Isolated Wetlands (Proposed Impacts)				
Wetland Class	Type	Size of wetland (acreage)	To be Impacted?	Acreage	Fill quantity (cys)	ATF
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> NF <input type="checkbox"/> F		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> NF <input type="checkbox"/> F		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> NF <input type="checkbox"/> F		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> NF <input type="checkbox"/> F		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> NF <input type="checkbox"/> F		<input type="checkbox"/> Yes <input type="checkbox"/> No			
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> NF <input type="checkbox"/> F		<input type="checkbox"/> Yes <input type="checkbox"/> No			

Describe the type and composition of fill material to be placed in isolated wetlands on the project site:

Describe the type and composition and quantity (*cubic yards*) of material proposed to be dredged or excavated from isolated wetlands on the project site:

**C. Bridges and Stream Crossings - provide the following information for EACH structure (Use additional sheet(s) if required.)**

Stream name \_\_\_\_\_

Description of impacts \_\_\_\_\_

Length of upstream bank impacts: \_\_\_\_\_

Left side: \_\_\_\_\_ Right side: \_\_\_\_\_

Length of downstream bank impacts: \_\_\_\_\_

Left side: \_\_\_\_\_ Right side: \_\_\_\_\_

Bank protection fill placed below the Ordinary High Water Mark: \_\_\_\_\_

Volume per running foot: \_\_\_\_\_

Bank protection fill placed below the Ordinary High Water Mark: \_\_\_\_\_

Area of coverage: \_\_\_\_\_

D. Bank Stabilization – provide the following information for EACH segment (Use additional sheet(s) if required )	
Water body name	Turkey Creek
Description of impacts	Geotextile fabric with riprap for stabilizing
Length of shoreline or bank protection	625 lf x 2
Volume (cubic yards) of bank protection fill placed below the Ordinary High Water Mark per running foot	70 cubic yards of fill below the OHWM on each bank for a total of 140 cubic yards
Area (square feet) of bank protection fill placed below the Ordinary High Water Mark	1,250 square feet of fill placed below the OHWM on each bank for a total of 2,500 square feet

E. Stream Relocation	
Water body name	Turkey Creek
Description of impacts	Little to no impacts to the channel
Length of existing channel to be relocated (linear feet)	0.00
Length of new channel to be constructed (linear feet)	0.00
Existing channel to be backfilled?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Type of relocation	<input type="checkbox"/> Piping <input type="checkbox"/> Open <input type="checkbox"/> Channel <input type="checkbox"/> Other: _____
Type of fill and volume (cubic yards)	

F. Open Water Fill	
Water body name	
Description of impacts	
Area of water body to be filled (acres)	
Type of fill and volume (cubic yards)	

10-A-1  
9-21-16

**U.S. ARMY CORPS OF ENGINEERS  
APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT**  
33 CFR 325. The proponent agency is CECW-CO-R.

OMB APPROVAL NO. 0710-0003  
EXPIRES: 28 FEBRUARY 2013

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

**PRIVACY ACT STATEMENT**

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

**(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)**

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE
--------------------	----------------------	------------------	------------------------------

**(ITEMS BELOW TO BE FILLED BY APPLICANT)**

5. APPLICANT'S NAME First - Daniel Middle - V Last - Gossman Company - Lake County Surveyor's Office E-mail Address - gossmdv@lakecountyin.org	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required) First - Middle - Last - Company - E-mail Address -
---	--

6. APPLICANT'S ADDRESS: Address- 2293 North Main Street City - Crown Point State - IN Zip - 46307 Country - USA	9. AGENT'S ADDRESS: Address- City - State - Zip - Country -
---	---

7. APPLICANT'S PHONE NOS. w/AREA CODE a. Residence b. Business c. Fax (219) 755-3745 (219) 755-3750	10. AGENTS PHONE NOS. w/AREA CODE a. Residence b. Business c. Fax
---	--

**STATEMENT OF AUTHORIZATION**

11. I hereby authorize, \_\_\_\_\_ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

\_\_\_\_\_  
SIGNATURE OF APPLICANT

\_\_\_\_\_  
DATE

**NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY**

12. PROJECT NAME OR TITLE (see instructions)  
2016 Turkey Creek Bank Stabilization

13. NAME OF WATERBODY, IF KNOWN (if applicable) Turkey Creek	14. PROJECT STREET ADDRESS (if applicable) Address Joliet Street to James Wittchen Drive
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15. LOCATION OF PROJECT Latitude: °N 41-29-32.16 Longitude: °W 87-25-59.18	City - Schererville State- IN Zip- 46375
---	--

