

*Kenton C. Ward, Surveyor*

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*Noblesville, Indiana 46060-2230*

To: Hamilton County Drainage Board

Date: August 11, 2004

Re: West Leg of Thistlewaite Regulated Drain Reconstruction

Attached are plans, specifications, drain map, drainage-shed map, and schedule of assessments for the reconstruction of the West Leg of Thistlewaite Drainage Area. The West Leg of Thistlewaite Drain was originally petitioned for reconstruction and designation as an urban drain on March 11, 2003. The West Leg of Thistlewaite Drain currently consists of tiled drain constructed in 1908. The affected tiled drain is approximately 3236 feet. The new reconstructed tile ditch will be approximately 649 feet in length with approximately 1,830 feet of new tile. The drainage area covers portion of West Leg of Thistlewaite in Hamilton County and benefits properties in Township 19 North, Section 11, and Range 2 East with a total acreage of approximately 203.08 acres.

The West Leg of Thistlewaite Drain outlets into the Thistlewaite Main Drain which drains into the Stahl Dredge. Currently, 2250 lineal feet of open drain and over 500 feet of swale exist in the West Leg of Thistlewaite Drain's current configuration. The new configuration will have 4,050 feet of open ditch and 1,740 feet of tiled drain.

The following pages contain the calculations for this project:

Calculations:

**Hydrology**

Using USGS Regression Equation (Area 3) per INDOT's Design Manual Part IV  
Hydrology/Hydraulics pp. 29-9(3) - 29-9(10)

$$Q_{10} = 141 * (DA)^{0.772} * (SL)^{0.384} * (I_{24,2}-2.5)^{0.894}$$

$$Q_{100} = 181 * (DA)^{0.779} * (SL)^{0.466} * (I_{24,2}-2.5)^{0.831}$$

Where:

DA = Drainage Areas (mi<sup>2</sup>) A<sub>1</sub> = 0.32 mi<sup>2</sup> A<sub>2</sub> = 0.19 mi<sup>2</sup> A<sub>3</sub> = 0.07 mi<sup>2</sup>

SL = Channel Slope (ft/mi) SL<sub>Restricted</sub> = 5.28 ft/mi (0.1%) SL<sub>Proposed</sub> = 12.14 ft/mi (0.23%)

I<sub>24,2</sub> = Max. 24-hr, 2-yr Precipitation = 2.90 in/hr

*A<sub>1</sub> = Area North of S.R. 47 of the West Leg of Thistlewaite = 203 Acres or 0.32 mi<sup>2</sup>*

**Restricted**

$$Q_{10} = 141 * (0.32)^{0.772} * (5.28)^{0.384} * (2.9-2.5)^{0.894} = 48.9 \text{ cfs}$$

$$Q_{100} = 181 * (0.32)^{0.779} * (5.28)^{0.466} * (2.9-2.5)^{0.831} = 75.6 \text{ cfs}$$

**Proposed**

$$Q_{10} = 141 * (0.32)^{0.772} * (12.14)^{0.384} * (2.9-2.5)^{0.894} = 63.8 \text{ cfs}$$

$$Q_{100} = 181 * (0.32)^{0.779} * (12.14)^{0.466} * (2.9-2.5)^{0.831} = 98.7 \text{ cfs}$$

*A<sub>2</sub> = Area North of Existing Breather of the West Leg of Thistlewaite = 119.4 Acres or 0.19 mi<sup>2</sup>*

**Existing**

$$Q_{10} = 141 * (0.19)^{0.772} * (5.28)^{0.384} * (2.9-2.5)^{0.894} = 32.7 \text{ cfs}$$

$$Q_{100} = 181 * (0.19)^{0.779} * (5.28)^{0.466} * (2.9-2.5)^{0.831} = 50.3 \text{ cfs}$$

*A<sub>3</sub> = Area North of 2<sup>nd</sup> Street of the West Leg of Thistlewaite = 119.4 Acres or 0.19 mi<sup>2</sup>*

**Existing**

$$Q_{10} = 141 * (0.07)^{0.772} * (5.28)^{0.384} * (2.9-2.5)^{0.894} = 15.1 \text{ cfs}$$

$$Q_{100} = 181 * (0.07)^{0.779} * (5.28)^{0.466} * (2.9-2.5)^{0.831} = 23.1 \text{ cfs}$$

**Open Channel Design**

Using the flow data from the hydrology, the proposed channel from Sta. 5+35 to Sta. 23+69 was determined to be a 4' bottom width with a slope of 0.23 % fall.

**Structure at State Road 47**

Using the flow data and HY-8 software, the existing 15" dia. Culvert pipe and 15" tile were deemed inadequate to handle the proposed discharge. The tile will be replaced with a 36" dia. RCP while the pipe culvert will be upgraded to a 24" dia. RCP. The Q<sub>100</sub> backwater will improve from 1.91' to 0.24' at this structure.

Reconstruction Project:

The proposed reconstruction will be a replacement of 649 lineal feet from Second Street to a new end section. This structure will empty into 1990 lineal feet of open ditch which will replace the existing legal drain. within the town limits of Sheridan

The drainage area for Main Ditch north of Second Street (241st Street) shall be limited to an allowable 0.24 cfs per acre of for future development.

As for the width of the new ditch, it was determined to use a minimum bottom width for this project. From Sta. 10+00 to 29+90, a 4' bottom width will be used. From Sta. 28+33 to 36+05 and 4+64 to 10+00, it was determined that a 36" RCP will handle the 10-year storm event. The hydraulic data obtained from site history, used for this model included:

Watershed Calculated	= 203.0 acres
Thistlewaite West (Restricted) Q <sub>10</sub>	= 48.9 cfs
Thistlewaite West (Proposed) Q <sub>100</sub>	= 98.7 cfs
High Water Surface Elevation at 2 <sup>nd</sup> Street	~ 847 MSL

It was determined that isolated flooding occurs along Second Street (241<sup>st</sup> Street) just east of the drain. To help alleviate this problem, a new arm will need to be constructed. The engineer's recommendation is a new 15" RCP to be constructed parallel to the South R.O.W. of Second Street in place of the existing pipe and continue west to a new structure that is connected to the new 36" RCP and mainline of the West Leg of the Thistlewaite Drain. This design could be modified near this area to reflect the potential interference of utilities.

