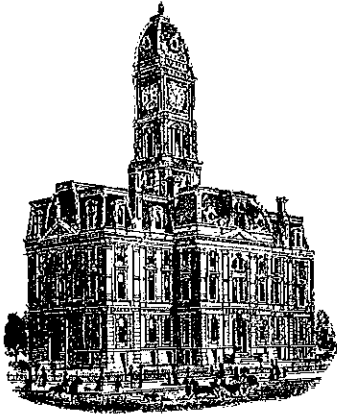


KCW



SURVEYOR'S OFFICE
Hamilton County

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Suite 188
One Hamilton County Square
Noblesville, Indiana 46060-2230

November 30, 2020

TO: Hamilton County Drainage Board
RE: Mallery-Granger Drain Reconstruction

Attached is a drainage map, drainage shed map and schedule of assessments for the reconstruction of the Mallery-Granger Drain. The Mallery-Granger Drain is currently listed as Number 3 on the 2020 Classification List as being in need of reconstruction.

The Drainage Area of the Mallery-Granger Drain covers a portion of Section 12, Township 19 North, Range 4 East, of Jackson Township and portions of Sections 13, 14, 23, 24, 25 & 26 of Township 19 North, Range 4 East, of Noblesville Township. The total watershed for the drain is approximately 1,110.98-acres and 162-lots.

The Mallery Granger Drain consists of the Mallery Granger Drain, Arm 1, the North Arm, the Feather Cove Arm, the John Deere Arm, and the State Road 19 Extension Arm.

The Mallery-Granger Regulated Drain is an open ditch that starts approximately 623-feet west of SR 19 and approximately 2,680-feet south of 206th Street. The drain then runs west and crosses under James Road after which the drain turns south and continues generally to the south and crossing under 196th Street to where it ends on the Fox Prairie Golf Course property approximately 560-feet south of 196th Street. The Mallery Granger ditch continues as an unregulated drain to State Road 19 where the ditch again becomes a regulated drain as described below.

Arm 1 of the Mallery Granger Drain begins at 216th Street approximately 1,783-feet east of Hague Road and generally drains south crossing under James Road twice, then under 206th Street and then under James Road a third time before discharging to the main ditch at approximate Station 29+89 of the main ditch.

The North Arm of the Mallery Granger Drain starts at the intersection of Hague Road and Carrigan Road, flows easterly and discharges to Arm 1 of the Mallery Granger Drain.

The Feather Cove Arm of the Mallery Granger Drain drains the Feather Cover Development on the west side of Hague Road. The Arm drains north along the west side of Hague Road and then drains east crossing under Hague Road and discharging to the main ditch.

The John Deere Arm of the Mallery Granger Drain runs along the eastern edge of the Morse Lake Industrial Park, LLC property. The drain is an open ditch that discharges to the Feather Cove Arm of the Mallery Granger Drain.

A Surveyors Report dated September 24, 2009 for the Mallery Granger Drain State Road 19 Extension was presented to the Drainage Board at the meeting of November 23, 2009. This Drain is within the channel of the existing Mallery Granger drain between State Road 19 and the White River that was not part of the regulated drain system. The drain was established at the meeting. [See Hamilton County Drainage Board Minute Book 12, pages 331-332].

HISTORY

The Mallery-Granger Drain was constructed by order of the Hamilton County Circuit Court in 1881. (Order Book 4, pages 545-553). The original drain consisted of a main drain and three (3) arms. Over the years since originally constructed the drain was altered several times. The first was by the construction of the Indiana Filler Drain constructed in 1915 which replaced Arm 2 of the drain. The second was in 1928-1930 when the construction of the County-McMahon Drain replaced the first 663 feet of the main drain and Arm 3. The Mallery-Granger Drain was dredged by order of the Hamilton County Commissioners in 1917. The drain was last dredged in 1955 by order of the Hamilton County Circuit Court (see Hamilton County Drainage Board Minutes Book 14, pages 387-395).

The Mallery-Granger Drain, North Arm was petitioned on February 21, 1995 by the City of Noblesville. The drain was described in a report to the Board dated June 7, 1999 and approved by the Board on June 28, 1999 (see Hamilton County Drainage Board Minutes Book 5, page 169 to 172).

The Feather Cover Arm of the Mallery-Granger Drain was petitioned by Community Development II, Inc. The drain was outlined in a report to the Board dated July 14, 2000 and was approved by the Board at hearing on August 28, 2000 (see Hamilton County Drainage Board Minute Book 5, pages 423-425).

