

*Kenton C. Ward, CFM*  
*Surveyor of Hamilton County*  
*Phone (317) 776-8495*  
*Fax (317) 776-9628*

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

October 3, 2018

To: Hamilton County Drainage Board

Re: Thistlethwaite Drain - California Street Arm Extension

Attached is a drain map and petition for the re-construction of a portion of the California Street Arm of the Thistlethwaite Regulated Drain in the Town of Sheridan. The portion of the regulated drain to be reconstructed is located in Adams Township, Section 31, Township 20 North, Range 3 East. For purposes of this Report, the California Street Arm of the Thistlethwaite Drain shall be referred to as the "Drain".

### History

The history of the Thistlethwaite Drain is described in detail in two Surveyors Reports to the Drainage Board. The first report is dated January 12, 1987 and was presented to the Drainage Board at the meeting of March 9, 1987 (see Hamilton County Drainage Board Minutes Book 2, pages 198-199). The second report is dated August 1, 1996 and was presented to the Drainage Board at the meeting of August 12, 1996 (see Hamilton County Drainage Board Minutes Book 4, page 272).

The Drain is described in a Surveyors Report dated December 21, 2000 presented to the Drainage Board at the meeting of January 22, 2001. The construction of the Drain was part of the Thistlethwaite East Leg Construction project. The Surveyors Report states that the Drain starts at the proposed Seventh Street Arm and runs north 356-feet to 6<sup>th</sup> Street (see Hamilton County Drainage Board Minutes Book 5, pages 547-549). The Drain was approved for construction and classified as an Urban Drain at hearing on January 22, 2001 (see Hamilton County Drainage Board Minutes Book 5, pages 549-550). A final report dated December 9, 2002 was presented to the Drainage Board at the meeting of December 9, 2002 where the Drain was accepted (see Hamilton County Drainage Board Minutes Book 6, pages 504-516).

The Drain was placed on maintenance at hearing during the meeting of September 23, 1996 (see Hamilton County Drainage Board Minutes Book 4, page 297A-297G).

The Town of Sheridan petitioned the Drainage Board for an extension of the Drain at the meeting of July 25, 2016 (see Hamilton County Drainage Board Minutes Book 17, page 52).

The Surveyors Office prepared construction plans for the extension of the Drain and reviewed these plans with the Town of Sheridan on July 18, 2018.

### Existing Conditions

The current non-regulated drainage facilities in the area consist of the following: (1) An existing manhole structure at the intersection of 5<sup>th</sup> Street and California Street that has four, 8-inch inlet pipes and a single, 8-inch outlet pipe draining the structure; (2) An existing manhole structure at the intersection of 6<sup>th</sup> Street and California Street that has a 12" inlet pipe and a 12" outlet pipe.

When the 8" outlet pipe of the existing manhole structure at 5<sup>th</sup> Street and California Street reaches capacity, stormwater fills the manhole structure and then surcharges out of the structure. This surcharge can result in flooding of the intersection of 5<sup>th</sup> Street and California Street. A drainage investigation on September 9, 2018 observed water surcharging from this manhole structure.

Upon completion of the project, these existing non-regulated drain facilities will outlet to the California Street Arm. The regulated drain outlet for these facilities is Structures 72. Downstream of Structure 72, the regulated drain consists of 327-feet of 21" RCP pipe.

### Project Description

The project begins at existing Structure 72 and will extend the existing Drain along the west side of California Street between 6<sup>th</sup> Street and 5<sup>th</sup> Street. The project includes the installation of 376.42-feet of 18" RCP; 12-feet of 15" RCP; 39.72-feet of 12" RCP; 4, 48" diameter manholes with castings; 1, 72" diameter manhole with casting; 2, 2'x3' box inlet structures with top, casting, and concrete collar; and 3, 2'x2' box inlet structures with casting, and concrete collar. The project also includes incidental/ancillary construction including, but not limited to, pavement, curb, walk and drive demolition; removal of two trees; replacement pavement, curb walk and drive; and erosion and sediment control.

The intent of the design is to provide an additional drainage outlet for the stormwater entering the Town of Sheridan manhole structure at the intersection of 5<sup>th</sup> Street and California Street and reduce the frequency of stormwater surcharging out of this manhole structure. The slope and size of the proposed tile was governed by existing invert elevations, the size of the existing regulated drain tile downstream of Structure 72 and reasonable/minimal cover over the tile. The largest size tile considering these restraints was an 18-inch tile.

The project begins at manhole structure 72 of the existing Drain at the southwest corner of the intersection of 6th Street and California Street. The existing regulated drain manhole structure at this location will be removed and replaced by the proposed manhole Structure 601. Structure 601 is a 48" diameter manhole. All existing tiles will be reconnected to the new manhole structure.

The drain then continues as 12.98-feet of 18" RCP to Structure 602, a 48" diameter manhole. The existing Town of Sheridan manhole structure at this location will be removed and replaced by the proposed manhole Structure 602. All existing tiles will be reconnected to the new manhole structure.