The following is an approximate description of the West Leg of Thistlewaite Drain derived from the description of 1908, Commissioners Record P, page 113 and the proposed Arm#1:

Being a part of the Northeast Quarter of Section 6, Township 19 North, Range 3 East, and a part of the Northwest, Northeast, Southwest and Southeast Quarter of Section 31, Township 20 North, Range 3 East, all in Adams Township, Hamilton County, Indiana, being more particularly described as follows:

Commencing at station 0+00 in the center of the existing Thistlewaite West Leg Regulated Drain (open ditch), said point being 74.92 feet East and 521.15 feet South of the Southwest corner of the Southeast Quarter of Section 31, Township 20 North, Range 3 East, with the West line of the said Quarter Section having an assumed bearing of North 0 degrees 47 minutes 08 seconds West;  
thence North 0 degrees 47 minutes 08 seconds West, along the said regulated drain a distance of 2368.58 feet to station 23+68.58;  
thence North 1 degree 34 minutes 46 seconds West, along the said regulated drain a distance of 771.75 feet to station 31+40.33;  
thence North 1 degree 35 minutes 11 seconds West, along the said regulated drain a distance of 37.20 feet to station 31+77.53;  
thence South 81 degrees 22 minutes 09 seconds West, along the said regulated drain a distance of 33.65 feet to an existing structure of the said existing regulated drain at station 32+11.18.

ALSO with: Arm #1 of the Thistlewaite West Leg Regulated Drain, being more particularly described as follows:

Commencing at station 31+40.33 of the Thistlewaite West Leg Regulated Drain, also being station 0+00 of the said arm;

thence North 87 degrees 10 minutes 56 seconds East, along the said arm a distance of 179.42 feet to station 1+79.42 being the point of intersection of a lateral of the said arm having a bearing of North 4 degrees 16 minutes 31 seconds West, and a distance of 16.37 feet;  
thence South 88 degrees 31 minutes 07 seconds East, along said arm a distance of 145.43 feet to station 3+24.85 being the end of the said arm and being the point of intersection of a lateral of the said arm having a bearing of North 20 degrees 34 minutes 53 seconds West, and a distance of 23.90 feet;

**Thistlewaite West Leg Regulated Drain Easement for Wesco Inc. (DR. 201-95).  
– 02-01-31-00-00-033.000**

Being a part of the Southwest and Southeast Quarters of Section 31, Township 20 North, Range 3 East, all in Adams Township, Hamilton County, Indiana, Said easement measuring 75 feet at right angles from the top of the bank of the open drain and measuring 35 feet at right angles from the centerline of the in-closed storm pipe. Being more particularly described as follows:

Commencing at the Southwest corner of the Southeast Quarter of Section 31, Township 20 North, Range 3 East said point being the POINT OF BEGINNING; thence South 89 degrees 31 minutes 05 seconds West, (assumed bearing) along the south line of the Southwest quarter of the said section a distance of 22.23 feet; thence North 0 degrees 47 minutes 08 seconds West, a distance of 1851.95 feet; thence North 89 degrees 52 minutes 33 seconds East, a distance of 54.93 feet; thence North 1 degree 34 minutes 46 seconds West, a distance of 131.67 feet; thence North 89 degrees 52 minutes 33 seconds East, a distance of 14.87 feet; thence South 0 degrees 32 minutes 09 seconds West, a distance of 123.75 feet; thence North 89 degrees 52 minutes 33 seconds East, a distance of 59.72 feet; thence South 1 degree 34 minutes 46 seconds East, a distance of 7.89 feet; thence North 89 degrees 52 minutes 33 seconds East, a distance of 55.06 feet; thence South 0 degrees 47 minutes 08 seconds East, a distance of 1521.08 feet; thence South 89 degrees 35 minutes 46 seconds West, a distance of 84.16 feet; thence South 0 degrees 32 minutes 09 seconds West, a distance of 330.00 feet; thence South 89 degrees 35 minutes 46 seconds West, a distance of 66.00 feet to the POINT OF BEGINNING; said described tract containing 7.033 acres, more or less.

**Thistlewaite West Leg Regulated Drain Easement for Cameron D & Carol A Greenwood. (DR. 344-468-69). – 01-01-31-04-11-031.000**

Being a part of the Southeast Quarters of Section 31, Township 20 North, Range 3 East, all in Adams Township, Hamilton County, Indiana, Said easement measuring 75 feet at right angles from the top of the bank of the open drain. Being more particularly described as follows:

Commencing at the Southwest corner of the Southeast Quarter of Section 31, Township 20 North, Range 3 East; thence North 89 degrees 35 minutes 46 seconds East, (assumed bearing) along the south line of the said quarter a distance of 66.00 feet to the POINT OF BEGINNING; thence North 0 degrees 32 minutes 09 seconds East, a distance of 330.00 feet; thence North 89 degrees 35 minutes 46 seconds East, a distance of 84.16 feet; thence South 0 degrees 47 minutes 08 seconds East, a distance of 329.96 feet; thence South 89 degrees 35 minutes 46 seconds West, a distance of 91.77 feet to the POINT OF BEGINNING; said described tract containing 0.666 acres, more or less.