The John Deer Arm of the Mallery-Granger Drain was petitioned by Morse Lake Industrial Park, LLC to regulate a portion of open drain along the east property lines of Tract 11-06-24-00-00-024.000 and Tract 11-06-24-00-00-024.002. This open drain outlets into the existing Feather Cove Arm of the Mallery-Granger Drain and is described in a report to the Board dated March 18, 2005 and approved by the Board at hearing on May 23, 2005 (see Hamilton County Drainage Board Minutes Book 8, pages 316-317).

The Mallery Granger Drain was placed on maintenance during the November 28, 2012 meeting of the Drainage Board (see Hamilton County Drainage Board Minutes Book 14, pages 387-395). The main ditch located east of the Nickel Plate Railroad is under maintenance as part of the County McMahon Drain.

A contract with VS Engineering to develop construction plans for the dredging of the entire length of Arm 1, and the Main Drain from the rail line at approximately station 18+69 to the end at Station 66+00 was approved on January 12, 2015. [See Hamilton County Drainage Board Meeting Minutes Book 16, pages 79-80].

A Public Information Meeting was held on December 13th, 2016 where the proposed plans to improve the ditch were presented to the affected property owners. At the meeting the general opinion of the property owners in attendance was that the project was not needed. However, after the meeting a few property owners not wanting to speak up for it at the meeting did state that they believed there was a need for the project. The plans have been revised to reflect pertinent comments regarding the design.

The following drain complaints and work orders are on file at the Hamilton County Surveyor's Office. To date, all the work orders have been addressed or completed.

Landowner (at time of complaint)	Date	Complaint
Blackwell, Regina R	1/28/2005	Culvert under drive is rusted through
Noblesville Multi School Building Corporation	9/5/2007	Erosion into drain
Church, Manson E	9/5/2007	Sediment
Hamman, Sean & Janice	6/29/2010	Sink hole
Gollner, Michael E & Teri J	3/13/2012	Clogged on east side of ditch
Crystal Lake Homeowners Assoc Inc	5/3/2013	Hole at inlet
Heinzman, Edward C	6/2/2016	Trees down in ditch near road
Bozell, David R & Rachel C	11/15/2017	Tree down between Noblesville West Middle School & Bozell property
Bozell, David R & Rachel C	4/11/2018	Water coming from the East
Minniear, Robert E	5/16/2018	Small hole over SSD at box structure

MAINTANANCE

The maintenance assessment rates were last revised for the 2013 collections.

The current rates are as follows:

1. Maintenance assessments for platted residential / agricultural tracts set at \$4.00 per acre with \$15.00 minimum.
2. Maintenance assessments for platted lots in subdivisions whose drainage systems will not be part of the regulated drain set at \$35.00 per lot/minimum. Common areas within the non-regulated drain subdivisions shall be assessed at \$5.00 per acre with a \$35.00 minimum.
3. Maintenance assessment for platted lots within subdivisions whose drainage system will be part of the regulated drain set at \$65.00 per lot/minimum. Common areas within the regulated drain subdivisions shall be set at \$10.00 per acre with a \$65.00 minimum.
4. Maintenance assessment for commercial, institutional and multi-family residential tracts to be set at \$10.00 per acre with a \$75.00 minimum.
5. Maintenance assessment for roads and street be set at \$10.00 per acre.

With above rates the drain collects \$16,280.54 annually.

I recommend the rates be increased to the following rates:

1. Maintenance assessment for agricultural tracts be set at \$5.00 per acre with a \$35.00 minimum.
2. Maintenance assessment for non-platted residential tracts be set at \$5.00 per acre with a \$35.00 minimum.
3. Maintenance assessments for platted lots in subdivisions whose drainage system will not be part of the regulated drain shall be set at \$45.00 per lot/minimum. Common areas within the non-regulated drain subdivisions shall be assessed at \$6.00 per acre with a \$45.00 minimum.
4. Maintenance assessment for platted lots within subdivisions whose drainage system will be part of the regulated drain shall be set at \$75.00 per lot/minimum. Common areas within the regulated drain subdivisions shall be set at \$15.00 per acre with a \$75.00 minimum.
5. Maintenance assessment for commercial, institutional and multi-family residential tracts to be set at \$20.00 per acre with a \$90.00 minimum.

6. Maintenance assessment for roads and streets be set a \$25.00 per acre.

With above rates the drain will collect \$23,887.06 annually. These collections rates will begin in May 2021.