The drain then continues as 14.73-feet of 18" RCP to Structure 603, a 2'x3' box inlet structure.

The drain then continues as 174.24-feet of 18" RCP to Structure 604, a 48" diameter manhole.

The drain then continues as 135.56-feet of 18" RCP to Structure 606, a 2'x3' box inlet structure.

The drain then continues as 12.04-feet of 18" RCP to Structure 607, a 72" diameter manhole. The existing Town of Sheridan manhole structure at this location will be removed and replaced by the proposed manhole Structure 607. All existing tiles will be reconnected to the new manhole structure.

The drain then continues as 12.73-feet of 18" RCP to Structure 608, a 48" diameter manhole. This manhole structure will intercept an existing 8-inch tile that drains from the north in to the existing Town of Sheridan manhole structure being replaced by Structure 607.

The drain then continues as 8.14-feet of 18" RCP to Structure 609, a 2'x2' box inlet structure.

The drain will also include two lateral tiles. Structure 605 is located on the west side of California Street approximately halfway between 6<sup>th</sup> Street and 5<sup>th</sup> Street. Structure 605 is a 2'x2' box inlet structure that drains to Structure 604 through 8.29-feet of 12" RCP. Structure 610 is located on the east side of the intersection of 5<sup>th</sup> Street and California Street. Structure 610 is a 2'x2' box inlet structure that drains to Structure 607 through 25.43-feet of 12" RCP.

Also included in the drain is ancillary connections to the new manhole structures. These connections replace short sections of the existing tiles that are connected to existing Town of Sheridan manhole structures. These connections include 2, 6-foot section of 15" RCP at Structure 602; 6-feet of 18" RCP at Structure 608; and 6-feet of 12" RCP at Structure 610.

### Easements

The new drain will be constructed in existing right-of-way. A regulated drain easement will be created for the extension and will be the same as the existing road right-of-way easement.

## Permits

No permits from Federal or State Agencies are required for this project.

## Project Cost

The estimated cost of the project is outlined below. Survey, Design and Construction Plan production was completed by staff from the Hamilton County Surveyor's Office. Inspection, construction staking and As-Built drawings will also be completed by staff from the Hamilton County Surveyor's Office. As such, there are not costs for these services in the itemized project cost below.

Item No.	Description	Quantity	Unit	Unit Cost	Total Cost
1	Demolish existing tile	40	LF	\$ 65.00	\$ 2,600.00
2	Disposal of Excess Soil Material	328	CY	\$ 25.00	\$ 8,200.00
3	Existing Manhole Removal	3	EA	\$ 1,000.00	\$ 3,000.00
4	Pavement Demolition [Pavement, curb, walk, drive]	1	LS	\$ 1,500.00	\$ 1,500.00
5	Tree Removal	2	EA	\$ 1,600.00	\$ 3,200.00
6	Coir Log	310	LF	\$ 10.00	\$ 3,100.00
7	Inlet Protection	3	EA	\$ 200.00	\$ 600.00
8	Seeding	354	SYS	\$ 2.00	\$ 708.00
9	Topsoil	60	CY	\$ 40.00	\$ 2,400.00
10	Maintenance of Traffic	1	LS	\$ 2,000.00	\$ 2,000.00
11	Sign removal	6	EA	\$ 100.00	\$ 600.00
12	Sign replacement	6	EA	\$ 250.00	\$ 1,500.00
13	Temporary Signage	6	EA	\$ 100.00	\$ 600.00
14	5-foot Sidewalk	178	SYS	\$ 50.00	\$ 8,900.00
15	ADA Tactile Warning	3.33	SYS	\$ 200.00	\$ 666.00
16	Concrete Curb, Straight	48	LF	\$ 30.00	\$ 1,440.00
17	Concrete Drive Repair	1	LS	\$ 1,250.00	\$ 1,250.00
18	HMA Road Repair	1	LS	\$ 3,750.00	\$ 3,750.00
19	Walk Bedding	33.33	TON	\$ 50.00	\$ 1,666.50
20	12" RCP with Granular Backfill (0-5' Deep)	39.72	LF	\$ 90.00	\$ 3,574.80
21	15" RCP with Granular Backfill (0-5' Deep)	12	LF	\$ 108.00	\$ 1,296.00
22	18" RCP with Granular Backfill (0-5' Deep)	376.42	LF	\$ 126.00	\$ 47,428.92
23	2'x2' Concrete Box with casting and concrete collar	3	EA	\$ 3,000.00	\$ 9,000.00

24	2'x3' Concrete Box with casting and concrete collar	2	EA	\$ 4,500.00	\$ 9,000.00
25	48" Manholes with casting	4	EA	\$ 5,500.00	\$ 22,000.00
26	72" Manholes with casting	1	EA	\$ 10,000.00	\$ 10,000.00
27	Sanitary Lateral Restoration	2	EA	\$ 2,000.00	\$ 4,000.00
Subtotal				\$ 153,980.22	
15% Contingency				\$ 23,097.03	
Engineering				\$ -	
Survey				\$ -	
Construction				\$ -	
Staking				\$ -	
As-Builts				\$ -	
Total Cost				\$ 177,077.25	

### Project Funding

Presently, the maintenance fund balance for the Thistlethwaite Drain is \$185,325.60. Per IC 36-9-27-45.5 the Board may utilize 75% of this fund for the work which would be \$138,994.20. I recommend that the remaining balance of \$38,083.05 be taken out of the General Drain Improvement Fund and paid back from the increased drainage assessments as outlined below at a rate of \$19,041.53 per year over the next two years assessments beginning in 2019. This approach would negate the need for a reconstruction assessment on the residents within the Thistlethwaite Drain Shed for this project.