**Thistlewaite West Leg Regulated Drain Easement for Childers, Jason L & Julie (Inst. #200000056633). – 01-01-31-00-00-028.000, 02-01-31-00-00-029.000 & 02-01-31-00-00-030.000**

Being a part of the Southwest and Southeast Quarters of Section 31, Township 20 North, Range 3 East, all in Adams Township, Hamilton County, Indiana, Said easement measuring 35 feet at right angles from the centerline of the in-closed storm pipe. Being more particularly described as follows:

Commencing at the Northwest corner of the Southeast Quarter of Section 31, Township 20 North, Range 3 East said point being the POINT OF BEGINNING; thence North 89 degrees 52 minutes 33 seconds East, (assumed bearing) along the north line of the said quarter a distance of 33.00 feet; thence South 0 degrees 32 minutes 09 seconds West, a distance of 330.00 feet; thence North 89 degrees 52 minutes 33 seconds East, a distance of 10.26 feet; thence South 1 degree 34 minutes 46 seconds East, a distance of 453.87 feet;

thence South 89 degrees 52 minutes 33 seconds West, a distance of 60.02 feet; thence North 0 degrees 32 minutes 09 seconds East, a distance of 123.75 feet; thence South 89 degrees 52 minutes 33 seconds West, a distance of 14.58 feet; thence North 1 degree 34 minutes 46 seconds West, a distance of 660.17 feet; thence North 89 degrees 52 minutes 33 seconds East, a distance of 38.94 feet to the POINT OF BEGINNING; said described tract containing 1.193 acres, more or less.

**Thistlewaite West Leg Regulated Drain Easement for Leonard, Lisco & Martha (Inst. #9709742974).  
– 02-01-31-04-01-001.000**

Being a part of the Southeast Quarters of Section 31, Township 20 North, Range 3 East, all in Adams Township, Hamilton County, Indiana, Said easement measuring 25 feet at right angles from the existing South Right-of-way line along 241<sup>st</sup> Street. Being more particularly described as follows:

Commencing at the Northwest corner of the Southeast Quarter of Section 31, Township 20 North, Range 3 East; thence North 89 degrees 52 minutes 33 seconds East, (assumed bearing) along the north line of the said quarter a distance of 33.00 feet to the POINT OF BEGINNING; thence South 0 degrees 32 minutes 09 seconds West, a distance of 45.00 feet; thence North 89 degrees 52 minutes 33 seconds East, a distance of 132.00 feet; thence North 0 degrees 32 minutes 09 seconds East, a distance of 45.00 feet; thence South 89 degrees 52 minutes 33 seconds West, a distance of 132.00 feet to the POINT OF BEGINNING; said described tract containing 0.136 acres, more or less.

**Thistlewaite West Leg Regulated Drain Easement for Gibbons, Stacie (DR. 145-150).  
– 02-01-31-04-01-002.000**

Being a part of the Southeast Quarters of Section 31, Township 20 North, Range 3 East, all in Adams Township, Hamilton County, Indiana, Said easement measuring 25 feet at right angles from the existing South Right-of-way line along 241<sup>st</sup> Street. Being more particularly described as follows:

Commencing at the Northwest corner of the Southeast Quarter of Section 31, Township 20 North, Range 3 East; thence North 89 degrees 52 minutes 33 seconds East, (assumed bearing) along the north line of the said quarter a distance of 165.00 feet to the POINT OF BEGINNING; thence South 0 degrees 32 minutes 09 seconds West, a distance of 45.00 feet; thence North 89 degrees 52 minutes 33 seconds East, a distance of 132.00 feet; thence North 0 degrees 32 minutes 09 seconds East, a distance of 45.00 feet; thence South 89 degrees 52 minutes 33 seconds West, a distance of 132.00 feet to the POINT OF BEGINNING; said described tract containing 0.136 acres, more or less.

**Thistlewaite West Leg Regulated Drain Easement for Blankenship, Jason & Brenda (Inst. #199909948886). – 02-01-31-04-01-003.001**

Being a part of the Southeast Quarters of Section 31, Township 20 North, Range 3 East, all in Adams Township, Hamilton County, Indiana, Said easement measuring 25 feet at right angles from the existing South Right-of-way line along 241<sup>st</sup> Street. Being more particularly described as follows:

Commencing at the Northwest corner of the Southeast Quarter of Section 31, Township 20 North, Range 3 East; thence North 89 degrees 52 minutes 33 seconds East, (assumed bearing) along the north line of the said quarter a distance of 297.00 feet to the POINT OF BEGINNING; thence continuing East along said line, a distance of 66.00 feet; thence South 0 degrees 32 minutes 09 seconds West, a distance of 45.00 feet; thence South 89 degrees 52 minutes 33 seconds West, a distance of 66.00 feet; thence North 0 degrees 32 minutes 09 seconds East, a distance of 45.00 feet to the POINT OF BEGINNING; said described tract containing 0.068 acres, more or less.

**Thistlewaite West Leg Regulated Drain Easement for Feeney, Shawn L & Donna D (Inst. #199609639317). – 02-01-31-02-01-005.000**

Being a part of the Northeast Quarters of Section 31, Township 20 North, Range 3 East, all in Adams Township, Hamilton County, Indiana, Said easement measuring 25 feet at right angles from the existing North Right-of-way line along 241<sup>st</sup> Street. Being more particularly described as follows:

Commencing at the Southwest corner of the Northeast Quarter of Section 31, Township 20 North, Range 3 East; thence North 89 degrees 52 minutes 33 seconds East, (assumed bearing) along the south line of the said quarter a distance of 274.29 feet to the POINT OF BEGINNING; thence North 0 degrees 07 minutes 27 seconds West, a distance of 20.00 feet; thence North 89 degrees 52 minutes 33 seconds East, a distance of 13.46 feet; thence North 0 degrees 00 minutes 00 seconds East, a distance of 25.00 feet; thence North 89 degrees 52 minutes 33 seconds East, a distance of 50.00 feet; thence South 0 degrees 00 minutes 00 seconds East, a distance of 25.00 feet; thence North 89 degrees 52 minutes 33 seconds East, a distance of 8.75 feet; thence South 0 degrees 07 minutes 27 seconds East, a distance of 20.00 feet; thence North 71 degrees 19 minutes 23 seconds West, a distance of 62.06 feet to the POINT OF BEGINNING; said described tract containing 0.062 acres, more or less.