EXISTING CONDITIONS

The Surveyors Report dated September 28, 2012 and presented to the Drainage Board at the meeting of November 26, 2012 stated the following:

“Although the Mallery-Granger Drain is on the reconstruction list, I am recommending that it be placed on maintenance at this time. The drain shall remain on the reconstruction list until plans can be finalized and a reconstruction hearing held to reconstruct the drain. By placing the drain on maintenance at this time when the reconstruction plans are prepared the Board can utilize up to 75% of that fund under IC 36-9-27-45.5 to offset reconstruction costs.

At this time the open ditch is heavily overgrown and is need of clearing. The drain is susceptible to jams caused by debris which cases backwater and localized flooding. It is possible for large woody debris to collect on road crossings. This creates a threat to the bridge/culvert structure and can redirect flow causing erosion.”

These conditions still remain.

Additionally, the report states the following:

“Although not specifically noted in the NPDES Phase II General Permit Application, Storm Water Quality Management Plan Part C: Program Implementation Report, The Mallery-Granger Drain is within the drainage shed for the White River which is identified on Page 2 of the report as an MS4 receiving stream.

The Mallery-Granger Drain is mentioned in the NPDES Phase II General Permit Application Storm Water Quality Management Plan Part B: Baseline Characterization Report. The drain is listed on the following pages of this report:

- Page 7 as #05120201070030 Watershed within the MS4 Area.
- Page 16 as being an impaired waterbody due to E. Coli.
- Page 32 as being a priority watershed.
- Page 44 as being a priority watershed due to multiple impairments and as a recreational watershed.

This drain is listed on the 2012 303(d) List of Impaired Waters for Indiana on pages 130 and 246. The impairment listed is for E. Coli.” (see Hamilton County Drainage Board Minutes Book 14, pages 387-395)

The total current watershed length of the drain is 27,585-feet.

The open ditch portion of the drain was inspected visually in December 2014. The inspection identified that the open ditch portion of the drain is heavily overgrown with vegetation and has a high amount of accumulated sediment in the channel. This sediment compromises both the hydraulic capacity of the road crossings and the ability to effectively drain the root zone of the adjacent agricultural lands. An adequately drained root zone relieves

stress on plants and also provides aeration to the root system, which potentially increases production/yield of the acreage.

RECONSTRUCTION PROJECT

The project was designed by VS Engineering.

The project lies with Sections 13, 24 and 25 of Township 19 North Range 4 East in Noblesville Township and is located within the Mallery Granger Watershed. The project comprises the reconstruction of the entire Arm 1 between Stations 0+00 and 86+60 and the portion of the Main Drain between Stations 18+69 (approximately) and 66+00. The total length of the Drain to be dredged is 13,391-feet. The project consists of the widening and lowering of the open ditch to restore the capacity of the open ditch.

The Main Drain between Stations 6+23 and 18+69, the North Arm, the Feather Cove Arm, the John Deere Arm, and the State Road 19 Extension Arm are not included in this project.

Arm 1 begins at the north line of the Northwest $\frac{1}{4}$ of Section 13 (at 216th Street) and continues downstream generally south and generally along the half section line through Section 13 and Section 24 to the confluence with the Main Drain in the Southeast $\frac{1}{4}$ of the Northwest $\frac{1}{4}$ of Section 24.

The portion of the Main Drain to be dredged is from the western side of the railroad (at approximately Station 18+69 of the Main Drain) to Station 66+00 of the Main Drain, approximately 560-feet south of 196th Street. The portion to be dredged starts approximately in the Southwest $\frac{1}{4}$ of the Northeast $\frac{1}{4}$ of Section 24 and runs west and then south through Section 24 to the Northwest $\frac{1}{4}$ of Section 25.

The field surveyed length from the VS constructions plans dated January 31, 2018 is 8,817-feet for Arm 1 and 4,822-feet for the portion of the Main Drain for a total length of 13,639-feet. This distance is 248-feet longer than the total distance noted above based on the historic stationing. This distance of 248-feet represents a 1.85% difference and is considered negligible for the purposes of this report.

A new channel was recommended for the entire length of the project. The recommended bottom width of the new channel was 4-feet.

The side slopes of the new channel in all segments is 2-foot horizontal for each 1-foot vertical.

Due to the existing elevation of the open ditch being below the proposed elevation of the open ditch, there will be no channel work on Arm 1 between Stations 43+18 and 43+78, 46+42 and 47+36, and 48+20 and 56+39.5.