I believe no damages will result to the landowners. Damages are set at zero (0).

### Changes to the Drain

The Drain currently consists of 391-LF of 15" and 21" RCP tiles. The project will install 376.42-feet of 18" RCP tile, 12-feet of 15" RCP tile and 39.72-feet of 12" RCP tile. The total length of the extension is 428.14-feet.

One manhole structure installed in 2001/2002 will be removed and replaced.

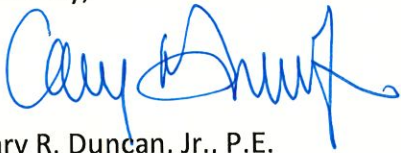
The new extension shall become part of the Drain.

### Maintenance of Drain

The maintenance rates for the entire drainage shed were increased at hearing during the September 24, 2018 meeting of the Drainage Board. These new rates increased the annual assessment from \$26,660.02 to \$31,539.02.

I recommend that the Board set a hearing for this proposal for January 28, 2019.

Sincerely,

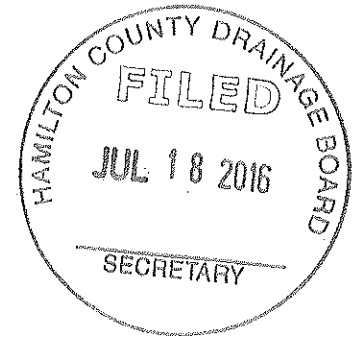
A handwritten signature in blue ink, appearing to read "Gary R. Duncan, Jr.", written in a cursive style.

Gary R. Duncan, Jr., P.E.  
Hamilton County Surveyor's Office

Kew

# Town of Sheridan

506 S. Main Street  
Sheridan, Indiana 46069  
(317) 758-5293  
Fax: (317) 758-2505



July 13, 2016

Hamilton County Drainage Board  
1 N 8<sup>th</sup> Street, #188  
Noblesville, IN 46060

Hamilton County Drainage Board:

The Town of Sheridan would like to petition the Hamilton County Drainage Board to extend the Thistlewaite regulated drain (296). The petition proposes to extend the drain north approximately 326 LFT from Structure ID 74 located at the northwest corner of the intersection of 6th Street and California Street. The drain would facilitate drainage of a storm structure at the intersection of 5<sup>th</sup> Street and California Street that surcharges frequently and causes a safety issue for pedestrians and vehicular traffic due to prolonged flooding and a dislodged manhole due to surcharging. The work could be completed within Town Right of Way between the existing road and sidewalk along the west side of California Street. Furthermore, the town would like the board to consider utilizing a drainage maintenance fund transfer as outlined within IC-36-9-27-45.5 to fund the reconstruction. The potential construction cost for the project is currently estimated to be between \$30,000 and \$35,000. No detailed engineering plan or survey has been completed to date.

Sincerely,

A large, handwritten signature in black ink, appearing to read "David Kinkead".

David Kinkead  
Sheridan Town Council, President

A smaller, handwritten signature in black ink, appearing to read "Dan".

enclosure

STATE OF INDIANA )  
 )  
COUNTY OF HAMILTON )

ss:

BEFORE THE HAMILTON COUNTY  
DRAINAGE BOARD  
NOBLESVILLE, INDIANA

IN THE MATTER OF THE  
RECONSTRUCTION OF THE  
***Thistlewaite Drain, California Street Arm Extension***

FINDINGS AND ORDER FOR RECONSTRUCTION

The matter of the proposed Reconstruction of the ***Thistlewaite Drain, California Street Arm Extension*** came before the Hamilton County Drainage Board for hearing ***on January 28, 2019***, on the Reconstruction Report consisting of the report and the Schedule of Damages and Assessments. The Board also received and considered the written objection of an owner of certain lands affected by the proposed Reconstruction, said owner being:

Evidence was heard on the Reconstruction Report and on the aforementioned objections.

The Board, having considered the evidence and objections, and, upon motion duly made, seconded and unanimously carried, did find and determine that the costs, damages and expenses of the proposed Reconstruction will be less than the benefits accruing to the owners of all land benefited by the Reconstruction.

The Board having considered the evidence and objections, upon motion duly made, seconded and unanimously carried, did adopt the Schedule of Assessments as proposed, subject to amendment after inspection of the subject drain as it relates to the lands of any owners which may have been erroneously included or omitted from the Schedule of Assessments.