**Thistlewaite West Leg Regulated Feeney, Shawn L (Inst. #200400049189). – 02-01-31-02-01-003.000**

Being a part of the Northeast Quarters of Section 31, Township 20 North, Range 3 East, all in Adams Township, Hamilton County, Indiana, Said easement measuring 25 feet at right angles from the existing North Right-of-way line along 241<sup>st</sup> Street. Being more particularly described as follows:

Commencing at the Southwest corner of the Northeast Quarter of Section 31, Township 20 North, Range 3 East; thence North 89 degrees 52 minutes 33 seconds East, (assumed bearing) along the south line of the said quarter a distance of 140.00 feet to the POINT OF BEGINNING; thence North 0 degrees 07 minutes 27 seconds West, a distance of 20.00 feet; thence North 89 degrees 52 minutes 33 seconds East, a distance of 9.55 feet; thence North 0 degrees 00 minutes 00 seconds East, a distance of 25.00 feet; thence North 89 degrees 52 minutes 33 seconds East, a distance of 50.00 feet; thence South 0 degrees 00 minutes 00 seconds East, a distance of 25.00 feet; thence North 89 degrees 52 minutes 33 seconds East, a distance of 80.45 feet; thence South 0 degrees 07 minutes 27 seconds East, a distance of 20.00 feet; thence South 89 degrees 52 minutes 33 seconds West, a distance of 140.00 feet to the POINT OF BEGINNING; said described tract containing 0.093 acres, more or less.

**Thistlewaite West Leg Regulated Drain Easement for Seevers, Judy M (Inst. #9212046). – 02-01-31-02-01-002.001**

Being a part of the Northeast Quarters of Section 31, Township 20 North, Range 3 East, all in Adams Township, Hamilton County, Indiana, Said easement measuring 25 feet at right angles from the existing North Right-of-way line along 241<sup>st</sup> Street. Being more particularly described as follows:

Commencing at the Southwest corner of the Northeast Quarter of Section 31, Township 20 North, Range 3 East; thence North 89 degrees 52 minutes 33 seconds East, (assumed bearing) along the south line of the said quarter a distance of 62.00 feet to the POINT OF BEGINNING; thence North 0 degrees 07 minutes 27 seconds West, a distance of 20.00 feet; thence North 89 degrees 52 minutes 33 seconds East, a distance of 78.00 feet; thence South 0 degrees 07 minutes 27 seconds East, a distance of 20.00 feet; thence South 89 degrees 52 minutes 33 seconds West, a distance of 78.00 feet to the POINT OF BEGINNING; said described tract containing 0.036 acres, more or less.

**Thistlewaite West Leg Regulated Drain Easement for Platt, William Kevin & Amy E (Inst. #9609621075). – 02-01-31-02-01-001.000**

Being a part of the Northeast Quarters of Section 31, Township 20 North, Range 3 East, all in Adams Township, Hamilton County, Indiana, Said easement measuring 25 feet at right angles from the existing North Right-of-way line along 241<sup>st</sup> Street. Being more particularly described as follows:

Commencing at the Southwest corner of the Northeast Quarter of Section 31, Township 20 North, Range 3 East, said point being the POINT OF BEGINNING; thence North 0 degrees 07 minutes 27 seconds West, a distance of 20.00 feet; thence North 89 degrees 52 minutes 33 seconds East, a distance of 62.00 feet; thence South 0 degrees 07 minutes 27 seconds East, a distance of 20.00 feet; thence South 89 degrees 52 minutes 33 seconds West, a distance of 62.00 feet to the POINT OF BEGINNING; said described tract containing 0.028 acres, more or less.

The maintenance of the crossings shall be the responsibility of the landowner per IC 36-9-27-72(d).



## QUANTITIES

Clearing as specified - Open Ditch	0.2 acres
Open Ditch Reconstruction	1990 lineal feet
Tile outlet pipes with animal guard	
a. 6" x 20' CMP	5 each
b. 8" x 20' CMP	5 each
c. 10" x 20' CMP	5 each
d. 12" x 20' CMP	5 each
e. 15" x 20' CMP	5 each
Install Pipe Crossings 24" x 30 ft.	1 each
Install Surface Water Pipe 12" x 40 ft.	4 each
Seeding, Fertilizing, and Mulching as specified	
a. Open Ditch - Channel only -20' x 1,850'	0.9 acres
b. Filter Strip - 20' x 3,700'	1.7 acres

The allowable runoff rates for the drainage basin will be based upon the 10 year, 24-hour storm event. The rate of 0.2 cfs/acre will be set for the area within the drainage basin for future development.

The construction of this drain will require acquisition of new easement from Sta. 28+33 to Sta. 36+05.



Shown on the plans, to be considered as part of the drain is the placement of twenty foot (20') filter strips along both sides of the new open drain.


Upon a check of the U.S.G.S. Quadrangle Map, I found that there is no surface drains in the limits of this project. Therefore per IC 14-28-1-22 a permit from IDNR is not required.