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)  
Tax Parcel ID Municipality Schererville  
Section - 15 Township - 35 Range - 9

17. DIRECTIONS TO THE SITE

US Highway 30 to Cline Avenue turn north. Approximately 3/4 mile on Cline Avenue to Joliet Street then turn left (west). Approximately 300 feet turn left (south) on Julie Drive. The ditch/project is on the left.

18. Nature of Activity (Description of project, include all features)

The project involves routine bank stabilization along an approximate 625 feet long reach along Turkey Creek Regulated Drain beginning on the south side of Joliet Street in Schererville, Lake County, Indiana. All scheduled maintenance will take place within the 75feet Regulated Drain Easement on Turkey Creek. Channel clearing and snagging will occur throughout the entire project length. Riprap will be placed over the top of geotextile fabric to stabilize the existing banks. in order to prevent further erosion and undermining.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

Prevent further erosion, undermining and sedimentation.

**USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED**

20. Reason(s) for Discharge

Erosion Control

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards
Riprap	70 cu yds	

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres 0.06 of erosion protection below the OHWM  
or  
Linear Feet

23. Description of Avoidance, Minimization, and Compensation (see instructions)

This project is being done to prevent further erosion and undermining of the banks. This will stop the pollutants of sediment from traveling downstream and damaging the stream.

24. Is Any Portion of the Work Already Complete?  Yes  No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address- 727 - 729 Joliet Street

City - Schererville State - IN Zip - 46375

b. Address- 1700 - 1702 Cline Avenue

City - Schererville State - IN Zip - 46375

c. Address- 720 - 722 James Wittchen Drive

City - Schererville State - IN Zip - 46375

d. Address- 765 Joliet Street

City - Schererville State - IN Zip - 46375

Address- 711 Julie Drive

City - Schererville State - IN Zip - 46375

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
IDNR			09/08/2016		
IDEM			09/08/2016		

\* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

  
SIGNATURE OF APPLICANT

09/08/2016  
DATE

\_\_\_\_\_  
SIGNATURE OF AGENT

\_\_\_\_\_  
DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

I.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

Handout 11-A-1  
9-21-16

MEMORANDUM

**To:** Lake County Surveyor Bill Emerson  
Lake County Drainage Board  
Peter Katic, Drainage Board attorney  
**From:** Clifford E. Duggan, Jr., Legal Consultant  
**Re:** Licensing  
**Date:** September 19, 2016

The licensing requirements of Lake County, Indiana are found in the Contractors Licensing Ordinance No. 1628. The Unincorporated Lake County Contractors Board of Licensing has the general charge and responsibility of administering the Ordinance. The Lake County Plan Commission follows that Ordinance and the rules and regulations of that Board and enforces the Ordinance and those rules and regulations.

A business entity conducting business in Lake County may apply for and, if successful in its application, may receive a Contractor or Specialty Contractor license. These licenses carry with them the ability to conduct work specific to those licenses. After discussion with the Plan Commission, it is my understanding that under a General Contractor license, any work may be able to be done, and the General Contractor may subcontract for those portions of the project which may require particular expertise. Because many Drainage Board projects contain a wide scope of work, it is that flexibility which is desirable in the Drainage Board process. That is why there is a current requirement in the Drainage Board bid documents that a bidder have a General Contractor license. The General Contractor License requirement has also been stated at every pre-bid since being made part of the specifications.

Since the requirement is in the Drainage Board bid documents, that requirement must be followed, unless those bid documents contain a specific provision to allow the Drainage Board to deviate from that requirement. However, the risk of a challenge to the bidding process should the Drainage Board so deviate is from 2 sources: those bidders who submitted bids and complied with the requirement, and those businesses which did not bid because they did not have a General Contractor license. Unless there are compelling reasons to deviate and the specifications provide for same, the Drainage Board must award to the lowest responsive and responsible bidder which has a General Contractor license.