The Board further finds that it has jurisdiction of these proceedings and that all required notices have been duly given or published as required by law.

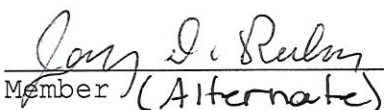
Wherefore, it is ORDERED, that the proposed Reconstruction of the ***Thistlewaite Drain, California Street Arm Extension*** be and is hereby declared established.

Thereafter, the Board made inspection for the purpose of determining whether or not the lands of any owners had been erroneously included or excluded from the Schedule of Assessments. The Board finds on the basis of the reports and findings at this hearing as follows:

HAMILTON COUNTY DRAINAGE BOARD

  
PRESIDENT

  
Member

  
Member (Alternate)

ATTEST:

  
Executive Secretary



BEFORE THE HAMILTON COUNTY DRAINAGE BOARD  
IN THE MATTER OF

***Thistlewaite Drain, California Street Arm Extension***

NOTICE

To Whom It May Concern and: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Notice is hereby given of the hearing of the Hamilton County Drainage Board concerning the reconstruction of the **Thistlewaite Drain, California Street Arm Extension** on **January 28, 2019** at **9:00 A.M.** in Commissioners Court, Hamilton County Judicial Center, One Hamilton County Square, Noblesville, Indiana. Construction and maintenance reports of the Surveyor and the Schedule of Assessments proposed by the Drainage Board have been filed and are available for public inspection in the office of the Hamilton County Surveyor.

Hamilton County Drainage Board

Attest: Lynette Mosbaugh

ONE TIME ONLY

STATE OF INDIANA     )  
                          ) SS                 BEFORE THE HAMILTON  
                          )  
COUNTY OF HAMILTON )                 DRAINAGE BOARD

IN THE MATTER OF **Thistlewaite Drain, California Street Arm Extension**

NOTICE

Notice is hereby given that the Hamilton County Drainage Board at its regular meeting **January 28, 2019** adopted the reconstruction report of the Surveyor and the Amended Schedule of damages and assessments including annual assessment for periodic maintenance, finding that the costs, damages and expense of the proposed improvement would be less than the benefits which will result to the owner of lands benefited thereby.

The Board issued an order declaring the proposed improvement established. Such findings and order were marked filed and are available for inspection in the Office of the Hamilton County Surveyor.

If judicial review of the findings and order of the Board is not requested pursuant to Article VIII of the 1965 Indiana Drainage Code as amended within twenty (20) days from the date of publication of this notice, the findings and order shall become conclusive.

HAMILTON COUNTY DRAINAGE BOARD

BY: Christine Altman  
PRESIDENT

ATTEST: Lynette Mosbaugh  
SECRETARY



SURVEYOR'S OFFICE

# Hamilton County

*Kenton C. Ward, CFM*  
*Surveyor of Hamilton County*  
 Phone (317) 776-8495  
 Fax (317) 776-9628

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

To: Hamilton County Drainage Board

March 11, 2020

RE: Thistlewaite Drain - California Street Arm Extension - Final Report

This is the inspector's final report on the Thistlewaite Drain - California Street Arm Extension located in Section 31 of Township 20 North Range 3 East in Adams Township, Hamilton County, Indiana.

The Surveyor's Report for the Thistlewaite Drain - California Street Arm Extension dated October 3, 2018 was presented to the Drainage Board and approved on January 28, 2019 (Hamilton County Drainage Board Minutes Book (Book) 18, Pages 345 - 349). The reconstruction cost approved was \$192,568.90. Bids for this project were solicited on November 26, 2018 (Book 18, Page 313) and on opened at the January 14, 2019 meeting of the Hamilton County Drainage Board (see Hamilton County Drainage Board Minutes Book 18, page 336). The bid was awarded to Millennium Contractors, LLC for \$192,568.90 on January 28, 2019 (Hamilton County Drainage Board Minutes Book (Book) 18, Pages 345 - 349).

The Thistlewaite Drain - California Street Arm Extension consisted of 370 feet of 18-inch RCP, 34 feet of 12-inch RCP, two 72-inch manholes, two 48-inch manholes, four 30-inch x 30-inch box structures, two 24-inch x 24-inch box structures, 178 feet of 5' sidewalk with bedding and 50 feet of curbing.

The above description reflects field changes to substitute structures from the design sizes, these changes were at no additional cost. The changes include two 30-inch by 30-inch structures which were substituted for 30-inch by 24-inch structures (str #603 & #609). One 30-inch by 30-inch structure substituted for one 48-inch manhole (str#604) and one 72-inch diameter manhole was substituted for a 48-inch manhole (str # 608).

There were 2 change orders on this project for additional work or field revisions on the project as allowed by IC 36-9-27-80.5. Those change orders are as follows:

Change Order #1 was to delete the curbing as designed on the project. Total cost of Change Order #1 was a deduction of \$3,120.00. Approved on September 9, 201 (Book 18, Page 580).

