#### RESERVE AT HIDDEN LAKE-FINAL DRAINAGE PLAN REVISIONS

#### 13.04.085 Request by applicant for plan review and approval.

- A. All requests for drainage plan approval shall be made by the applicant to the drainage board through the county surveyor's office by the presentation to the surveyor of the drainage plan and the supporting data, all in duplicate, by the close of the business day two full weeks prior to the meeting at which approval of the drainage plan shall be sought.
- C. Included with the Drainage Plan shall be the following information regarding the applicant that shall be provided on FORM 801. Provided-signed by Matthew Whetsone, SVP

## 13.04.095 Conditions of drainage plan approval.

In order for an applicant to obtain approval of a final drainage plan, the following requirements must be met:

- A. The applicant shall be eligible under the terms of this chapter to apply for and obtain drainage plan approval.
- B. The drainage plan and supporting submittals required by this chapter shall have been prepared and submitted in a timely and proper manner in accordance with the provisions of this chapter. Submitted October 29, 2019. Revised email November 5, 2019, submittal November 8, 2019, submittal and email November 11, 2019
- C. The drainage plan and supporting submittals shall reflect compliance with the requirements of this chapter, and compliance with any conditions of approval applied to the plan by the drainage board.

  Required Revisions are shown in red.
- D. The submitted data shall be gathered, analyzed, assembled into the drainage plan and supporting submittals; and shall be certified, and presented to the drainage board all by a civil engineer or land surveyor regularly engaged in stormwater drainage design, and registered to practice in the state of Indiana. **Provided**
- E. An easement has been dedicated to house any off-site drainage facilities if such facilities are required to serve the project's stormwater drainage system. **No offsite proposed**
- F. The person, persons, partnership, corporation, or other entity to whom approval of the drainage plan is granted must be the person, persons, partnership, corporation, or entity who will be responsible for accomplishing the project for which the drainage plan is developed. First Bank of Carmi, 7500 Eagle Crest Blvd, Evansville, IN 47715

#### 13.04.140 Information submittal and review schedule.

H. For all new major subdivisions as defined in Title 16 of this code, which major subdivisions are shown to discharge an amount of stormwater in addition to that which is discharged prior to new

development and all minor subdivisions, C-0 Through M-3, as defined in Title 16 of this code, which minor subdivisions are zoned for commercial use, and all single parcel commercial and industrial parcels zoned C-0 through M-3 of 2 acres in size or greater that are adjacent to agriculture land use or single family homes, the applicant shall notify all adjoining landowners of the proposed drainage plan. The notification shall also be sent to any Registered Neighborhood Association within 1/4 mile of the proposed development and shall meet the criteria of notification.

1.	The notification shall consist of the following language.
325 bef	btice is hereby given that a Drainage Plan for with a location of has been submitted to the Vanderburgh County Surveyors Office, Room 5, Civic Center, Evansville, IN. The submitted Drainage Plan will be heard for approval or disapproval fore the Drainage Board meeting on (date and time) at Room 301 of the Civic Center. A copy of the ainage Plan is available for review in the County Surveyor's Office during normal business hours."
2. dev Pla	Also included in the notice shall be the name of the developer, name of the landowner where the relopment is to occur and the name of the engineer/engineering firm that has developed the Drainage in.
Ма	The notification shall occur by certified mail, delivery using approved overnight services providing that overnight services provide a receipt of delivery or by use of United States Postal Service Certificate of iling. All mailings must be made at least 7 days in advance of the scheduled Drainage Board meeting which the Drainage Plan is to be heard.
pre	isfy certain requirements of the Area Plan Commission (APC), the mailing shall give notice of the liminary plan. Once noticed for a preliminary plan, notice will not be required for hearing of the final sinage Plan unless stated by the Drainage Plan as a condition for approval of the preliminary Drainage
	Any required notice under this section may be done in conjunction with notice requirements by the ea Plan Commission provided that the required notice is sent at least 7 days in advance of the neduled Drainage Board meeting in which the Drainage Plan is to be heard.
13.	04.160 Contents of preliminary drainage plan. (As Applicable to review)
12	A copy of the Nation of Bublic Hearing as required by the Area Blan Commission and under Section

12. A copy of the Notice of Public Hearing as required by the Area Plan Commission and under Section 13.04.140 H of the Vanderburgh County Drainage Code with a copy of the returned receipts from all certified mailings or proof of Certificate of Mailing. Not Provided Provided

13.04.165 Contents of final drainage plan. (as required for revision)

The contents of the final Drainage Plan shall include all the items listed above for a preliminary drainage plan, plus:

- B. Location and Topographic Map. In addition, a location and topographic map must be provided showing the land to be developed, and such adjoining land whose location and topography may affect or be affected by the layout or drainage of the project. The map must also identify all adjoining landowners. Not all landowners shown The contour intervals shown on the topographic map shall be two and one-half feet for slopes less than four percent; and five feet for slopes four percent or greater; or best available; 1'
- F. The location of the following existing storm and water features:
- 1. Storm sewers and easements; Provided
- 2. Sanitary sewers and easements; Provided
- 3. Combined sewers and easements; None located on site
- Water lines and easements; Provided and outfalls to any of the above as applies;
- J. The location of the streets, lot lines, and easements; What is the line that goes through Lot 16? Lot was divided
- K. A scale, preferably one inch equals fifty (50) feet; 1"=40
- L. An arrow indicating North. Provided

## 13.04.170 Final drainage plan layout.

- A. In addition to the requirements listed for a preliminary drainage plan, the final drainage plan shall depict the following:
- 1. The extent and area of each watershed tributary to the drainage facilities within the project; No information on watershed feeding S-3 and other swales within the boundaries of the project. All swales were previously designed with submittal approved October 28, 2014 with only swale S-1 being revised.
- 2. The final layout and design of proposed storm sewers, their inlet and outfall locations and elevations, the receiving streams or channels; all with the basis of their design; The Storm Sewer Structure Data Table on Drawing C-101 lists several pipes which appear to be new as well as P1012 that appears to be existing. No other existing pipes are listed. If the Storm Sewer Structure Data Table is for new pipes only if so it should state; Table has been revised to show only new piping. is P1012 new or existing? Existing It appears that a new pipe is being placed between lots 10 and 11; where is the design and why is the existing pipe being replaced? Existing

- 3. The location and design of the proposed street system, including depressed pavements used to convey or detain overflow from storm sewers and over-the-curb runoff resulting from heavier rainstorms, and the outlets for such overflows; all with their designed elevations; **Street designs previously submitted.** All streets are private.
- 4. The locations, cross sections, and profiles of existing streams, floodways, and floodplains to be maintained, and the same for all new channels to be constructed; What direction does Swale S-3, S-6 and EO-3 flow? See also 13.04.180C Flow arrows have been added
- 5. The materials, elevations, waterway openings, size, and basis for design of the proposed culverts and bridges; No bridges or additional culverts from original design are proposed.
- 6. Existing ponds and basins to be altered, enlarged, filled, or maintained; and new ponds, basins, swales, to be built, and the basis of their design; Two Detention ponds designed in previous approval
- 7. The location and percentage of impervious surfaces existing and expected to be constructed; Information was provided on subwatersheds 12a-1, 12a-2, 12a-3 and 12a-4, but not on other subwatersheds that affect the designs of the pipes that are listed in the pipe design table. Revised table includes only new pipe which comes from subwatersheds 12a-1, 12a-2, 12a-3 and 12a-4 and therefore the information provided is sufficient with the revised table.
- 8. The material types, sizes, slopes, grades and other details of all the stormwater drainage facilities; Typical storm structure details not provided. Provided with submittal of sheet 502A
- The estimated depth and amount of storage required in the new ponds or basins, the freeboard above the normal pool and highwater pool of wet basins, and details of the emergency overflows from the basins; Previously designed
- 10. For all controlled release basins, a plot or tabulation of the storage volumes with corresponding water surface elevations, and a plot or tabulation of the basin outflow rates for those water surface elevations; **Previously designed**
- 11. The location of any applicable "impacted drainage areas" or other areas designated to remain totally undisturbed, natural, or for common and/or recreational use. Will the construction of the proposed drainage swales and installation of the piping affect any environmentally sensitive areas? Per comment letter submitted 11/8/2019 none are to be affected
- 12. The location of Drainage Easements for retention/detention basins, drainage ditches/swales, storm sewers, junction boxes, inlets, or manholes outside of any county right of way. Easements dimensions must be shown on each individual lot to the extent that they can be recreated in the field within the lot boundaries of said lot. It is not clear what are existing easements and where new easements are proposed. Revised drawing C101A shows area with new easements. C101A also includes a table listing properties where new easements are required. Easements will be required to be recorded