  
**LAKE COUNTY DRAINAGE BOARD**  
  
**APPROVED THIS 21 DAY OF SEPT 20 16**



# Office of the Lake County Surveyor

Lake County Government Center • 2293 North Main Street • Crown Point, Indiana 46307  
Phone: (219) 755-3745 • Fax: (219) 755-3750

Bill Emerson, Jr.  
County Surveyor

## CONTRACT #2016-LC-5

**PROJECT NAME: Main Beaver Dam Ditch Bank Stabilization  
1423 Edgewater Road, Crown Point**

**AMOUNT: \$48,765.50**

This CONTRACT is made and entered into this 21st day of SEPTEMBER, 2016 by and between R. A. OROS, INC., a(n) INDIANA Corporation hereinafter referred to as the "Contractor" and the Lake County Drainage Board, hereinafter referred to as the "Board".

NOW, THEREFORE, in consideration of the mutual promises contained herein, the Board and the Contractor do hereby mutually agree as follows:

I. SCOPE OF WORK

The Contractor shall provide the project services as described herein in Attachment A; in the approved plans and specifications, and any modifications or addenda thereof, which are attached hereto or otherwise incorporated herein by reference; in the terms contained in any permits obtained or not yet approved and any monies to be received from contributing municipalities; and in the Contractor's bid/response and any supplemental responses, and subsequent negotiations arising therefrom, all of which is incorporated herein by reference. Where there is an inconsistency between these terms, the term that is most beneficial to the Board shall control.

The Contractor shall perform the work covered by this Contract under the supervision of the Lake County Surveyor and/or its designee.

The Contractor shall comply with all plans, specifications, terms and conditions of this Contract. Deviation from said plans, specifications, terms or conditions shall be a basis for an immediate cease and desist notice of said unauthorized activity by the Board or the Lake County Surveyor's Office and, where appropriate as determined by the Board or the Lake County Surveyor's Office, cease and desist of contract activity until further action taken by the Board at its next public meeting.

The scope of work occurs on private property and/or within and upon a regulated drain and its easement as authorized by statute. The Contractor has the authority to keep unauthorized persons from the job site in order to avoid any potential liability arising therefrom. Should such persons fail to leave said site, the Contractor is to immediately contact the Lake County Surveyor's office, who may contact the Lake County Sheriff to maintain a safe work site and limit any liability of Lake County or the Contractor for any alleged claims or damages.

### Soil Conditions

The Contractor agrees to accept full responsibility for its conclusions relative to the nature and probable difficulties of the work due to underground structures and soil conditions.

The results of subsurface soil investigations shown on the drawings or given in the specifications are for general information only. Neither the Lake County Drainage Board nor the engineer guarantees that materials other than those given in this information will not be encountered or that the proportions of the various materials will not vary from the information indicated on the plans or given in the specifications.

The Contractor shall be responsible for making its own subsurface soil investigations and shall make its own determinations from the investigations. The Contractor waives all claims for damages which it may suffer by reason of the inadequacies or discrepancies of the underground information shown on the plans or provided in the specifications. No compensation will be paid to the Contractor due to inadequacies or discrepancies in subsurface data furnished by Lake County Drainage Board or by the engineer.

### Materials

No materials of any kind shall be used until they have been examined by the Lake County Surveyor or his engineer or other person authorized by the Lake County Surveyor, who shall have full power to condemn any work or materials not in accordance with these specifications, and to require the Contractor to remove any work or materials so condemned, and at the contractor's own expense to replace such condemned work or materials to the Lake County Surveyor or his engineer's satisfaction. The decision of the Lake County Surveyor or his engineer shall be final as to quality of workmanship and materials.

### Clean up

During the time that the work is in progress the Contractor shall make every effort to maintain the site in a neat and orderly condition. All refuse, broken pipe, excess fill material, cribbing, etc., shall be removed as soon as practicable. Should the work not be maintained in a satisfactory condition the Lake County Surveyor or his engineer, or other person authorized by the Lake County Surveyor may cause the work to stop until the "clean-up" portion of the work has been done to the satisfaction of the Lake County Surveyor and/or its engineer.

The work will not be considered complete and the final payment certificate issued until all rubbish, unused material or equipment due to or connected with it shall have been removed and the premises left in a condition satisfactory to the Lake County Surveyor and/or its engineer.