**Change Order #1**

Delete 48 lineal feet of curb @ \$65.00per foot -----	-\$3,120.00
Cost by Millennium Construction of Change Order # 1 -----	-\$3,120.00

Change Order #2 was to add 50 feet of revised curbing. Total cost of Change Order #2 was \$11,565.00. Approved on January 28, 2019 (Book 19, Page 47).

**Change Order #2**

50' of Curbing - Lump Sum -----	\$11,565.00
Cost by Millennium Construction for Change Order # 2 -----	\$11,565.00

Millennium Construction final costs for the reconstruction are as follows:

Contractor's Bid -----	\$192,568.90
Change Order #1 Total -----	-\$3,120.00
Change Order #2 Total -----	\$11,565.00
Reconstruction Cost by Millennium Construction -----	\$201,013.90

**Total Reconstruction Cost**

Millennium Construction -----	\$201,013.90
Amount Approved by the Board -----	\$192,568.90
Difference -----	-\$8,445.00

This project was funded utilizing the maintenance funds in the Thistlewaite maintenance fund. The funding was to use 75% of the maintenance fund which equals \$138,994.20 and the balance \$53,574.70 was to be paid out of the General Drain Improvement Fund (GDIF) and reimbursed to the GDIF utilizing 75% of the maintenance collections for the following two years. Approved by the Board on January 28, 2019 (Book 18, Page 348). In 2019 1/2 of the balance, \$26,787.35 was transferred; in 2020 \$35,232.35 was transferred due to the extra \$8,445.00 in change orders.

Partial Pay Requests for this project submitted and paid as allowed in IC 36-9-27-81 are as follows:

	Date Requested	Date Paid	Billed	Retained	Paid
Pay Request #1	04/30/19	05/29/19	\$163,903.90	\$24,585.59	\$139,318.31
Pay Request #2	05/24/19	08/27/19	\$18,180.00	\$2,727.00	\$15,453.00
Pay Request #3	08/27/19	09/24/19	\$7,365.00	\$1,104.75	\$6,260.25
Pay Request #4	03/06/20	04/14/20	\$11,665.00	\$1,734.75	\$9,830.25
Pay Request #5	03/12/20	04/14/20	Main Retainage Release		\$28,417.34
Pay Request #6	03/13/20	05/12/20	Curb Work Retainage		\$1,734.75
Millennium Construction Totals:			\$201,013.90		\$201,013.90

Statement of All Incurred Expenses Paid signed by the contractor as required in IC 36-9-27-82(b) was received on 08/28/2019 for the main reconstruction and on 03/13/2020 for the curb installation.

The engineering design, plans, construction staking and as-built (record) drawings were prepared by the Hamilton County Surveyor's Office. The as-built drawings are attached.

As of March 13, 2020, I hereby attest to and agree that the reconstruction was installed according to the specified plans and change orders and have approved such work under IC 36-9-27-82(a). All inspections have been completed. Final inspection was on March 9, 2020.

I recommend the Board approve the reconstruction as complete and acceptable.

Respectfully,

Andrew Conover  
Inspector

# AS-BUILT RECORD DRAWING THISTLETHWAITE REGULATED DRAIN



This information was gathered for input into the Hamilton County Geographic Information System (GIS). This document is considered an official record of the GIS.  
Entry Date: 2020  
Entered By: SLM

## PROPOSED STORM SYSTEM PLAN

**"AS-BUILT" CERTIFICATION**  
"AS BUILT" INFORMATION COLLECTED BY HAMILTON COUNTY SURVEYOR'S OFFICE. I HEREBY CERTIFY TO THE BEST OF MY KNOWLEDGE AND BELIEF, A TRUE AND CORRECT REPRESENTATION OF THE LOCATIONS AND ELEVATIONS OF THE "AS-BUILT" REGULATED DRAIN IMPROVEMENTS. INFORMATION OBTAINED BY A FIELD SURVEY IN JULY & AUGUST 2019.

CERTIFIED BY: *B.K.R.*  
BRIAN K. RAY, PS  
PROFESSIONAL SURVEYOR  
INDIANA LICENSE NO. 20100070  
DATE: August 21, 2019



THIS DRAWING IS NOT INTENDED TO BE REPRESENTED AS A RETRACEMENT OR ORIGINAL BOUNDARY SURVEY, A ROUTE SURVEY, OR SURVEYOR LOCATION REPORT

### DEMOLITION KEY NOTES

- Remove existing sidewalk in its entirety. For walk north of 5th Street, existing walk shall be sawcut full depth at nearest joint post removal limits. Remove only full panels of walk. Replace all walk removed.
- Remove existing structure and replace with structure as noted. Connect all existing tiles.
- Remove existing pavement as necessary for the work. See General Note 11 on Sheet 5 for Maintenance of Traffic requirements. Sawcut existing pavement, full depth at limits of removal.
- Remove existing curb as necessary for the work. Sawcut existing curb, full depth, at nearest existing joint post removal limits. Replace all curb removed. Match existing grades.
- Remove existing driveway as necessary for the work. See Key Note 12. Sawcut existing driveway, full depth at nearest joint post removal limits. Remove only full panels of driveway. Replace all driveway removed.
- Remove existing tree in entirety and dispose off-site. Remove stump completely. Backfill with excavated material to 6" of adjacent surface. Final 6" of backfill shall be topsoil.
- Remove sign. Provide temporary sign during project. Re-install sign at completion of project.