B. Protection of Structures From One Hundred Year Flooding. All structures to be occupied as residences or businesses shall have finished floor elevations two feet above the high water calculated to occur during a one hundred (100) year return period storm for the subject building site; and the required floor elevations shall be depicted on the plan drawings for such affected sites. NA

#### 13.04.175 Submittal of a written drainage design report.

The final drainage plan shall be accompanied by a written report containing the following:

- A. Any significant stormwater drainage problems existing or anticipated to be associated with the project; This should be addressed what is the purpose of this submittal/why is the drainage being altered? Addressed in comments and cover letter that was submitted as part of revision
- B. The analysis procedure used to identify and evaluate the drainage problems associated with the project; **Rational**
- C. Any assumptions or special conditions associated with the use of the procedures, especially hydrologic or hydraulic methods, used to identify and evaluate drainage problems associated with the project; Need to address in view that the area is steep slope. The subdivision has steep slopes
- D. Discussion of any permits applications submitted or proposed to be submitted to state and/or federal agencies that will affect the timing and/or construction of the Drainage Plan such as but not limited to United States Corp of Engineers 404 permits (both individual and nationwide), Indiana Department of Environmental permits (401 Water Certification and others), Indiana Department of Natural Resource Permits (Construction in Floodway) and any approvals that may be required to discharge to Indiana State Highways. The report should state the status of the application of such permits. For permits that have been approved, copies of the approval document shall be included with the Drainage Design Report including any conditions on approved permits that could affect the implementation of the Drainage Plan; Need to address Per response document no permits are required
- E. The proposed design of the drainage control system;
- F. The results of the analysis of the proposed drainage control system showing that it does solve the project's identified and anticipated drainage problems; Are there drainage and/or design problems on site and if so how will the proposed design alleviate these problems? How will the existing homeowners benefit from the revised design? Data used in the calculations will need to be revised to use the latest rainfall values from the Technical Memorandum. This may affect the capacity of pipe 1008. Per response document, Swale 1 has steep slopes that cannot be maintained and therefore area drains and piping will be installed. Other previously constructed swales are outside of the existing Drainage Easements and therefore new easements are being proposed. P1008 was designed as part of 2014 submittal using then approved values. This pipe has been installed. On the other piping the calculations have been revised to reflect current values.

- G. A detailed description, depiction, and log of all hydrologic and hydraulic calculations or modeling, and the results obtained thereby; together with the input and output files for all computer runs;
- H. Maps showing individual drainage areas within the project subdivided for use in the analysis thereof.

  Provided

#### 13.04.180 Typical cross sections of drainage facilities.

One or more typical cross sections must be provided for each existing and proposed channel, basin, pond, or other open drainage facility which cross sections:

A. For existing and proposed detention and retention basins and ponds, a minimum of two cross sections per basin with the cross sections being 90 degrees from each other. The cross sections shall show the following: **Basins are not being redesigned?-See 13.04.440** 

Minimum bottom of the basin, Pool Elevation (wet basins), side slope of the basins including above and below normal pool elevation for wet basins, elevation of water at designed storm, elevation of water at 100 year storm, elevation (bottom) of emergency spillway and elevation of outflow of 100 year storm within emergency spillway, elevation of existing land immediately adjacent to the basin, proposed surrounding topography including required maintenance pathway of new basins, fencing (if provided) and any easements or obstructions that are intersected by the cross section.

- B. For existing ditches and streams sufficient typical cross sections that capture the existing channel throughout the project area. The cross sections shall show the existing configuration and existing land immediately adjacent to all drainage facilities as well as any easements, property lines or obstructions that are intersected by the cross section. For all existing ditches a bottom profile line must also be provided. The profile line shall also show any existing structures (culverts, bridges, and other crossings), location of crossing utilities or other obstructions within the ditches or streams. NA
- C. For new channels and swales sufficient typical cross sections that capture the proposed configuration of new channels and swales throughout the project area. The cross sections shall show the proposed configuration of the channels and swales and existing land immediately adjacent to all drainage facilities as well as any easements, property lines or obstructions that are intersected by the cross section. Also a bottom profile line must also be provided. The profile line shall also show any existing structures (culverts, bridges, and other crossings), location of crossing utilities or other obstructions within the ditches or streams. No profiles or cross sections provided except for S-1 Typical cross section provided on sheet C502A. Profiles have been provided on sheets C-107 and C-108
- D. For large projects and subdivisions which will contain multiple swales, a typical cross section of the swale may be provided combined with a swale table listing each swale. The swale table shall include the slope of each swale (in lieu of profile), depth of water at designed storm and type of erosion control to be utilized on the channel bottom and side slopes.

E. Typical Cross sections shall be provided in the following situations where proposed excavation is proposed against no controlled properties: **NA** 

#### 13.04.350 Grass mix matched to site conditions.

The choice of grass mixture for stabilizing open channels shall be based upon specific site conditions such as shade and sun tolerance, velocity tolerance, and waterway maintenance requirements. The proposed seed mixture to be utilized for stabilizing open channels shall be included in the approved Drainage Plan. Not Provided Seeding information provided on revised drawing C101A

## 13.04.360 Erosion control by percentage of grade.

Several channels have extremely steep grades. Each proposed channel should be addressed with how the criteria of this section of the code will be addressed or if not a variance requested and the reason for the request by channel. Variance Letter has been provided that addresses requested variances required to meet code.

- A. The bottoms of seeded, grass-lined channels with grades from one percent to two percent shall have erosion control blankets properly installed.
- B. Channels with grades greater than two percent and up to six percent shall have bottoms lined in staked sod.
- C. All channels with grades greater than six percent shall have bottoms lined with six-inch riprap.
- D. Side banks of grass-lined channels with a grade of two percent or greater shall be protected by erosion control blankets installed coincidental with seeding, and in accordance with manufacturer's recommendations.

13.04.440 General detention/retention basin design requirements. It is correct in that the basins are not being modified/redesigned but only reconstructed to their original design? Basins not being redesigned-Drawing C101A has been modified to reflect this

## 13.04.460 Responsibility for drainage facility maintenance.

The installation, maintenance, repair, and replacement of all stormwater drainage facilities, and erosion and siltation control measures for a project during the period of construction, and until final approval by the county engineer, shall be the responsibility of the land developer(s), and/or the property owner(s) of record.