## II. PAYMENT OF SERVICE

- a. For the services rendered by the Contractor, the Board shall pay to the Contractor the sum of FORTY-EIGHT THOUSAND, SEVEN HUNDRED AND SIXTY-FIVE DOLLARS AND 50/100THS (\$48,765.50), payable in accordance with the attached "Schedule of Payments".
- b. No payment under paragraph (a) above shall be made until:
  - (1) The Lake County Surveyor has filed with the Board a written report approving the work performed by Contractor as required under this contract.

- (2) The Contractor shall have filed with the Board a waiver of lien and verified statement that all expenses incurred for labor, material, and suppliers have been paid in full.
- c. Billing for the services rendered under this contract shall be in the form and manner prescribed by the State of Indiana and the Board.
- d. Approval of payment claims shall be made at a regular Board Meeting. Should there be a dispute regarding any invoice or payment thereof, the party raising the dispute shall notify the other party upon discovery thereof. Payment of any invoice shall not be a waiver of any right associated with a dispute with the invoice or payment, and any future payment may be modified accordingly to rectify any discovered discrepancy.
- e. Fifteen percent (15%) of the contract price shall be withheld by the Board for a period of 60 days after completion of the work and its acceptance by the Lake County Surveyor for the purpose of securing payment of suppliers, laborers, and subcontractors, if any. However, if the Contractor files waivers of lien from all subcontractors, suppliers and laborers of this project, the 15% retainage may be paid along with the final payment under this contract.
- f. The sources of funds for payment under this Contract is the Lake County Drainage Board and/or such other applicable and appropriate sources of funds as apply to the scope of work to be performed on behalf of the approved budget for this specific project, and more specifically the line item therein for the payment of these services. By execution of this Contract the Lake County Drainage Board or Lake County is not agreeing to use funds other than the funds in the budget for the purposes enunciated herein. The sources are restricted to those funds which have been appropriated for this purpose by the Lake County Council as applicable and approved by the Department of Local Government Finance, the State Board of Accounts and/or State Board of Tax Commissioners, as applicable. In this regard this Contract may be terminated, in whole or in part, when the Lake County Auditor makes a written determination that the funds are not appropriated or otherwise available to support continuation of performance. Such determination shall be final and conclusive. Notice shall be given to the Contractor as soon as the Board is aware of such a situation. However, the Board will make good faith efforts to provide funding for this Contract, and if such funding is available and appropriated, the Board shall fulfill its financial obligation, subject to all terms and conditions herein.

III. SUBLETTING AND ASSIGNMENT OF CONTRACT

No portion of the Contract shall be sublet, assigned or otherwise disposed of, except with the written consent of the Board. Consent to sublet, assign, or otherwise dispose of any portion of the Contract shall not be construed to relieve the Contractor of any responsibility for the fulfillment of the Contract.

IV. SUCCESSORS AND ASSIGNEES

The Contractor binds its successors, executors, administrators and assignees to all covenants of this Contract. The Contractor shall not assign, sublet or transfer its interest in this Contract without the prior written consent of the Board, except as above set forth.

V. TERM OF CONTRACT

Time is of the essence. The Contractor shall complete the work under and pursuant to this Contract within 180 days, including Saturdays, Sundays, and holidays. Should the Contractor fail to do so, the Lake County Drainage Board is

entitled to and may retain, from compensation otherwise to be paid, or may otherwise pursue payment thereof, One Hundred Dollars (\$100.00) for each day, Sundays and holidays not included, that the work remains uncompleted beyond the specified period, which sum is agreed on as the proper measure of liquidated damages that Board will sustain by the failure of contractor to complete the work in the time stipulated, and this sum is not to be construed in any sense as a penalty.

When good cause for a delay in the work is shown by the Contractor, the Lake County Surveyor shall determine the seriousness of the delay and extend the time of completion of the work accordingly and in his sole discretion. Such good cause may include, but is not limited to, changes in the work, strikes, lockouts, or other labor disputes; fire, earthquake, or other natural disasters; unavoidable casualty or damage to personnel, materials, or equipment; delay in receiving materials or equipment; acts or neglect of the Board, the Board's representative, or an employee of either; acts or neglect of another Contractor employed by the Board, or any other person not directly responsible to Contractor; or other such similar cause beyond the control of the Contractor.