The project includes the replacement of a drive crossing, the replacement of 4 road crossings, the extension of 39 private tile outlets, the installation of 18 surface water pipes, and the installation of rip-rap armoring at various locations and bends along the open ditch. The existing 42" CMP crossing of the Main drain at James Road and the bridge crossing at 196th Street will remain in-place. Each of the five crossings to be reconstructed are being lowered to match the proposed flow line and are being increased in size.

The existing 24" CMP under 211th Street at Station 30+56 of Arm 1 will be removed and replaced with a 48" CMP. The existing 48" CMP under James Road at Station 56+60 of Arm 1 will be removed and replaced with a 38" x 60" CMP. The existing 60" CMP under 206th Street at Station 58+42 of Arm 1 will be removed and replaced with a 60" CMP. The existing 60" CMP under an existing driveway at Station 72+82 of Arm 1 will be removed and replaced with a 60" CMP. The existing 48" CMP under James Road at Station 75+49 of Arm 1 will be removed and replaced with a 60" CMP.

The project will include tree removal and clearing of debris. 75-foot conservation clearing will take place to facilitate an operational side for equipment access for the project and for future maintenance. The operational side will also be planted with a 20-foot filter strip. The operational side is outlined below.

The operational side for Arm 1 between Stations 0+00 and 30+56 and between Stations 58+42 and 87+75 will be on the west bank.

The operational side for Arm 1 between Stations 30+56 and 58+42 will be on the east bank.

The operational side for the Main Drain will be on the north/west bank between Stations 18+91 and 66+00.

FILTER STRIPS

In order to protect the drain from siltation, I recommend that a twenty (20) foot filter strip be installed and established on the operational side of the Mallery Granger open ditch. The work shall include the installation of filter strip markers. The side of the open ditch and the parcel across which the filter strip will be installed is as follows:

West Bank of the Drain

10-06-13-00-00-002.004	Green, John W. & Linda M.
10-06-13-00-00-018.000	Fortgang, Ronald & Delibero, Renee; jt/rs
10-06-13-00-00-018.001	Breining, Michael
10-06-24-00-00-003.001	Carnevale Family Rev Trust
10-06-24-00-00-013.504	Blackwell, Regina R.
10-06-24-00-00-001.000	Cruzan II, Robt (1/2int); Bloehs, Angela (1/4 int); Coletto, Scott (1/4 int)
10-06-24-00-00-021.000	Noblesville Multi School Building Corp.
10-06-24-00-00-015.003	Hoover, Chalmer & Andrea
10-06-24-00-00-015.004	McCarty, John & Linda

East Bank of the Drain

10-06-13-00-00-019.000	RCM Farms, LLC
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10-06-13-00-00-020.000	RCM Farms, LLC
10-06-13-00-00-015.000	Russel, Lawrence A. & Geraldine A.

North Bank of the Drain

10-06-24-00-02-001.000	Reiger, Mark A. & Ashley C.
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EASEMENTS

The drain is being reconstructed in place. As currently designed, the reconstruction of this drain will not require acquisition of new easement. All work will occur within the existing 75-foot easement from the top of bank per IC 36-9-27-33.

PERMITS

Permits have not yet been submitted for this project.

CHANGES TO THE DRAIN

There are no changes proposed to the length of the Drain.

QUANTITIES & COST ESTIMATE

VS Engineering, Inc., was hired by approval of a Professional Services Agreement for Survey and Design in the amount of \$42,750.00 on January 26, 2015 per Hamilton County Drainage Board Book 16 Page 96. This Contract was paid from the Mallery Granger Shed Maintenance Fund and this amount will be repaid when settlement from the reconstruction assessments are received. VS Engineering will also be hired to provide Professional Survey Services for Construction Staking, Periodic Elevation Checks, and As-Built drawings if the reconstruction project is approved.

The construction cost estimate for the project is outlined in detail as follows:

<i>Regulated Drain Work</i>				
Item Description	Quantity	Unit	Unit Cost	Total Cost
12" CMP Surface Drains	18	EA	\$2,250.00	\$40,500.00
Tile Outlets	39	EA	\$ 450.00	\$17,550.00
Rip Rap, Revetment	5,100	TON	\$ 45.00	\$229,500.00
Dredging	13,639	LFT	\$ 16.00	\$218,224.00
Restoration and Mulched Seeding	35,100	SYS	\$2.25	\$78,975.00
60" CMP; Drive Crossing [Arm 1 Sta: 72+82]	19	LFT	\$534.00	\$10,146.00