The assignment of responsibility for the maintenance and repair of all stormwater drainage systems and facilities outside of county accepted road rights-of-way after the completion of the project, and final approval thereof by the county engineer, shall be determined before the final drainage plan is approved; and shall be documented by appropriate covenants and restrictions applied to the subdivision and to the property deeds thereof, and shall be printed clearly upon all recorded plats of the project. The plat states

that the Homeowners Association shall be responsible for all piping; is the Homeowners Association aware that they will be assuming maintenance of additional piping? HOA will need to sign off on the Drainage Plan. The Drainage Plan (Drawing C101) must also state that should the HOA cease to exist than the individual lot owners shall be responsible for maintenance. Noted on Sheet C101A. This will be noted in the minutes of the Drainage Board.

### **GENERAL COMMENTS**

Drawing C101 has several notes that relate to activities required to bring the site into compliance. It appears some of these notes such as raise berm with side slope at 4:1, reconstruct second spillway, etc. are for work needed to bring the site to compliance to previous design and are not design changes. While these notes are useful, unless the areas are actually being modified from the previously approved plan they should be removed as it is difficult to discern what items are being requested for approval. If so desired by the Engineer, a separate work drawing can be supplied with the items previously listed. The notes have been removed

Why are existing homes as of 2014 shown? These should either be updated to show all home footprints or removed. Removed Drawing C101 is hard to read and the legend does not match with some of the lines. It also appears to show utilities that do not exist (pole in the middle of Lydia Court for example). Piping is shown as a solid line, there are double dashed lines that appear to be street curb lines, and a dashed line behind the 10' PUE which is not identified (if this is the building setback line it should be removed). Building set back line has been identified. The legend still does not match the drawing. Corrected with submittal of November 11, 2019

Drawing C106 does not include some of the pipes or revisions from C101. As only the 2000 series of piping is being added, C106 is sufficient.

Any variance to code should be summarized in a letter to the Board. It appears that some of those may include allowing existing trees within DE on S-4, swale S-1 over pipe not having a 1' bottom, as well as several swales with steep slopes that it assumed are being requested to be left as is. Letter provided.

## Hidden Lake-Revisions to Final Drainage Plan

The final drainage plan was submitted on October 29, 2019 with revisions submitted November 8, 2019 and November 11, 2019 and by email on November 5, 2019 and November 11, 2019. The plan that is requested to be approved consists of the submitted document and revisions and emails on the respective submitted dates along with the following drawings.

Drawings submitted October 29th, 2019

• C-106

Drawings submitted November 8th, 2019

- C-502A
- C-107
- C-108

Drawings submitted November 11th, 2019

• C-101A

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- 3 812.464.9585 office 812.464.2514 Fex
- 4800 Rosebud Ln., Newburgh, IN 47630
- morleycorp.com

November 8, 2019

Vanderburgh County Drainage Board Attn: Jeff Mueller, P.E. 1 NW Martin Luther King Jr Blvd Civic Center Complex, Rm 325 Evansville, IN 47708

Re: The Reserve at Hidden Lake Variance Request Morley Project # 8716.4.002-B

**Dear Board Members:** 

On behalf of the First National Bank of Carmi we submit to you the following variance requests from the Vanderburgh County Stormwater Drainage Control Ordinance.

- Section 13.04.315 A. Minimum Channel Depth: We ask that the minimum depth for Swale S-1 and S-6 be relaxed. Due to site constraints and the steep topography we can not achieve the minimum channel depth. We propose to regrade Swale S-1 and install area drains to make the swale manageable by the lot owners. Swale S-6 has already been constructed the depth varies along the swale.
- 2. Section 13.04.315 B. Minimum Bottom Width: We ask that the minimum bottom width for Swales S-1, S-4, S-6 and S-7 be relaxed. Due to site constraints and the steep topography we cannot achieve the minimum channel width. Swales S-4, S-6 and S-7 have already been constructed with a variable width bottom. We propose to regrade Swale S-1 and install area drains to make the swale manageable by the lot owners.
- 3. Section 13.04.360 Erosion control by percentage of grade: We ask that riprap not be required for Swales S-4, S-6 and S-7 where the slopes exceed six (6) percent. These swales have already been constructed and are established. To go back and install riprap would disturb already established areas. Where there are eroded areas within the swales we ask that a permanent turf reinforcement mat be allowed in lieu of riprap.
- 4. Section 13.04.375 Vee-Shaped Channels: We asked that vee-shaped channels be allowed for Swales S-1, S-4 and S-6. Due to site constraints and the steep topography we cannot achieve the minimum channel width. Swales S-4 and S-6 have already been constructed and are vee-shaped in some locations. In order to reduce the side slopes for Swale S-1, and to make it manageable by the lot owner, we request that it be constructed as a vee-shaped channel.
- 5. 13.04.395 E Channel Easements: Existing trees lie within the existing and proposed drainage easement for Swale S-4. The lot owners find these esthetically pleasing and the swale has been constructed around the existing trees. We request that these trees be allowed to remain.

QNA4



We humbly ask that you grant the requested variances.

Thank you,

Matt Calvert, P.E. **Staff Engineer** 

Cc: First National Bank of Carmi

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## NOTICE OF PUBLIC HEARING

Date: November 1, 2019

## To Whom It May Concern:

Notice is hereby given that a Drainage Plan for Hidden Lake Subdivision located on the west side of Jobes Lane at the intersection of Jobes Lane and Hidden Lake Drive has been submitted to the Vanderburgh County Surveyors Office, Room 325, Civic Center, Evansville, IN. The submitted Drainage Plan will be heard for approval or disapproval before the Drainage Board meeting on November 12, 2019 following the County Commissioners meeting at 3:00 PM in Room 301 of the Civic Center. A copy of the Drainage Plan is available for review in the County Surveyor's Office during normal business hours.

The following is information pertaining to Hidden Lake Subdivision project.