Any claim by Contractor for an extension of time must be made in writing to the Lake County Surveyor not more than one (1) day following the development of the cause for delay. However, in the case of a continuing cause of delay, only one claim need be made. Whenever the Lake County Surveyor or its representative in his or her own discretion determines that circumstances warrant an extension of time, he or she may grant such an extension until a claim of delay has been submitted by the Contractor.

VI. CHOICE OF LAW

This Contract shall be construed in accordance with and governed by the laws of the State of Indiana and suit, if any must be brought in Lake County, State of Indiana.

VII. INSURANCE/SECURITY/INDEMNITY

The Contractor shall carry or require that there be carried Workmen's Compensation Insurance for all its employees and those of its subcontractors in accordance with state or territorial Workmen's Compensation laws.

The Contractor shall carry or require that there be carried public liability and property damage insurance in amounts as outlined in IC 34-4-16.5-1 et. seq. to protect the Board and County, the Contractor and its subcontractors from claims which may arise from work under this Contract. The Board shall be named as an additional insured and be fully protected thereunder.

All insurance as required herein shall be effective for acts occurring during and shall be maintained during the entire life of this Contract.

The Contractor shall maintain during the term of the Contract a performance bond, payable to the Lake County Drainage Board, providing security for the Contractor's performance obligations in the amount of the Contract. Said bond may be reduced to an amount not less than the amount of the remaining item costs in said Contract.

The Contractor agrees to indemnify and hold harmless Lake County, the Lake County Drainage Board, the Lake County Surveyor, its officials, its departments, its boards, its employees, and its agents and assigns against all actions, claims or demands for damages of any kind whatsoever, known or unknown, which may

in any way be caused by the negligent acts of the Contractor, including but not limited to the negligent digging up of streets, alleys or public grounds, and by improper care of trees and shrubbery, or which may result from the default, carelessness or negligence of the Contractor, its agents, employees or workers under its control or direction in the performance of the work described herein, and shall refund and reimburse to the Lake County Drainage Board all sums which it may be obligated or adjudged to pay on any such claims or demands immediately upon such determination.

VIII. REMEDIES UPON DEFAULT

If either party of this Contract shall be in default of any of the terms and conditions hereof, the party complaining of the default shall notify the defaulting party in writing of the default complained of, and the defaulting party shall have ten (10) days from the date of receipt of said written notification in which to cure the default complained of therein. Only after the expiration of the ten (10) day period described herein may the parties resort to legal proceedings to enforce any of the terms and conditions of this Contract or to collect damages in a court of competent jurisdiction.

Should the Contractor be cited on three or more occasions by the Lake County Surveyor or Contract Engineer on the project, the Contract is subject to termination for cause, as determined by the Board at a public meeting.

IX. EQUAL OPPORTUNITY AND AFFIRMATIVE ACTION

The Contractor agrees by the execution of this contract that in regards to its operations:

- a. No person shall, on the grounds of race, color, national origin or sex, be excluded from participation or be denied the benefits thereof, or be subject to discrimination.
- b. The principals of equal opportunity in employment and delivery of services are applicable and the contractor commits to a policy and practice of nondiscrimination and affirmative action based upon age, military service, ancestry, color, national origin, physical handicap, political affiliation, race, religion and sex.
- c. The provisions of the Affirmative Action Program adopted by the Board of Commissioners of the County of Lake on May 31, 1977, as applicable, are incorporated by reference as part of this Contract.
- d. The provisions of all Federal Civil Rights laws and the Indiana Civil rights laws as applicable are incorporated by reference as part of this Contract.
- e. Breach of any of the equal opportunity and/or the nondiscrimination provisions of the Contract may be regarded as a material breach of the Contract.
- f. Where applicable, nondiscriminatory clauses and affirmative action clauses shall be made a part of any agreement, contract or lease between Contractor and any organization, corporation, subcontractor or other legal entity that benefits from the funds paid to contractor by this Contract.

X. LIMITATION OF AUTHORITY

The Contractor has no authority to obligate the Board on any contract or agreement of any kind, character or nature, nor for any expense, except as otherwise delineated in this Contract.

XI. PERSONNEL/INDEPENDENT CONTRACTOR

The Contractor represents that he has, or will secure at his own expense, all personnel required in performing the services under this Contract. Such

personnel shall not be employees of or have any contractual relationship with the Board. All of the services required hereunder will be performed by the Contractor or under his supervision, and all personnel engaged in the work shall be fully qualified to perform such services.