### GENERAL KEY NOTES

- Brace existing utility pole if needed to complete the Work.
- Existing improvement to remain in place and be protected during work.
- Possible water conflict. Contractor shall pothole and verify depth of main prior to starting work. Contractor shall notify HCSO if there is a conflict. See General Note 8 for responsibility of restoring service if necessary to take main out of service for the work.
- Possible sanitary lateral conflict. Contractor shall pothole and verify depth of lateral prior to starting work. Contractor shall notify HCSO if there is a conflict. See General Note 8 for responsibility of restoring service if necessary to take lateral out of service for the work.
- Contractor shall pothole and verify depth of tile prior to saw cutting pavement and before setting structure.

NOTE: PIPE LENGTHS MEASURED TO CENTERLINE STRUCTURE

### DRAINAGE PLAN KEY NOTES

- 6.0 LF 15" Ø RCP @ 0.1% Slope (Connect to existing 12" Tile within limits of excavation).
- 6.0 LF 12" Ø RCP @ 0.1% Slope (Connect to existing 8" Tile within limits of excavation).
- Offset casting to east side of structure. Contact Engineer for information prior to ordering flat top for inlet structure.
- 6.0 LF of 18" Ø RCP @ 0.1% Slope (Connect to existing 12" Tile within limits of excavation).

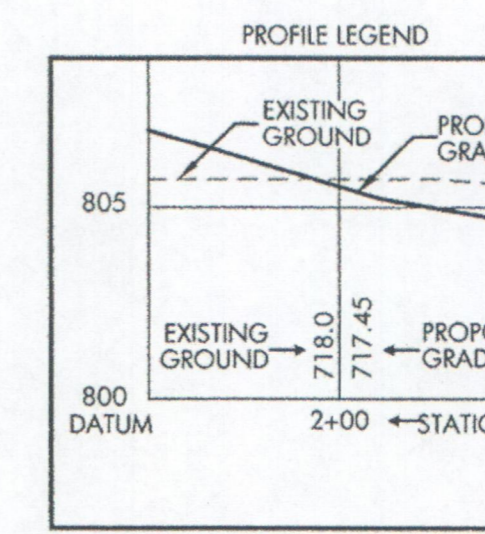
PROPOSED STRUCTURE DESIGNATION. REFER TO INFORMATION ON THIS SHEET.

### HATCH LEGEND

- PROPOSED SEEDING. SEE PROJECT MANUAL FOR APPLICATION RATES, SEED MIX, SURFACE ROUGHENING AND STRAW MULCHING
- DEMOLITION WITH OR WITHOUT REPLACEMENT AS NOTED
- PROPOSED GRANULAR BACKFILL
- PROPOSED SIDEWALK
- PROPOSED PAVEMENT
- PROPOSED DRIVE