Developer: First National Bank of Carmi

Engineer: Morley

Sincerely,

Matt Calvert, PE

EMAIL 5/2019

The Reserve at Hidden Lake List of Property Owners October 25, 2019

Fot #	Owner	Location Address	Parcel Number	Owner Mailing Address	City	State	Zip
Outlot A	Reserve at Hidden Lake Home Owners Assoc. c/o First National Bank of Carmi	Jobes Lane	82-05-28-007-554.042-024	7500 Eagle Crest Blvd, Evansville, IN 47715	Evansville	Z	47712
1	RJC, Inc	5120 Hidden Lake Drive	82-05-28-007-554.001-024	11121 Pinewood Cir., Evansville, IN 47725	Evansville	z	47712
2	Bartuch, Michelle L	5128 Hidden Lake Drive	82-05-28-007-554.002-024	5128 Hidden Lake Drive	Evansville	Z	47712
3	Carpenter, Stephanie L	5132 Hidden Lake Drive	82-05-28-007-554.003-024	5132 Hidden Lake Drive	Evansville	Z	47712
4	Harvey, Patricia M Irr. Trust	741 Lydia Drive	82-05-28-007-554.004-024	741 Lydia Drive	Evansville	z	47712
വ	Carter, Henry R & Shelia K T/E	737 Lydia Drive	82-05-28-007-554.005-024	737 Lydia Drive	Evansville	2	47712
9	First National Bank of Carmi	733 Lydia Drive	82-05-28-007-554.006-024	7500 Eagle Crest Blvd, Evansville, IN 47715	Evansville	Z	47712
7	Wheeler, Shayne & Brandie T/E	729 Lydia Drive	82-05-28-007-554.007-024	729 Lydia Drive	Evansville	Z	47712
8	Poulton, Tyler L	725 Lydia Drive	82-05-28-007-554.008-024	725 Lydia Drive	Evansville	z	47712
6	Wiethop, Robert R & Carol A	721 Lydia Drive	82-05-28-007-554.009-024	721 Lydia Drive	Evansville	Z	47712
10	First National Bank of Carmi	717 Lydia Drive	82-05-28-007-554.010-024	7500 Eagle Crest Blvd, Evansville, IN 47715	Evansville	Z	47712
11 & Pt 12	RJC Inc	715 Lydia Drive	82-05-28-007-554.011-024	11121 Pinewood Cir., Evansville, IN 47725	Evansville	Z	47712
13 & Pt 12	Maerkl, John T & Rebecca A	707 Lydia Drive	82-05-28-007-554.013-024	707 Lydia Drive	Evansville	Z	47712
Pt 14 & Pt 15	Onan, Damone	701 Lydia Drive	82-05-28-007-554.014-024	701 Lydia Drive	Evansville	Z	47712
დ ეკ	Pt 16 Kern, Mary A	5233 Lydia Trl	82-05-28-007-554.015-024	5233 Lydia Tri	Evansville	Z	47712
17 & Pt 16	Bagby, Reba	5215 Lydia Trl	82-05-28-007-554.017-024	2107 Rollett Lane, Evansville, IN 47712	Evansville	z	47712
18	First National Bank of Carmi	5201 Lydia Trl	82-05-28-007-554.018-024	7500 Eagle Crest Blvd, Evansville, IN 47715	Evansville	Z	47712
19	First National Bank of Carmi	704 Lydia Ct	82-05-28-007-554.019-024	7500 Eagle Crest Blvd, Evansville, IN 47715	Evansville	Z	47712
20	First National Bank of Carmi	708 Lydia Ct	82-05-28-007-554.020-024	7500 Eagle Crest Blvd, Evansville, IN 47715	Evansville	Z	47712
21	First National Bank of Carmi	712 Lydia Ct	82-05-28-007-554.021-024	7500 Eagle Crest Blvd, Evansville, IN 47715	Evansville	Z	47712
22	First National Bank of Carmi	716 Lydia Ct	82-05-28-007-554.022-024	7500 Eagle Crest Blvd, Evansville, IN 47715	Evansville	z	47712
23	First National Bank of Carmi	720 Lydia Ct	82-05-28-007-554.023-024	7500 Eagle Crest Blvd, Evansville, IN 47715	Evansville	Z	47712
24	McWilliams, Brian Lee & Christen 730 Lydia Ct	730 Lydia Ct	82-05-28-007-554.024-024	730 Lydia Ct	Evansville	Z	47712
25	First National Bank of Carmi	719 Lydia Ct	82-05-28-007-554.025-024	7500 Eagle Crest Blvd, Evansville, IN 47715	Evansville	Z	47712
26	Blythe, Brandon K & Andrea D	715 Lydia Ct	82-05-28-007-554.026-024	715 Lydia Ct	Evansville	z	47712
27	RJCInc	709 Lydia Ct	82-05-28-007-554.027-024	11121 Pinewood Cir., Evansville, IN 47725	Evansville	z	47712
28	RJCInc	705 Lydia Ct	82-05-28-007-554.028-024	11121 Pinewood Cir., Evansville, IN 47725	Evansville	Z	47712
29	Theuri, Serah W	706 Lydia Dr	82-05-28-007-554.029-024	706 Lydia Dr	Evansville	Z	47712
90	First National Bank of Carmi	710 Lydia Dr	82-05-28-007-554.030-024	7500 Eagle Crest Blvd, Evansville, IN 47715	Evansville	Z	47712
31	Overton, Patricia	714 Lydia Dr	82-05-28-007-554.031-024	714 Lydia Dr	Evansville	Z	47712
32	King, Matthew S	718 Lydia Dr	82-05-28-007-554.032-024	718 Lydia Dr	Evansville	Z	47712
33	Staley, Sandra	722 Lydia Dr	82-05-28-007-554.033-024	722 Lydia Dr	Evansville	z	47712
\$	Lampton, Donna & Giesman	726 Lydia Dr	82-05-28-007-554.034-024	726 Lydia Dr	Evansville	z	47712
35	McDonald, Lisa L	730 Lydia Dr	82-05-28-007-554.035-024	730 Lydia Dr	Evansville	Z	47712
36	Nicholson, Julie A	738 Lydia Drive	82-05-28-007-554.036-024	738 Lydia Drive	Evansville	2	47712
37	Sheldon, Geoffrey L & Christine A 740 Lydia Drive	740 Lydia Drive	82-05-28-007-554.037-024	740 Lydia Drive	Evansville	Z	47712
38	RJC Inc	5131 Hidden Lake Drive	82-05-28-007-554.038-024	11121 Pinewood Cir., Evansville, IN 47725	Evansville	Z	47712
39	Pemberton, Doros J	5129 Hidden Lake Drive	82-05-28-007-554.039-024	5129 Hidden Lake Drive	Evansville	Z	47712
40	Tople, Vinit & Samant, Prachi		82-05-28-007-554.040-024	3208 176th Ct NE, Redmond, WA 98052	Evansville	Z	47712
4	Tople, Vinit & Kelkar, Devika	5119 Hidden Lake Drive	82-05-28-007-554.041-024	819 Tawny Drive, Evansville, IN 47712	Evansville	Z	47712



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# **Letter of Transmittal**

Regarding: The Reserve at Hidden Lake

Vanderburgh County Surveyor To:

1 NW Martin L King Jr. Blvd.

Room 325

Evansville, IN 47708

Project No: 8716.4.002-B

Date:

November 11, 2019

We are sending you by: Messenger

We are sending:

COPIES	DOC. DATE	DESCRIPTION
2	11/11/19	Amended Drainage Plan Rev1 – Sheet C101A
1	11/08/19	Variance Request
3		
		APPROVE
		MON 1 2 2019

These are transmitted: For Approval

Remarks:

Copies to:

The First National Bank of Carmi

Signed:

2019.11.11\_8716\_ LOT Co Surveyor.docx

Matt Calvert, PE

- DERELATE



- » 812.464.9585 office 812.464.2514 Fax
- ▶ 4800 Rosebud Ln., Newburgh, IN 47630
- morleycorp.com

# Letter of Transmittal

Regarding: The Reserve at Hidden Lake

To: Vanderburgh County Surveyor

1 NW Martin L King Jr. Blvd.

Room 325

Evansville, IN 47708

Project No: 8716.4.002-B

Date:

November 8, 2019

We are sending you by: Messenger

We are sending:

COPIES	DOC. DATE	DESCRIPTION
2	11/07/19	Amended Drainage Plan Rev1 – Sheet C101A
2	11/07/19	Swale 4 and 6 Plan and Profile – Sheet C-107
2	11/07/19	Swale 7 Plan and Profile – Sheet C-108
2	11/07/19	Amended Drainage Details – Sheet C502A
2	11/07/19	Amended Drainage Calculations
1	11/08/19	Letter to Drainage Board
1	11/08/19	Engineers Response to Review Document
1	11/08/19	Variance Request

These are transmitted: For Approval

Remarks:

Copies to:

The First National Bank of Carmi

Signed:

Matt Calvert, PE



- > 812.464,9585 office 812,464,2514 Fax
- 4800 Rosebud Ln., Newburgh, IN 47630
- morleycorp.com

November 8, 2019

Vanderburgh County Drainage Board Attn: Jeff Mueller, P.E. 1 NW Martin Luther King Jr Blvd Civic Center Complex, Rm 325 Evansville, IN 47708

Re: The Reserve at Hidden Lake Amendments to the Final Drainage Plan Morley Project # 8716.4.002-B

Dear Board Members:

On behalf of the First National Bank of Carmi we submit to you an amended drainage plan for The Reserve at Hidden Lake. We submit this plan in hopes of fixing the drainage issues that exist within the subdivision. Due to the site constraints and steep topography of the site there are existing swales that have steep and unmanageable side slopes and swales that lie outside of the recorded drainage easements. We offer the proposed amendments to provide a manageable drainage system for the Homeowners Association.