Compacted #53 Stone	13	TON	\$34.00	\$442.00
60" End Section	2	EA	\$6,074.00	\$12,148.00
Pavement Restoration	100	SYS	\$91.00	\$9,100.00
Erosion Control	1	LS	\$30,371.00	\$30,371.00
Clearing	10	ACRES	\$3,515.00	\$35,150.00
Maintenance of Traffic	1	LS	\$6,974.00	\$6,974.00
Subtotal				\$689,080.00
15% Contingency				\$103,362.00
<i>Reconstruction Total</i>				<i>\$792,442.00</i>

City of Noblesville Work				
Item Description	Quantity	Unit	Unit Cost	Total Cost
Scour Protection [196th Street]	1	LS	\$7,593.00	\$7,593.00
			Subtotal	\$7,593.00
			15% Contingency	\$1,138.95
			Total lump sum to City of Noblesville	\$8,731.95

Hamilton County Highway Work				
Item Description	Quantity	Unit	Unit Cost	Total Cost
48" CMP; 211 th Street [Arm 1 Sta: 30+56]	47	LFT	\$382.00	\$17,954.00
48" CMP End Section [211 th Street Culvert at Arm 1 Sta: 30+56]	2	EA	\$ 4,556.00	\$9,112.00
38"x60" CMP; James Road [Arm 1 Sta: 56+60]	41	LFT	\$416.00	\$17,056.00
38" x 60" CMP End Section [James Road Culvert at Arm 1 Sta: 56+60]	2	EA	\$ 6,074.00	\$ 12,148.00
60" CMP; 206 th Street [Arm 1 Sta: 58+42]	50	LFT	\$534.00	\$26,700.00

60" End Section [206 th Street Culvert at Arm 1 Sta: 58+42]	2	EA	\$6,074.00	\$12,148.00
60" CMP; James Road [Arm 1 Sta: 75+49]	34	LFT	\$534.00	\$18,156.00
60" End Section [James Road Culvert at Arm 1 Sta: 75+49]	2	EA	\$6,074.00	\$12,148.00
Compacted #53 Stone	115	TON	\$34.00	\$ 3,910.00
Pavement Restoration	400	SYS	\$91.00	\$36,400.00
Subtotal				\$165,732.00
15% Contingency				\$24,859.80
<i>Total lump sum to County Highway</i>				<i>\$190,591.80</i>

COST SUMMARY

Item Description	Cost
VS Engineering Survey and Design	\$ 42,750.00
VS Engineer Staking and As Built [Estimate]	\$ 40,000.00
Regulated Drain Reconstruction	\$ 792,442.00
City of Noblesville	\$ 8,731.95
Hamilton County Highway	\$190,591.80
<i>Total Project Cost</i>	<i>\$ 1,074,515.75</i>

The total cost of this project is estimated to be \$1,074,515.75.

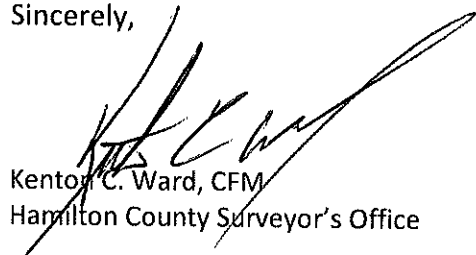
The cost of the new pipe and culvert work at 276th Street will be paid by the County Highway Department per IC 36-9-27-71. The lump sum cost to be charged to the County Highway will be \$190,591.80. The cost of the scour protection at 196th Street will be paid by the City of Noblesville per IC 36-9-27-71. The lump sum cost to be charged to the City of Noblesville will be \$8,731.95. At this time the maintenance fund has a balance of \$146,335.05. As mentioned above, per IC 36-9-27-45.5, the Board may use up to 75% of the fund to offset reconstruction costs. I recommend the Board utilized \$109,751.00 of the maintenance fund to help offset reconstruction costs. The remaining \$765,441.00 will be spread out to the entire drainage shed. The drainage shed for this reconstruction project is 1,110.98-acres and 162-lots. I have reviewed the benefitted drainage shed and upon considering each parcel individually, I

believe each parcel within the drainage shed will have equal benefits as provided by the drain. Therefore, I recommend each tract be assessed on the same basis equally.

I also believe that no damages will result to landowners by reconstruction of this drain. I recommend a reconstruction assessment of \$589.38 per acre with the minimum assessment set at \$589.38.

I recommend that the Board set a hearing for this proposal for January 25, 2021.

Sincerely,



Kenton C. Ward, CFM
Hamilton County Surveyor's Office

KCW/pll