XII. ADDITIONAL SERVICES

In the event that any additional services are required of the Contractor that are over and above those described in the Contract and attachments hereto, the services shall not be performed without the express prior written agreement between the Board and Contractor. The scope of additional services and fees to be charged shall be specified in any such written authorization.

XIII. SUBSTANTIAL PERFORMANCE

This Contract shall be deemed to have been substantially performed only when fully performed according to its terms and conditions and any modification thereof.

XIV. 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 waive or excuse shall be in writing and signed by the party claimed to have waived such right.

XV. E-VERIFICATION

- A. IC 22-5-1.7 Chapter 1.7. Public Contract Services, Business Entities; Unauthorized Aliens.
- B. IC 22-5-1.7.2 "Contractor" As used in this chapter, "contractor" means a person that has or is attempting to enter into a public contract for services with a state agency or political subdivision.
- C. IC 22-5-1.7-3 "E-Verify program" As used in this chapter, "E-Verify program" means the electronic verification of work authorization program of the Illegal Immigration Reform and Immigration Responsibility Act of 1996 (P.L. 104-208), Division C, Title IV,s. 403(a), as amended, operated by the United States Department of Homeland Security or a successor work authorization program designated by the United States Department of Homeland Security or other federal agency authorized to verify the work authorization status of newly hired employees under the Immigration Reform and Control.
- D. IC 22-5-1.7-4 "Person" As used in this chapter, "person" means an individual, a corporation, a limited liability company, a partnership, or another legal entity.
- E. IC 22-5-1.7-5 "Political subdivision" As used in this chapter, "political subdivision" has the meaning set forth in IC 36-1-2-13.
- F. IC 22-5-1.7-6 "Public contract for services" As used in this chapter, "public contract for services" means any type of agreement between a state agency or a political subdivision and a contractor for the procurement of services.
- G. IC 22-5-1.7-9 "Unauthorized alien" As used in this chapter, "unauthorized alien" has the meaning set forth in 8 U.S.C. 1324a(h)(3).
- H. IC 22-5-1.7-11 Contractors with public contract for services required to use E-Verify program; business entities that receive certain grants required to use E-Verify program Sec. 11.
  - a. This subsection applies only to a public contract for services entered into or renewed after June 30, 2011. A state agency or political subdivision may not enter into or renew a public contract for services with a contractor unless:
    - 1. the public contract contains:

- A. a provision requiring the contract to enroll in and verify the work eligibility status of all newly hired employees of the contractor through the E-Verify program; and
- B. a provision that provides that a contractor is not required to verify the work eligibility status of all newly hired employees of the contractor through the E-Verify program if the E-Verify program no longer exists; and
- 2. the contractor signs an affidavit affirming that the contractor does not knowingly employ an unauthorized alien.
- b. A state agency or political subdivision may not award a grant of more than one thousand dollars (\$1,000) to a business entity unless the business entity:
  - 1. signs a sworn affidavit that affirms that the business entity has enrolled and is participating in the E-Verify program;
  - 2. provides documentation to the state agency or political subdivision that the business entity has enrolled and is participating in the E-Verify program; and
  - 3. signs an affidavit affirming that the business entity does not knowingly employ an unauthorized alien
- i. IC 22-5-1.7-15 Certification by subcontractor. If a contractor uses a subcontractor to provide services for work the contractor is performing under a public contract for services, the subcontractor shall certify to the contractor in a manner consistent with federal law that the subcontractor, at the time of certification:
  - 1. does not knowingly employ or contract with an unauthorized alien; and
  - 2. has enrolled and is participating in the E-Verify program.
- J. Affidavit by Contractor. By execution of this contract I swear under the penalties of perjury that my company does not knowingly employ an unauthorized alien.

XVI. MISCELLANEOUS PROVISIONS

This Contract represents the entire understanding between the parties, and modifications of this Contract shall not be effective unless reduced to writing and signed by both parties. In the event any portion or portions of this Contract are found to be void or voidable portions, these portions shall be stricken and the remaining portions enforced.

All provisions of State Law applicable to the County and/or governmental entity or entities which is/are a party to this Contract are incorporated by reference as a part of this contract.