We humbly ask for your approval of the amended drainage plan.

Thank you.

Matt Calvert, P.E. Staff Engineer

Cc: First National Bank of Carmi

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J:\8000s\8700-8799\8716\Civil\Documents\2019.11.08\_8716\_Cover Letter.docx

PROMINED BY THE CONTROL OF SURVEYOR'S OFFICE

- > 812.464.9585 office 812.464,2514 Fax
- > 4800 Rosebud Ln., Newburgh, IN 47630
- morleycorp.com

November 8, 2019

Vanderburgh County Surveyor Attn: Jeff Mueller, P.E. 1 NW Martin Luther King Jr Blvd Civic Center Complex, Rm 325 Evansville, IN 47708

Re: The Reserve at Hidden Lake Vanderburgh County Surveyor Comments Morley Project # 8716.4.002-B

#### Dear Jeff:

Below is our response to the review document we received via email on Monday, November 4, 2019. Our response is in order of the comments received.

- 1. 13.04.160 12: The drainage notice and certificates of mailing were email to you on Tuesday, November 5, 2019.
- 2. 13.04.16 B: All landowners within the subdivision and all adjoiners have been added the Sheet C101A, Amendment to the Final Drainage Plan.
- 3. 13.01.16 J: Lot 16 was subdivided in 2019. This line represents the new property line.
- 4. 13.04.170 1: Only watershed 12a was amended as part of the amended drainage plan therefore no other watershed data was revised or submitted.
- 13.04.170 2: The Storm Sewer Structure Data Table on Sheet C101A has been revised to only show the new storm structures and pipes. All other storm sewer pipes and structures shown Sheet C101A have already been installed as part of the original submittal.
- 6. 13.04.170 4: Flow arrows have been added to the swales on Sheet C101A.
- 7. 13.04.170 7: Only watershed 12a was amended as part of the amended drainage plan therefore no other watershed data was revised or submitted.
- 8. 13.04.170 8: We have added Sheet C502A, Amendment to the Storm Sewer Drainage Details.
- 9. 13.04.170 11: No none environmentally sensitive areas will be affected as a part of the proposed amendments.



- 10. 13.04.170 12: We have updated the line weights of the proposed drainage easements and have added additional text noting the new easements on Sheet C101A.
- 11. 13.04.175 A: Due to site constraints, steep topography and work performed by the lot owners and their builders the approved drainage plan needs to be amended to reflect current conditions and to correct areas that are not in compliance with the drainage ordinance. Our solution to some of the areas will not meet the requirements of the drainage ordinance and therefore we have submitted a variance request to address these areas.
- 12. 13.04.175 C: Steep slopes have caused drainage problems within the subdivision.
- 13. 13.04.175 D: There are no none permits required for the proposed amendments.

#### 14. 13.04.175 F:

- a. Swale 1 has steep slopes that are hard to maintain. As a part of the proposed amendments Swale 1 will be regraded and area drains installed to reduce the steep slopes and make it manageable. In other areas the existing swales are outside of the recorded drainage easements. Instead of relocating the swales we are asking the lot owners for additional drainage easements.
- b. We have updated our drainage calculations with the most current runoff coefficients and intensities has published in the current drainage ordinance.
- c. Pipe 1008 is existing and will not be altered as a part of the proposed amendments.
- 15. 13.04.180 C: We have added plan and profiles for Swales S-4, 6 and 7. Refer to Sheets C-107 and C-108. A typical swale cross section can be found on Sheet C502A.
- 16. 13.04.350: The required seeding requirements have been added to Sheet C101A.
- 17. 13.04.360: We have submitted a variance request to address these areas.
- 18. 13.04.440: The detention basins are not being redesigned. We have updated Sheet C101A to reflect this.
- 19. 13.04.460: We have added General Note 7 to Sheet C101A to address this.

### General Comments

- 1. We have removed the notes on Sheet C101A that relate to activities required to bring the site into compliance.
- 2. We have added additional notations, removed utilities that no longer exist and those that do not pertain to the drainage of the subdivision and removed the homes that existed in 2014 when the plan was originally approved to help clarify the plan.



- 3. Sheet C-106 only reflect the new pipes and structures that are being proposed as a part of the amended drainage plan.
- 4. We have submitted a variance request to address these issues.

We believe that we have sufficiently addressed all the comments received to date and therefore on behalf of the developer, First National Bank of Carmi, we ask that the amended drainage plan be submitted to the Vanderburgh County Drainage Board for approval.

Thank you,

Matt Calvert, P.E. Staff Engineer

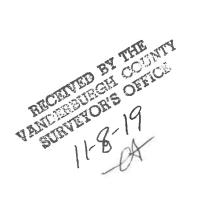
Cc: First National Bank of Carmi

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	Develope	ed OnSite S	Subbasi	n #12a-1			11/6/19
Surface	18811	Area (S.F.)				С	N
Structures (>10%)		7,038	=	0.16	Ac.	0.98	0.02
Drives		0	=	0.00	Ac.	0.92	0.02
Pavement		0	=	0.00	Ac.	0.92	0.02
Patios (2-5%)		900	=	0.02	Ac.	0.94	0.02
Sidewalks		0	=	0.00	Ac.	0.92	0.02
Cultivated Field							
Less then 2%		0	=	0.00	Ac.	0.20	0.20
2% to 5%		0	=	0.00	Ac.	0.35	0.20
5% to 10%		0	=	0.00	Ac.	0.50	0.20
Over 10%		0	=	0.00	Ac.	0.65	0.20
Woodland							
Less then 2%		0	=	0.00	Ac.	0.12	0.60
2% to 5%		0	=	0.00	Ac.	0.24	0.60
5% to 10%		0	=	0.00	Ac.	0.36	0.60
Over 10%		0	=	0.00	Ac.	0.48	0.60
Lawn	10,873						
Less then 2%	0%	0	=	0.00	Ac.	0.15	0.40
2% to 5%	57%	6,198	=	0.14	Ac.	0.25	0.40
5% to 10%	17%	1,848	=	0.04	Ac.	0.40	0.40
Over 10%	26%	2,827	=	0.06	Ac.	0.55	0.40
Water		0	=	0.00	Ac.	1.00	0.00

Sheet Flow		
L =	60	Ft.
H =	2.0	Ft.
S =	0.033	Ft./Ft.
t1 =	6.35	Minutes
Shallow Concentrat	ed Flow	
L =	0	Ft.
H =	0.0	Ft.
S =	0.000	Ft./Ft.
V =	0.00	Ft./Sec.
t2 =	0.00	Minutes
tc =	6.35	Minutes
l(25) =	6.862	In./Hr.
Q(25) =	1.83	CFS



	Develope	ed OnSite	Subbas	in #12a-2			11/6/19
Surface	9591	Area (S.F.)				С	N
Structures (>10%)		2,969	=	0.07	Ac.	0.98	0.02
Drives		0	=	0.00	Ac.	0.92	0.02
Pavement		0	=	0.00	Ac.	0.92	0.02
Patios (2-5%)		450	=	0.01	Ac.	0.94	0.02
Sidewalks		0	=	0.00	Ac.	0.92	0.02
Cultivated Field							
Less then 2%		0	=	0.00	Ac.	0.20	0.20
2% to 5%		0	=	0.00	Ac.	0.35	0.20
5% to 10%		0	=	0.00	Ac.	0.50	0.20
Over 10%		0	=	0.00	Ac.	0.65	0.20
Woodland							
Less then 2%		0	=	0.00	Ac.	0.12	0.60
2% to 5%		0	=	0.00	Ac.	0.24	0.60
5% to 10%		0	=	0.00	Ac.	0.36	0.60
Over 10%		0	=	0.00	Ac.	0.48	0.60
Lawn	6,172						
Less then 2%	0%	0	=	0.00	Ac.	0.15	0.40
2% to 5%	57%	3,518	=	0.08	Ac.	0.25	0.40
5% to 10%	17%	1,049	=	0.02	Ac.	0.40	0.40
Over 10%	26%	1,605	=	0.04	Ac.	0.55	0.40
Water		0	=	0.00	Ac.	1.00	0.00