### LEGEND

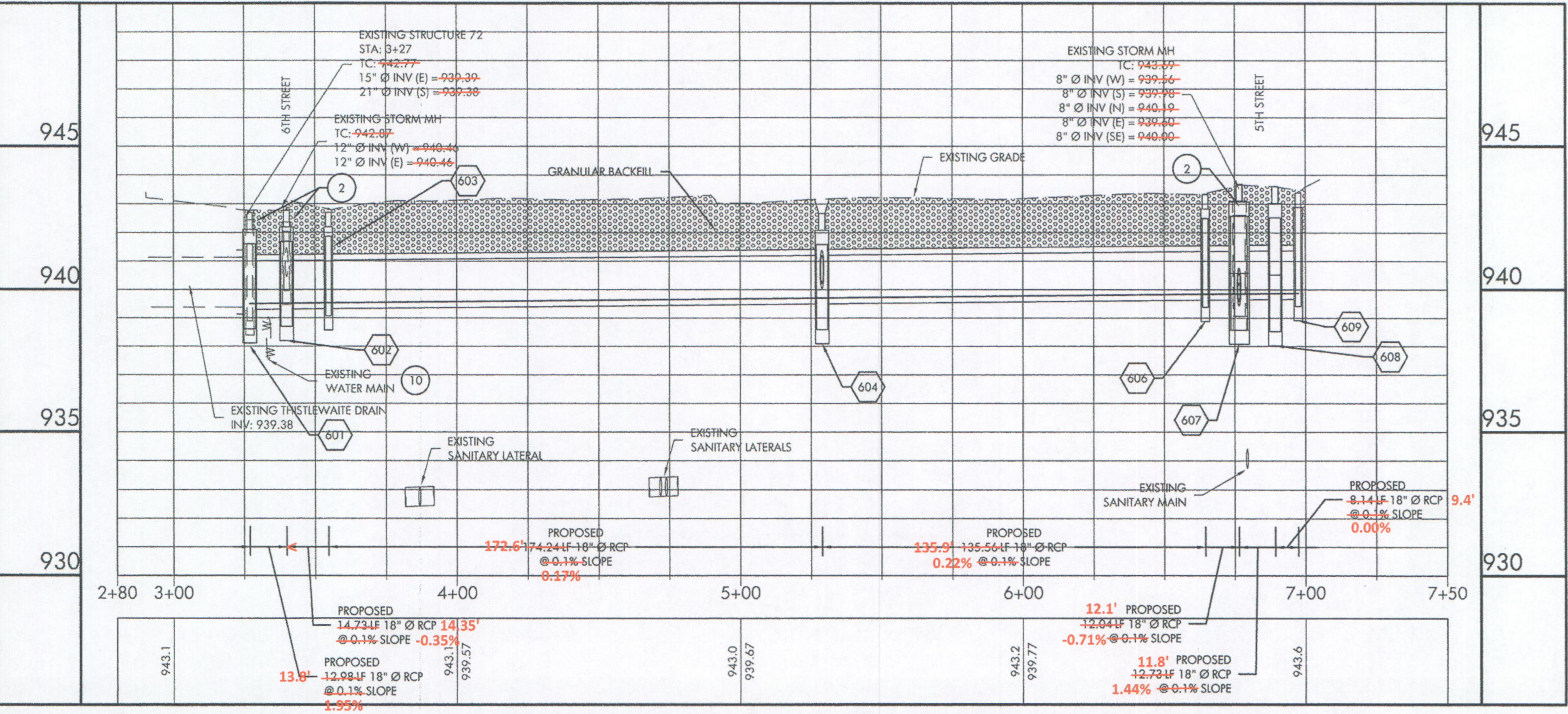
- EXISTING EASEMENT LINE
- APPROX. PROPERTY LINE
- OHE - EXISTING OVERHEAD ELECTRIC
- SAN - EXISTING SANITARY SEWER
- W - EXISTING WATER MAIN
- EXISTING STORM SEWER
- EXISTING UTILITY POLE
- EXISTING SIGN
- PROPOSED STORM SEWER
- PROPOSED ELEVATION



PLAN VIEW SCALE: 1"=30'  
PROFILE VIEW HORIZONTAL SCALE: 1"=30'  
VERTICAL SCALE: 1"=3'  
REFER TO GENERAL NOTES ON SHEET 5