I have reviewed the drainage shed for the West Leg of Thistlewaite Drain and upon considering each parcel individually; I believe that each parcel within the drainage shed will have equal benefits by land use as provided by the drain. Therefore I recommend each tract be assessed on the same basis equally by land use. Therefore for Highways and Roads, I recommend a reconstruction assessment of \$2,500.00 per acre based on its 75% impervious area and lack of detention. For future commercial (including industrial and multi-family) tracts, undeveloped, I recommend a reconstruction assessment of \$1,000.00 per lot based on its 40% impervious area. For Residential and Agricultural tracts, I recommend a reconstruction assessment of \$627.36 per acre.

The area in which the drainage shed for this drain is located is in the process of urban growth. The Town of Sheridan is expanding westward towards this area and will encompass portions of the drainage shed in the near future. Various tracts listed above have already been converted to an urban use. Therefore, per IC 36-9-27-67, I recommend the Board designate the drain as an urban drain.

Damages for the WESCO property should be set at \$15,000.00.

I recommend that the Board set a hearing for this reconstruction for September 27, 2004.



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Kenton C. Ward,  
Hamilton County Surveyor

KCW/wae

Property Owner	Parcel Number	Acres Benefited	Cost of Reconstruction	% of Total Cost	% of Acres
Wallace Farms	01-01-31-00-00-012.000	20.4	\$12,798.14	4.56	10.05
	01-01-31-00-00-013.000	13	\$8,155.68	2.91	6.40
	01-01-31-00-00-002.001	8	\$5,018.88	1.79	3.94
Wesco Inc.	02-01-31-00-00-033.000	74.48	\$13,725.77	16.66	36.68
<b>TOTALS</b>		115.88		25.92	57.07

IN THE HAMILTON COUNTY DRAINAGE BOARD

STATE OF INDIANA

PETITION TO DESIGNATE WESTERN LEG )  
OF THE THISTLEWAITE DRAIN AS )  
AN URBAN DRAIN, and )  
TO RECONSTRUCT THE WESTERN LEG OF )  
THE THISTLEWAITE DRAIN )

Case No.



Comes now the Sheridan Town Council, in person and by counsel, and petitions the Hamilton County Drainage Board to designate the western leg of the Thistlewaite Drain, as previously designated by the drainage board, as an urban drain, and that said western leg of the Thistlewaite Drain be reconstructed, and in support thereof would show the board:

1. The western leg of the Thistlewaite Drain, as previously designated by the Hamilton County Drainage Board, should be designated as an urban drain because 423 of the 569 parcels of ground that were in the list of reconstruction parcels for the Thistlewaite Drain or Drain Number R269 on the computerized records of the Hamilton County Drainage Board were located within the boundaries of the Town of Sheridan in 1999, and the Town of Sheridan is anticipating a subdivision being developed in 2004, located primarily on a parcel of ground north of Second Street bordering the former site of the Monon Railroad. The former site of the Monon Railroad is a part of the Town's long-range park plan for a trail through Sheridan. The western leg of the Thistlewaite drain is also located on a large parcel of ground that is zoned for industrial growth of the Town Of Sheridan, and is a part of Sheridan's Tax Increment Financing District. The land drained by the western leg of the Thistlewaite Drain will appreciably benefit from drainage that will provide the maximum practicable protection against flooding, and will in the reasonably foreseeable future be used generally for commercial, industrial, large estate housing, or for similar purposes.

2. The western leg of the Thistlewaite Drain will not, without reconstruction, provide proper drainage for urban land as defined by IC 36-9-27-2.

3. The Sheridan Town Council believes, and therefore alleges, that after reconstruction of the western leg of the Thistlewaite Drain, proper drainage can be provided for those parcels of ground within the Town of Sheridan, and defined by the Hamilton County Drainage Board as within the Thistlewaite Drain watershed, that were not improved by the reconstruction of the eastern leg of the Thistlewaite Drain.

4. A reasonable part of the land within the western leg of the Thistlewaite Drain watershed has been or is being converted from rural land to urban land by being zoned for industrial growth. Members of the Sheridan Town Council and officials of the Hamilton County Alliance have had discussions from time to time with prospects, and consultants for prospects, considering moving their businesses to the industrially zoned area that is drained by the western leg of the Thistlewaite drain.

5. One (1) or more tracts within the Thistlewaite Drain watershed are changing from rural land to urban land. The Sheridan Plan Commission and all other known governmental authorities have approved the conversion of previously rural land into a commercial retail center to the north, with a large estate residential subdivision to the south from the former Parcel Number 02-05-06-00-00-009.000. The retail center is half completed, and the completed portion of

the retail center is approximately half occupied with 2 restaurants, a video store, and a doctor's office

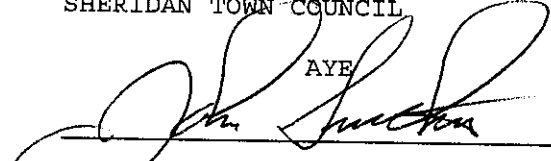
WHEREFORE, the Sheridan Town Council petitions the Hamilton County Surveyor, and the Hamilton County Drainage Board to designate the Thistlewaite Drain or such portion of the Thistlewaite Drain as the surveyor or the board deems appropriate, as an urban drain, and said Thistlewaite Drain, particularly including the portion thereof within the Town of Sheridan, and north of State Road 47, be reconstructed, and for all other relief just and proper in the premises.

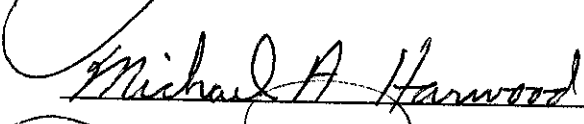
Adopted this 11th day of March, 2003, by the Sheridan Town Council.