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H =	2.0	Ft.
S =	0.042	Ft./Ft.
t1 =	5.69	Minutes
Shallow Concentrate	ed Flow	
L =	0	Ft.
H =	0.0	Ft.
S =	0.000	Ft./Ft.
V =	0.00	Ft./Sec.
t2 =	0.00	Minutes
tc =	5.69	Minutes
I(25) =	7.031	ln./Hr.
Q(25) =	0.89	CFS

	Develope	ed OnSite S	Subbasi	in #12a-3			11/6/19
Surface	9702	Area (S.F.)				С	N
Structures (>10%)		3,958	=	0.09	Ac.	0.98	0.02
Drives		0	=	0.00	Ac.	0.92	0.02
Pavement		0		0.00	Ac.	0.92	0.02
Patios (2-5%)		450	=	0.01	Ac.	0.94	0.02
Sidewalks		0	=	0.00	Ac.	0.92	0.02
Cultivated Field							
Less then 2%		0	=	0.00	Ac.	0.20	0.20
2% to 5%		0	=	0.00	Ac.	0.35	0.20
5% to 10%		0	=	0.00	Ac.	0.50	0.20
Over 10%		0	=	0.00		0.65	0.20
Woodland							
Less then 2%		0	=	0.00	Ac.	0.12	0.60
2% to 5%		0	=	0.00		0.24	0.60
5% to 10%		0	=	0.00		0.36	0.60
Over 10%		0	=	0.00		0.48	0.60
Lawn	5,294						
Less then 2%	0%	0	=	0.00	Ac.	0.15	0.40
2% to 5%	57%	3,018	=	0.07		0.25	0.40
5% to 10%	17%	900		0.02		0.40	0.40
Over 10%	26%	1,376	=	0.03		0.55	0.40
Water		_ 0	=	0.00	Ac.	1.00	0.00
	Total Area	9,702	_	0.22	۸۵	0.64	0.23

Sheet Flow		
L =	51	Ft.
H =	3.0	Ft.
S =	0.059	Ft./Ft.
t1 =	5.03	Minutes
Shallow Concentrat	ed Flow	
L =	0	Ft.
H =	0.0	Ft.
S =	0.000	Ft./Ft.
V =	0.00	Ft./Sec.
t2 =	0.00	Minutes
tc =	5.03	Minutes
I(25) =	7.200	ln./Hr.
Q(25) =	1.02	CFS

	Develope	ed OnSite	Subbas	sin #12a-4			11/6/19
Surface	15373	Area (S.F.)				С	N
Structures (>10%)		6,989	=	0.16	Ac.	0.98	0.02
Drives		0	=	0.00	Ac.	0.92	0.02
Pavement		0	=	0.00	Ac.	0.92	0.02
Patios (2-5%)		900	=	0.02	Ac.	0.94	0.02
Sidewalks		0	=	0.00	Ac.	0.92	0.02
Cultivated Field							
Less then 2%		0	=	0.00	Ac.	0.20	0.20
2% to 5%		0	=	0.00	Ac.	0.35	0.20
5% to 10%		0	=	0.00	Ac.	0.50	0.20
Over 10%		0	=	0.00	Ac.	0.65	0.20
Woodland							
Less then 2%		0	=	0.00	Ac.	0.12	0.60
2% to 5%		0	=	0.00	Ac.	0.24	0.60
5% to 10%		0	=	0.00	Ac.	0.36	0.60
Over 10%		0	=	0.00		0.48	0.60
Lawn	7,484						
Less then 2%	0%	0	=	0.00	Ac.	0.15	0.40
2% to 5%	57%	4,266	=	0.10		0.25	0.40
5% to 10%	17%	1,272	=	0.03	Ac.	0.40	0.40
Over 10%	26%	1,946	=	0.04	Ac.	0.55	0.40
Water		0	=	0.00	Ac.	1.00	0.00
	Total Area	15,373		0.35		0.67	0.20

Sheet Flow		
L =	64	Ft.
H =	7.0	Ft.
S =	0.109	Ft./Ft.
t1 =	4.61	Minutes
Shallow Concentrate	ed Flow	
L =	0	Ft.
H =	0.0	Ft.
S =	0.000	Ft./Ft.
V =	0.00	Ft./Sec.
t2 =	0.00	Minutes
tc =	5.00	Minutes
I(25) =	7.208	In./Hr.
Q(25) =	1.71	CFS

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1202	*DO#2004	1#2002	AD#2000	0.2)	0.5/	0.22 0.125	0.125	0.392	5.69	6.82	6.741	2.64	12	449.72	449.03	0.0095	4.10	5.23	0.23	64.4
C-62-1	AC#2000	1007#1	AD#1005	8.8	0.64	0.22 0.141	0.141	0.533	5.03	7.05	6.682	3.56	12	449.03	446.50	0.0518	9.58	12.20	0.07	37.2





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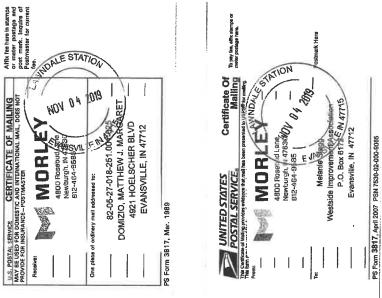
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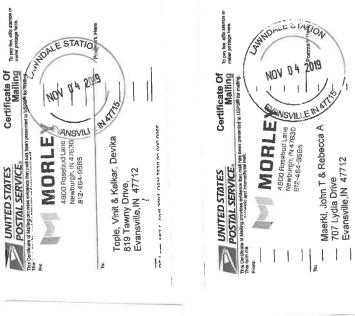
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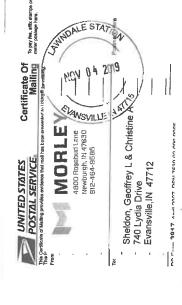
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Evansville, IN 47712

729 Lydia Drive



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King, Matthew S

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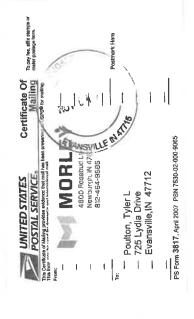


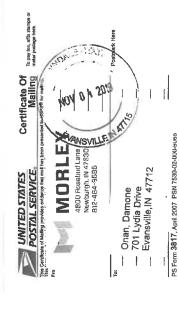


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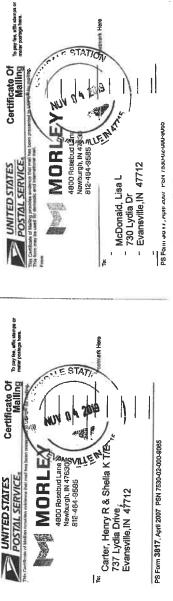
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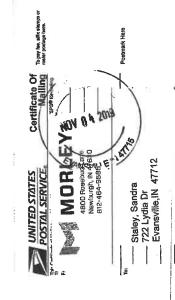
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PS Form **3817**, April 2007 PSN 7530-02-000-9065



PS Form 3817, April 2007 PSN 7530-02-000-9065



- » 812.464.9585 office 812.464.2514 Fax
- > 4800 Rosebud Ln., Newburgh, IN 47630
- > morleycorp.com

## Letter of Transmittal

**Regarding:** The Reserve at Hidden Lake

To: Vanderburgh County Surveyor

1 NW Martin L King Jr. Blvd.

Room 325

Evansville, IN 47708

**Project No:** 8716.4.002-B

Date:

October 29, 2019

We are sending you by: Messenger

## We are sending:

COPIES	DOC. DATE	DESCRIPTION
2	10/28/19	Drainage Plan Rev1 – Sheet C101
2	10/28/19	Storm Sewer Line '1' - Sheet C106
2	10/28/19	Revised Drainage Calculations
1	10/28/19	Form 801

These are transmitted: For Approval

#### Remarks:

Jeff.