### STRUCTURE DATA TABLE STORM SEWERS - 600 SERIES

STR NO. 601 PROPOSED 2'x3' MANHOLE PER DETAIL 1 ON SHEET 4 CASTING CT-6 WITH CONCRETE COLLAR PER DETAILS 3&7 ON SHEET 4 LINE "A" STA: 10+27.00, LEFT 14.85' O/S LINE "B" STA: 3+27.00, 0.00' O/S TC: 942.69 - 942.59 21" INV(S) = 939.98 - 939.29 18" INV(N) = 939.60 - 939.24 15" INV (E) = 939.30 - 939.24	STR NO. 606 PROPOSED 2'x3' INLET PER DETAIL 6 ON SHEET 4 CASTING CT-6 WITH CONCRETE COLLAR PER DETAILS 3&7 ON SHEET 4 LINE "A" STA: 13+62.06, LEFT 19.54' O/S LINE "B" STA: 6+64.51, 0.00' O/S TC: 943.39 - 943.54 18" INV(N) = 939.84 - 939.94 18" INV(S) = 939.84 - 939.94
STR NO. 602 PROPOSED 48" MANHOLE PER DETAIL 1 ON SHEET 4 CASTING CT-6 WITH CONCRETE COLLAR PER DETAILS 3&7 ON SHEET 4 LINE "A" STA: 10+39.67, LEFT 12' O/S LINE "B" STA: 3+39.98, 0.00' O/S TC: 942.77 - 943.01 18" INV(N) = 939.53 - 939.51 18" INV(S) = 939.53 - 939.51 12" INV(E) = 940.46 - 8" Ø S.E. 940.41 12" INV(W) = 940.46 - 10" Ø 939.91	STR NO. 607 PROPOSED 72" MANHOLE PER DETAIL 2 ON SHEET 4 CASTING CT-6 WITH CONCRETE COLLAR PER DETAILS 3&7 ON SHEET 4 LINE "A" STA: 13+72.68, LEFT 13.87' O/S LINE "B" STA: 6+67.55, 0.00' O/S TC: 943.66 - 943.60 18" INV(N) = 939.86 - 939.85 18" INV(S) = 939.86 - 939.85 12" INV(E) = 939.60 - 940.20 8" INV(W) = 939.56 - 10" Ø 940.00 8" INV(S) = 939.98 - 940.20 8" INV(SE) = 940.00 - 10" Ø 940.20 8" Ø N.E. 940.20
STR NO. 603 PROPOSED 2'x3' INLET PER DETAIL 6 ON SHEET 4 CASTING CT-6 WITH CONCRETE COLLAR PER DETAILS 3&7 ON SHEET 4 LINE "A" STA: 10+52.26, LEFT 19.64' O/S LINE "B" STA: 3+54.71, 0.00' O/S TC: 942.70 - 942.85 18" INV(N) = 939.53 - 939.35 18" INV(S) = 939.53 - 939.46	STR NO. 608 PROPOSED 48" MANHOLE PER DETAIL 1 ON SHEET 4 CASTING CT-6 WITH CONCRETE COLLAR PER DETAILS 3&7 ON SHEET 4 LINE "A" STA: 13+85.41, LEFT 13.84' O/S LINE "B" STA: 6+89.28, 0.00' O/S TC: 943.60 - 943.62 18" INV(N) = 940.19 - NO CONNECTION 18" INV(NW) = 939.86 - 940.12 18" INV(S) = 939.86 - 940.02
STR NO. 604 PROPOSED 48" MANHOLE PER DETAIL 1 ON SHEET 4 CASTING CT-6 WITH CONCRETE COLLAR PER DETAILS 3&7 ON SHEET 4 LINE "A" STA: 12+26.50, LEFT 19.87' O/S LINE "B" STA: 5+28.93, LEFT 0.29' O/S TC: 942.62 - 942.64 18" INV(N) = 939.70 - 939.64 18" INV(S) = 939.70 - 939.64 12" INV(E) = 940.20 - 940.19	STR NO. 609 PROPOSED 2'x2' INLET PER DETAIL 6 ON SHEET 4 CASTING CT-6 WITH CONCRETE COLLAR PER DETAILS 3&7 ON SHEET 4 LINE "A" STA: 13+91.04, LEFT 19.72' O/S LINE "B" STA: 6+97.42, 0.00' O/S TC: 943.39 - 943.41 18" INV(S) = 939.87 - 940.11
STR NO. 605 PROPOSED 2'x2' INLET PER DETAIL 6 ON SHEET 4 CASTING CT-6 WITH CONCRETE COLLAR PER DETAILS 3&7 ON SHEET 4 LINE "A" STA: 12+26.49, LEFT 11.58' O/S LINE "B" STA: 5+28.94, RIGHT 8.00' O/S TC: 942.99 - 943.26 12" INV(W) = 940.22 - 940.26	STR NO. 610 PROPOSED 2'x2' INLET PER DETAIL 6 ON SHEET 4 CASTING CT-6 WITH CONCRETE COLLAR PER DETAILS 3&7 ON SHEET 4 LINE "A" STA: 13+72.78, RIGHT 25.43' O/S LINE "B" STA: 6+76.65, RIGHT 25.43' O/S TC: 943.62 - 943.78 12" INV(E) = 939.63 - NO CONNECTION 12" INV(W) = 939.63 - 940.03



PROPOSED STORM SYSTEM PROFILE [LINE "B"]

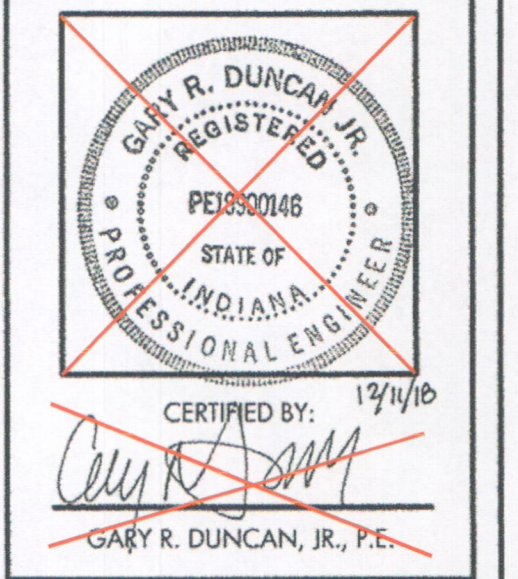
HAMILTON COUNTY, INDIANA

HAMILTON COUNTY SURVEYOR'S OFFICE  
HAMILTON COUNTY GOVERNMENT/JUDICIAL CENTER  
ONE HAMILTON COUNTY SQUARE, SUITE 188  
NOBLESVILLE, IN 46060  
PHONE: (317) 776-8495  
FAX: (317) 776-9628  
SURVEYOR@HAMILTONCOUNTY.IN.GOV



PROJECT NO:	06-17
WATERSHED NO:	296
FIELD BOOK:	10, PG 14-16
FIELD BY:	BR/SE
DRAWN BY:	RAV/CD
CHECKED BY:	AC
DATE:	12/6/17

BY:	
DATE:	
REVISIONS:	



CERTIFIED BY: *Gary R. Duncan, Jr.*  
GARY R. DUNCAN, JR., P.E.

PROJECT NAME:  
THISTLETHWAITE DRAIN  
CALIFORNIA STREET EXTENSION  
PROPOSED STORM SYSTEM  
PLAN & PROFILE  
SHEET NO.  
1 OF 5

PLOT DATE: Dec 11, 2018 - 3:54 pm