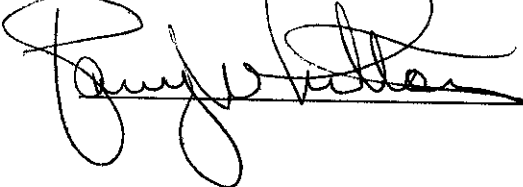
SHERIDAN TOWN COUNCIL

AYE


NAY

  
\_\_\_\_\_ John Snethen \_\_\_\_\_

  
\_\_\_\_\_ Michael A. Harwood \_\_\_\_\_

  
\_\_\_\_\_ Larry W. Sutton \_\_\_\_\_

ATTEST:

  
\_\_\_\_\_  
Connie Pearson,  
Clerk-Treasurer

This instrument was prepared by David F. Tudor, Attorney at Law.

STATE OF INDIANA        )  
                                  ) ss:  
COUNTY OF HAMILTON    )

BEFORE THE HAMILTON COUNTY  
DRAINAGE BOARD  
NOBLESVILLE, INDIANA

IN THE MATTER OF THE  
RECONSTRUCTION OF THE  
***Thistlewaite Drain, West Leg***

**FINDINGS AND ORDER FOR RECONSTRUCTION**

The matter of the proposed Reconstruction of the ***Thistlewaite Drain, West Leg*** came before the Hamilton County Drainage Board for hearing ***on September 27, 2004***, 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.

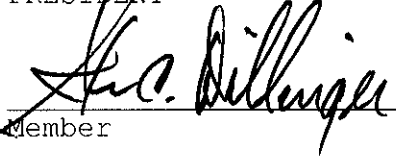
The Board further finds that it has jurisdiction of these proceedings and that all required notices have been duly given or published as required by law.

Wherefore, it is ORDERED, that the proposed Reconstruction of the ***Thistlewaite Drain, West Leg*** 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

ATTEST:   
Executive Secretary

KLW



SURVEYOR'S OFFICE  
**Hamilton County**

*Kenton C. Ward, Surveyor*

*Phone (317) 776-8495*

*Fax (317) 776-9628*

*Suite 188*

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

January 12, 2006

To: Hamilton County Drainage Board

Re: West Leg of the Thistlewaite Regulated Drain Reconstruction

**FINAL REPORT**

This is the Inspector's Final Report on the West Leg of the Thistlewaite Regulated Drain, located in Section 31, Township 20, Range 3; also Section 6, Township 19, Range 3; in Adams Township in Hamilton County, Indiana.

This project reconstructed a portion of the West Leg of the Thistlewaite Drain, and consisted of 1,895 feet of new open ditch, 492 feet of new swale, 1,288 feet of 36" Reinforced Concrete Pipe (RCP), 54 feet of 24" RCP, 395 feet of 15" RCP, and nine concrete manholes. The as-built plans have been completed and are attached.

The date of the Surveyor's Report for the West Leg of the Thistlewaite Drain Reconstruction was August 11, 2004. The Reconstruction Hearing was held on February 28, 2005, at which time the project was approved at an estimated cost of \$262,967.60. (Drainage Board Minutes Book 7, Pages 576-587.)

The Hamilton County Drainage Board awarded the contract on March 14, 2005 to Sweeney Construction Corporation. Sweeney Construction Corporation bid amount was \$218,535.00. (Drainage Board Minutes Book 8, Page 232A.)

The contractor provided a surety bond to the Board in the amount of \$262,560.12. The bond provider is Navigators Insurance Company, and the bond number is 535053, dated March 21, 2005.

As of January 12, 2006, I hereby attest to and agree that the Drain has been 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 for the work was on December 12, 2005.



Statement of All Incurred Expenses Paid signed by the contractor as required in IC 36-9-27-82(b) was received on August 30, 2005. The contractor's claim for release of retainage was submitted on August 12, 2005.

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

Pay Request #1 submitted 5-3-05	Claim # 05-070	Paid 5-24-05	\$ 20,184.10
Pay Request #2 submitted 5-17-05	Claim # 05-077	Paid 6-14-05	28,982.45
Pay Request #3 submitted 6-3-05	Claim # 05-083	Paid 6-28-05	105,970.60
Pay Request #4 submitted 6-17-05	Claim # 05-087	Paid 7-12-05	28,818.40
Pay Request #5 submitted 7-14-05	Claim # 05-093	Paid 8-9-05	19,235.50
Pay Request #6 submitted 7-29-05	Claim # 05-099	Paid 8-23-05	13,185.05
Retainage Request submitted 8-12-05	Claim # 05-118	Paid 11-29-05	<u>38,184.02</u>
Total – Sweeney Construction Corporation			\$ 254,560.12

There was a total of two change orders for additional work or field revision on the project as allowed by IC 36-9-27-80.5. Change Order #1 was approved on May 23, 2005 by the Hamilton County Drainage Board and consisted of \$34,006.30 for ditch dredging; for traffic control on SR 47; for a larger pipe crossing; and for additional items to resolve utility conflicts. (Drainage Board Minutes Book 8, Pages 320-321.)

The change order details are as follows:

**Change Order #1**

Traffic Control	1 Lump Sum	\$ 4,939.00	\$ 4,939.00
24" RCP at SR 47	50 feet	\$ 65.50	\$ 3,275.00
24" RCP End Section	2 each	\$ 965.00	\$ 1,930.00
Ditch Dredging	2207 feet	\$ 5.90	\$13,021.30
Pipe Crossing 24" CMP	- 1 each	- \$ 1,600.00	- \$ 1,600.00
Pipe Crossing 36" RCP	30 feet	\$ 69.00	\$ 2,070.00

Additional items to resolve utility conflicts:

MH 4' Dia. Mod. CB	- 5 each	- \$ 1,373.00	- \$ 6,865.00
MH 5' Dia. Mod. CB	2 each	\$ 1,653.00	\$ 3,306.00
Type 'A' Inlet (24" x 24")	4 each	\$ 978.00	\$ 3,912.00
Casting Neenah #3286-8V	4 each	\$ 412.00	\$ 1,648.00
Asphalt Repair	124 sys	\$ 57.00	\$ 7,068.00
Road Demolition	124 sys	\$ 10.50	<u>\$ 1,302.00</u>

**Change Order #1 Total** **\$ 34,006.30**

Change Order #2 was approved on August 8, 2005 by the Hamilton County Drainage Board and consisted of \$2,018.82 for resolving sanitary sewer conflicts and additional and deducted work for final payment.