On behalf of The First National Bank of Carmi we ask that you please review the revised drainage plan and calculations and if found acceptable bring it before the Vanderburgh County Drainage Board for acceptance.

Copies to:

The First National Bank of Carmi

Signed:

Matt Calvert, PE

## **APPLICANT INFORMATION FORM 801**

The December of Hillshop Labor

Project Name:	The Reserve at Hidden Lake
Approximate Location:	Hidden Lake Drive and Jobes Lane
Applicant Name:	First Bank of Carmi
Applicant is (check one)	<ul><li>☐ Individual (s)</li><li>☐ Partnership or legal LLC</li><li>☑ Corporation</li></ul>
Applicant Address: City: State: Zip Code:	7500 Eagle Crest Blvd Evansville Indiana 47715
Email:	mwhetstone@firstbank.bz
For Individual (s)	
further understand that upon completion estatement as required by the Vanderburgh provide such certification could result in fit	on contained on this application is to true and correct. I (we) of the project that an as built drawing or certification a County Code will be submitted as required and that failure to nes under Section 13.04.110 and/or make me (us) ineligible that time as an as built drawing or certification is submitted.
Signature	Date Click here to enter a date.
Signature	Date Click here to enter a date.
For Partnership (s)	

I (we) do hereby certify that the Information contained on this application is to true and correct. I (we)

statement as required by the Vanderburgh County Code will be submitted as required and that failure to provide such certification could result in fines under Section 13.04.110 and/or make me (us) ineligible for future drainage plan approvals until such time as an as built drawing or certification is submitted.

further understand that upon completion of the project that an as built drawing or certification

Signature of Senior or Managing Partner		
Printed Name		
Date		
If partnership does not have a Senior or Mana	aging Partner than signatures of all partners	
Signature	Date	
Printed Name		
Signature	Date	
Printed Name		
Signature	Date	
Printed Name		
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Printed Name		
For Corporation		
I do hereby certify that the Information conta	ined on this application is to true and correct. I fu	rther
understand that upon completion of the proje	ect that an as built drawing or certification statem	ent as
	ll be submitted as required and that failure to pro	
	n 13.04.110 and/or make the corporation ineligibl	
future drainage plan approvals until such time	e as an as built drawing or certification is submitte	d.
Signature And Lateth	Date	
Printed Name Matthew T Whatstone		
	e if not a vice president or above of applicant com	ipany,
than attached a Delegation of Authority)		• • •

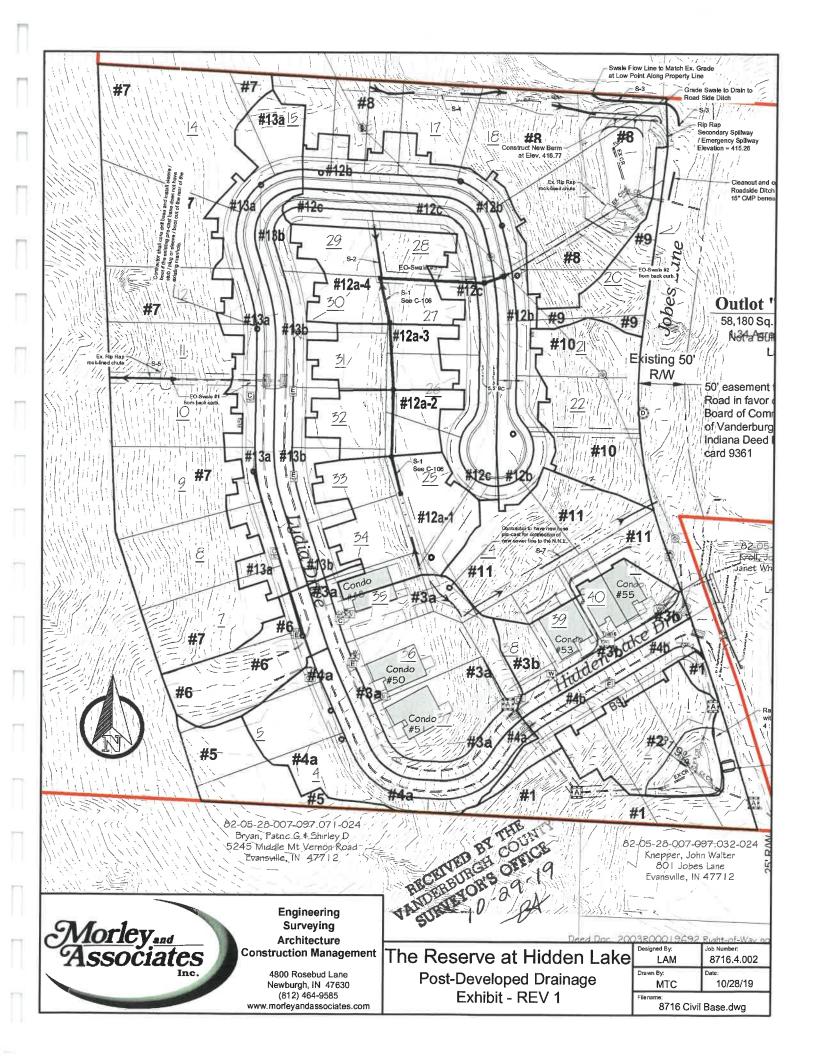
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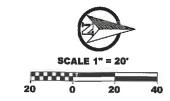
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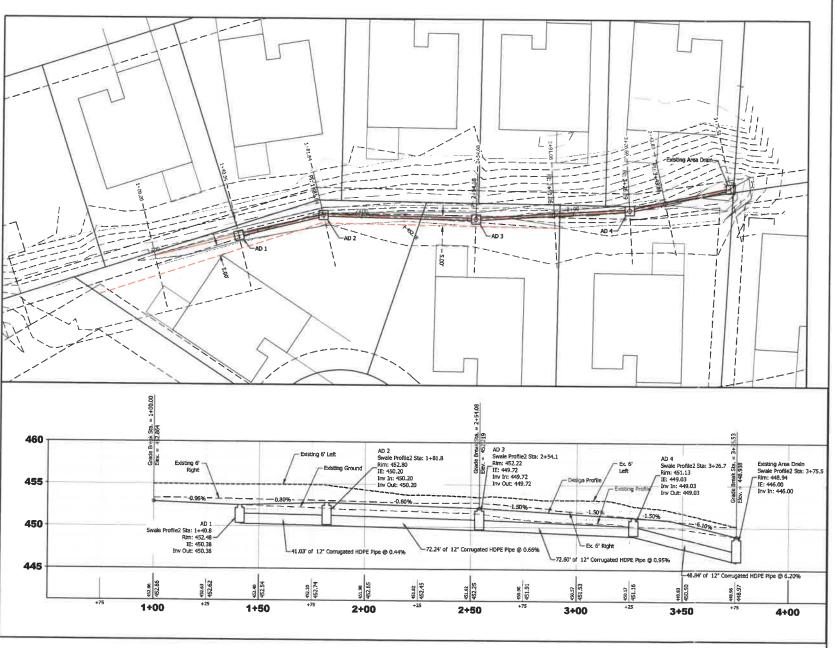
Lot #	Owner	Location Address	Parcel Number
15 & Pt 16	Kern, Mary A	5233 Lydia Trl	82-05-28-007-554.015-024
17 & Pt 16	Bagby, Reba	5215 Lydia Trl	82-05-28-007-554.017-024
18	First National Bank of Carmi	5201 Lydia Trl	82-05-28-007-554.018-024
24	First National Bank of Carmi	730 Lydia Ct	82-05-28-007-554.024-024
25	First National Bank of Carmi	719 Lydia Ct	82-05-28-007-554.025-024
26	First National Bank of Carmi	715 Lydia Ct	82-05-28-007-554.026-024
27	R J C Inc	709 Lydia Ct	82-05-28-007-554.027-024
28	R J C Inc	705 Lydia Ct	82-05-28-007-554.028-024
29	Theuri, Serah W	706 Lydia Dr	82-05-28-007-554.029-024
30	First National Bank of Carmi	710 Lydia Dr	82-05-28-007-554.030-024
31	Overton, Patricia	714 Lydia Dr	82-05-28-007-554.031-024
32	King, Matthew S	718 Lydia Dr	82-05-28-007-554.032-024
33	Staley, Sandra	722 Lydia Dr	82-05-28-007-554.033-024
34	Lampton, Donna & Giesman	726 Lydia Dr	82-05-28-007-554.034-024
35	Mcdonald, Lisa L	730 Lydia Dr	82-05-28-007-554.035-024