In the event this Contract is not fully executed and approved prior to the date of commencement, it shall be deemed retroactive in force and effect to the date of commencement upon and after the full execution, approvals, required filing and recordation.

XVII. TERMINATION

Termination of Agreement. The County shall have the right to terminate this Contract, with or without cause, by giving written notice to the Consultant of such termination and specifying the effective date thereof, at least fourteen (14) days before the effective date of such termination. In addition, the Consultant may, for any cause, also terminate this Contract by giving written notice to the Lake County Surveyor of such termination and specifying the effective date thereof, at least fourteen (14) days before the effective date of such termination.

SUPPLEMENTAL BID PROPOSAL FORM (TO BE ATTACHED AND MADE PART OF FORM 96)

PROJECT: Main Beaver Dam Ditch Bank Stabilization – 1423 Edgewater Road – 2016

The undersigned, having familiarized himself/herself/themselves with local contract documents, comprised of the following:

1. Project documents for the project known as MAIN BEAVER DAM DITCH DITCH BANK STABILIZATION – 1423 EDGEWATER ROAD – 2016, Little Calumet River Watershed, Lake County, Indiana.

The undersigned has carefully inspected the site of the proposed work and can perform the various items of work for the unit prices/lump sums stipulated. All prices listed include any incidental work that may be necessary to complete the project in accordance with the provisions of the plans and specifications, as may be amended. The awarded Contractor will be responsible for all site safety, including both working and non-working hours to protect the public, throughout the duration of the contract.

Coordination will need to be established between the adjacent residents, the awarded Contractor and the Lake County Surveyors office regarding notifications, parking arrangements and safety, during both the pre-construction and construction phases of the project.

Item No.	Description And Calculation	Unit	Quantity	Unit Price	Total
<b>Main Beaver Dam Ditch Bank Stabilization – 1423 Edgewater Road – 2016</b>					
1	<b>Logjam Removal (Clearing &amp; Snagging)</b> STA 0+00 to 1+29 = 129 LF (south bank)	LFT	129	12.00	1548.00
2	<b>Tree Preservation and Protection</b> STA 0+25 (south bank) = 65 LF STA 1+02 (south bank) = 35 LF	LFT	100	2.00	200.00
3	<b>Channel Bank Fill (Slope Repair)</b> STA 0+00 to 1+29 = 129 LF (south bank)	CYS	10	20.00	200.00
4	<b>Vegetative Stabilization (Slope Mix)</b> STA 0+00 to 1+29 = 129 LF (vegetated fabric wraps and disturbed areas) 129 LF x 30 FT = 3,870 SF/43,560 = .1 AC	AC	.1	5000.00	500.00

SUPPLEMENTAL BID PROPOSAL FORM (TO BE ATTACHED AND MADE PART OF FORM 96)  
 PROJECT: Main Beaver Dam Ditch Bank Stabilization – 1423 Edgewater Road – 2016

Item No.	Description And Calculation	Unit	Quantity	Unit Price	Total
5	Sod Restoration As needed	SYS	670	6.00	4,020.00
6	Riprap Bank Repair STA 0+00 to 1+29 = 129 LF (south bank) 129 LF x 10.0 FT (avg) x 1.5 FT = 130 TON	TON	130	50.00	6,500.00
7	Channel Bank Stabilization (Fabric Wraps) STA 0+00 to 1+29= 129 LF (south bank)	LFT	129	274.50	35,410.50
8	Silt Fence STA 0+00 to 1+29= 129 LF (south bank)	LFT	129	3.00	387.00
<b>TOTAL BID PRICE</b>				<b>\$ 48,765.50</b>	
BIDDERS PROPOSAL FOR MAKING ENTIRE IMPROVEMENT – MAIN BEAVER DAM DITCH BANK STABILIZATION – 1423 EDGEWATER ROAD – 2016					
\$ <u>Forty Eight Thousand Seven Hundred Sixty five and 50/100</u> (WORDS)					
This proposal submitted this <u>16</u> day of <u>August</u> , 2016.					
Corporate Name: <u>R.A. Dros, Inc.</u>					
Address: <u>8244 Greenwood Ave.</u>					
<u>Munster, IN. 46321</u>					
By: <u>Emil L. Poppa</u>					
Title: <u>President</u>					