**Change Order #2**

Clearing	.01 acres	\$ 32,000.00	\$ 3,200.00
Channel Excavation	-132 feet	\$ 28.50	- \$ 3,762.00
36" RCP	-24 feet	\$ 69.00	- \$ 1,656.00
15" RCP	-23 feet	\$ 58.00	- \$ 1,334.00
Casting Neenah #3501	- 4 each	\$ 337.00	- \$ 1,348.00
Casting Neenah #4342	-1 each	\$ 196.00	- \$ 196.00
Casting Neenah #1642	2 each	\$ 264.00	\$ 528.00
Tile Outlet Pipe 6"x 20'	- 1 each	\$ 379.00	- \$ 379.00
Tile Outlet Pipe 8"x 20'	3 each	\$ 419.00	\$ 1,257.00
Tile Outlet Pipe 10"x 20'	- 3 each	\$ 434.00	- \$ 1,302.00
Tile Outlet Pipe 12"x 20'	- 4 each	\$ 464.00	- \$ 1,856.00
Tile Outlet Pipe 15"x 20'	- 4 each	\$ 489.00	- \$ 1,956.00
Tile Outlet Pipe 18"x 20'	1 each	\$ 514.00	\$ 514.00
Seeding Filter Strip	0.3 acre	\$ 2,400.00	\$ 720.00
Silt Fencing	- 1,000 Lineal feet	\$ 0.60	\$ 600.00
Asphalt Repair	120 Square yards	\$ 57.00	\$ 6,840.00
24"RCP	- 2 feet	\$ 65.50	- \$ 131.00
Road Demolition	- 124 Square yards	\$ 10.50	- \$ 1,302.00
Re-route 2" pipe	1 Lump sum	\$ 367.00	\$ 367.00
Demolition of concrete base of headwall	1 Lump sum	\$ 1,700.32	\$ 1,700.32
Raising downstream opening of Structure #2	1 Lump sum	\$ 458.00	\$ 458.00
Increase in side slopes of swale	1 Lump sum	\$ 2,256.50	\$ 2,256.50

**Change Order # 2 Total** **\$ 2,018.82**

The final costs for the reconstruction are as follows:

Bid Item Totals	\$ 218,535.00
Change Order #1	\$ 34,006.30
Change Order #2	<u>\$ 2,018.82</u>
Total Construction Cost	\$ 254,535.00

Engineer's Estimate	\$ 262,967.60
Total Construction Cost	<u>\$ 254,535.00</u>
Unexpended Construction Funds	\$ 8,432.60

Per Indiana Code 36-9-27-85(d), I recommend that the unexpended reconstruction funds be transferred to the periodic maintenance fund for the Thistlewaite Drain.

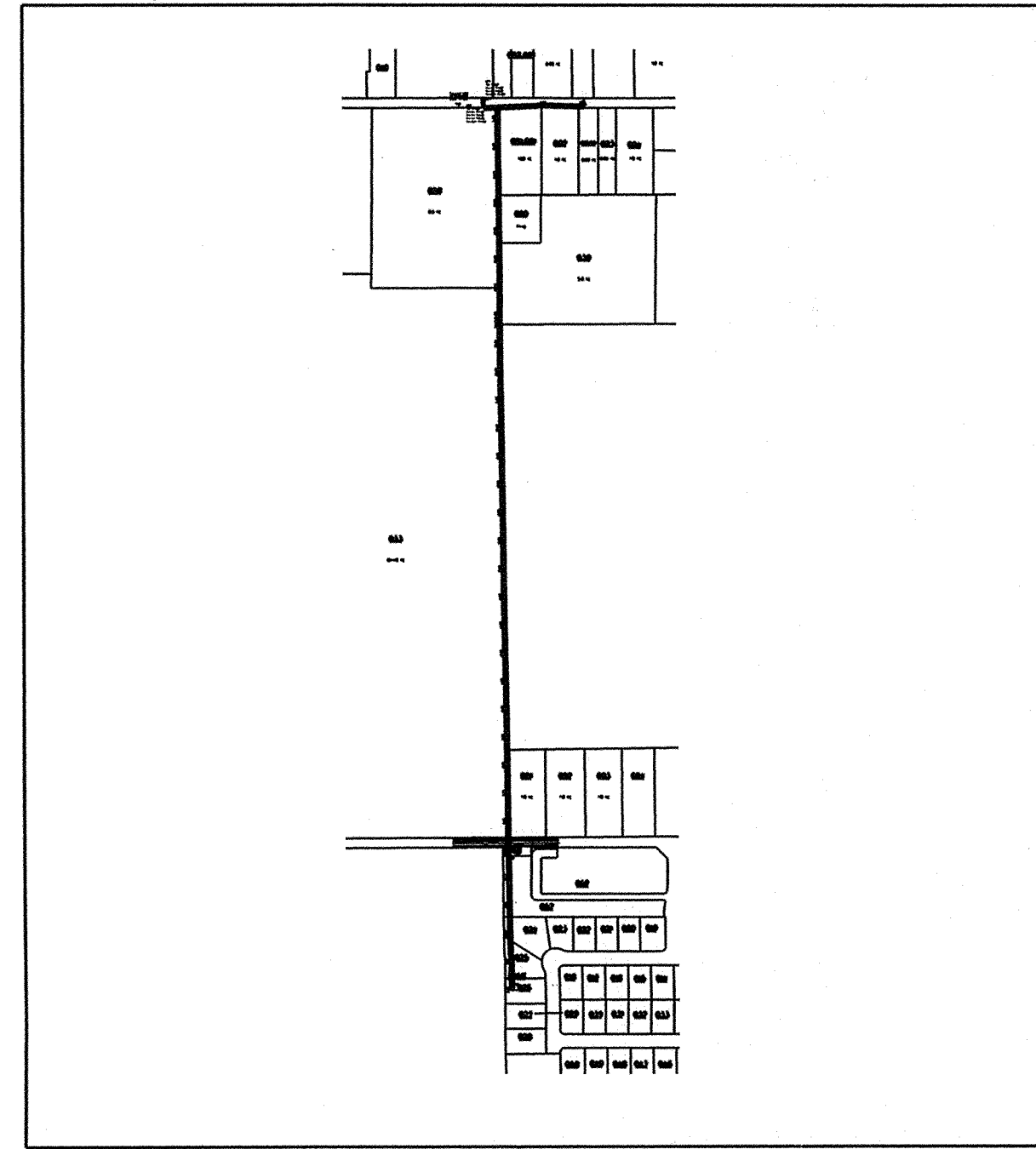
I recommend the Board approve the reconstruction as complete and acceptable. I also recommend that the Board release the surety provided by the contractor per IC 36-9-27-78.