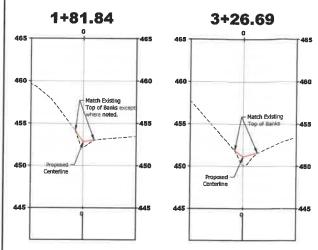
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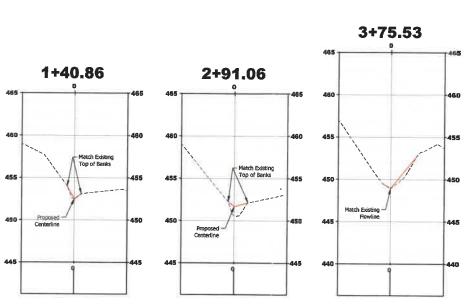
				Stor	m Swal	le Data Tal	ole - (R	EV 1, 10-2	8-19)					
Manning's Coe	fficient =	0.035	(Table 13.	04.220)										
Slope (ft/ft)	Slope (%)	Side Slope (X:1)	Length (ft)	Channel Depth (MIN) (ft)	Bottom Width (ft)	Wetted Perimeter (ft)	Area (ft²)	Hydraulic Radius (ft)	Hydraulic Depth (ft)	Channel Capacity (cfs)	Full Depth Velocity (ft/s)	Travel Time (min)	US Elev.	DS Elev.
S-1 0.009	0.93	3.0	40.8	1.00	1.00	7.32	4.00	0.55	0.57	10.98	2.74	0.25	452.86	452.48
0.008	0.93	3.0	41.0	1.00	1.00	7.32	4.00	0.55	0.57	10.05	2.51	0.27	452.80	452.48
0.008	0.78	3.0	72.0	1.00	1.00	7.32	4.00	0.55	0.57	10.03	2.55	0.47	452.80	452.22
0.008	1.51	3.0	89.7	1.00	1.00	7.32	4.00	0.55	0.57	13.96	3.49	0.43	452.22	450.87
0.045	4.51	3.0	31.7	1.00	1.00	7.32	4.00	0.55	0.57	24.16	6.04	0.09	450.87	449.44
S-2 0.062	6.18	3.0	56.8	1.00	1.00	7.32	4.00	0.55	0.57	28.28	7.07	0.13	453.00	449.49
S-3														
0.020	2.04	3.0	208.0	1.00	1.00	7.32	4.00	0.55	0.57	16.26	4.07	0.85	416.18	411.93
S-4														
0.129	12.91	3.0	49.2	1.00	1.00	7.32	4.00	0.55	0.57	40.87	10.22	0.08	459.40	453.05
0.174	17.44	3.0	69.4	1.00	1.00	7.32	4.00	0.55	0.57	47.51	11.88	0.10	453.05	440.9
0.267	26.74	3.0	31.3	1.00	1.00	7.32	4.00	0.55	0.57	58.83	14.71	0.04	440.95	432.58
0.164	16.44	3.0	98.4	1.00	1.00	7.32	4.00	0.55	0.57	46.13	11.53	0.14	432.58	416.40
0.141	14.12	3.0	17.0	1.00	1.00	7.32	4.00	0.55	0.57	42.75	10.69	0.03	416.40	414.00
S-5														
0.147	14.68	3.0	66.0	1.00	1.00	7.32	4.00	0.55	0.57	43.59	10.90	0.10	444.69	435.00
S-6														
0.132	13.18	3.0	55.0	1.00	1.00	7.32	4.00	0.55	0.57	41.31	10.33	0.09	453.25	446.00
0.170	16.99	3.0	47.1	1.00	1.00	7.32	4.00	0.55	0.57	46.89	11.72	0.07	446.00	438.00
0.170	17.03	3.0	41.1	1.00	1.00	7.32	4.00	0.55	0.57	46.95	11.74	0.06	438.00	431.00
0.291	29.14	3.0	, 16.3	1.00	1.00	7.32	4.00	0.55	0.57	61.42	15.35	0.02	431.00	426.25
5-7								A 17						
0.142	14.19	3.0	68.3	1.00	1.00	7.32	4.00	0.55	0.57	42.85	10.71	0.11	446.00	436.31
0.126	12.63	3.0	49.5	1.00	1.00	7.32	4.00	0.55	0.57	40.43	10.11	0.08	436.31	430.06
0.078	7.84	3.0	53.7	1.00	1.00	7.32	4.00	0.55	0.57	31.86	7.96	0.11	430.06	425.85
0.088	8.83	3.0	43.6	1.00	1.00	7.32	4.00	0.55	0.57	33.81	8.45	0.09	425.85	422.00
0.147	14.70	3.0	27.9	1.00	1.00	7.32	4.00	0.55	0.57	43.61	10.90	0.04	422.00	417.90
	Emergency Ove											201	150.50	440.55
0.109	10.94	3.0	96.0	0.25	5.00	6.58	1.44	0.22	0.22	7.34	5.11	0.31	458.50	448.00
	Emergency Ove				5.00	0.50				10.75	7.50	0.00	440.00	447.55
0.236	23.62	3.0	124.0	0.25	5.00	6.58	1.44	0.22	0.22	10.79	7.50	0.28	446.29	417.00
	Emergency Ove			0.00		2.50			0.00		0.00	0.04	150.00	440.00
0.035	3.50	3.0	106.0	0.25	5.00	6.58	1.44	0.22	0.22	4.15	2.89	0.61	450.00	446.29

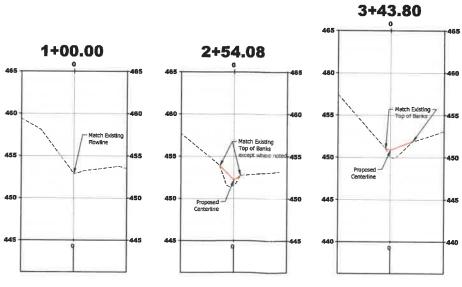














The Reserve at Hidden Lake

Option 2 Plan and **Profile** 

Swale Redesign

Scale: 1" = 20' H; 1" = 5' V 3db Humber: 8716.4.001B on By: JDS 06/19/2019

8716 As-builts 2019 Base Option 2

Option 2