Respectfully,

A handwritten signature in black ink, appearing to read "Michael R. Kole", written over a horizontal line.

Michael R. Kole  
Inspector

# HAMILTON COUNTY SURVEYOR'S OFFICE



SITE LOCATION MAP



HAMILTON COUNTY SURVEYOR'S OFFICE

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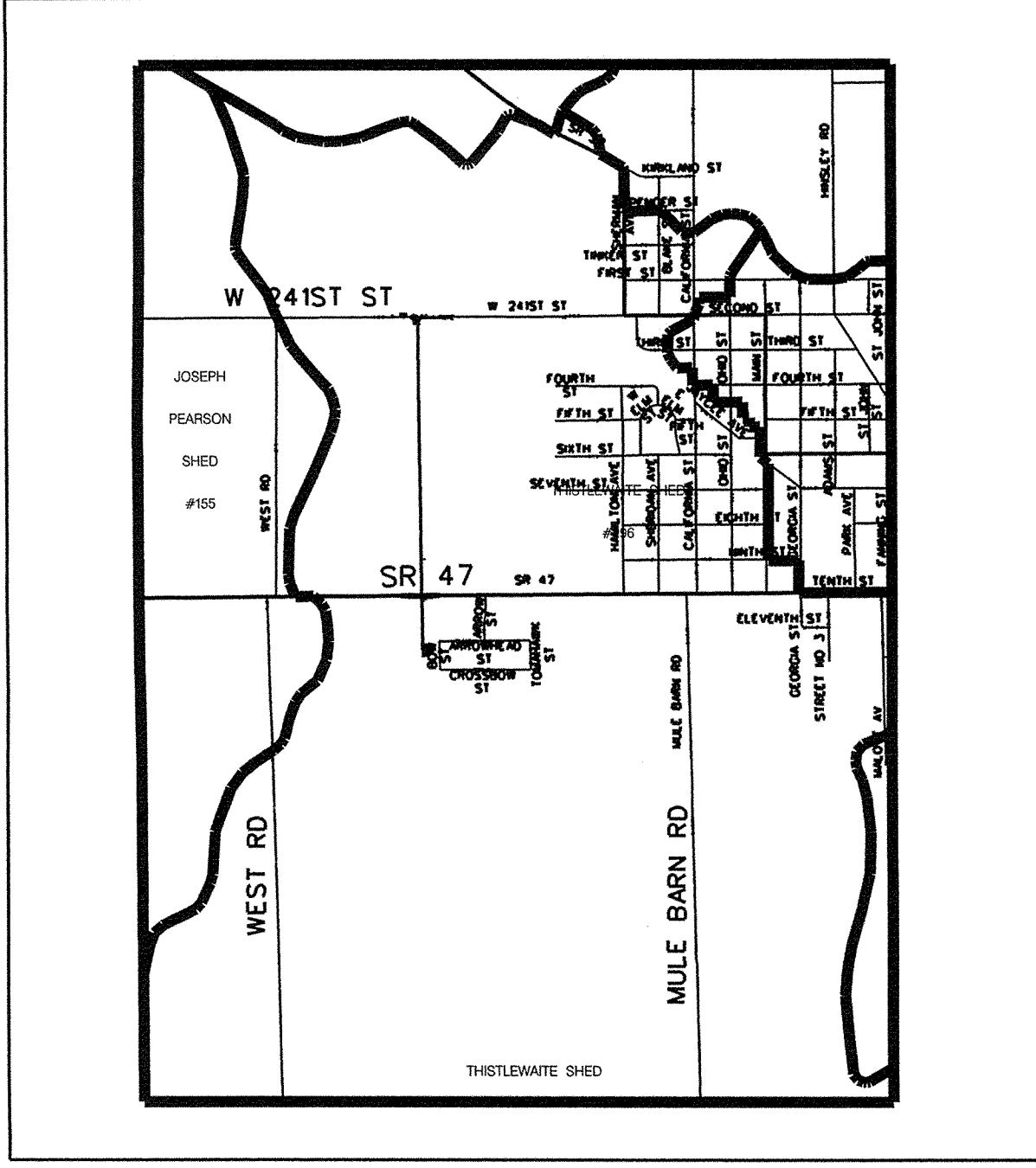
KENTON C. WARD, COUNTY SURVEYOR

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HAMILTON COUNTY DRAINAGE BOARD

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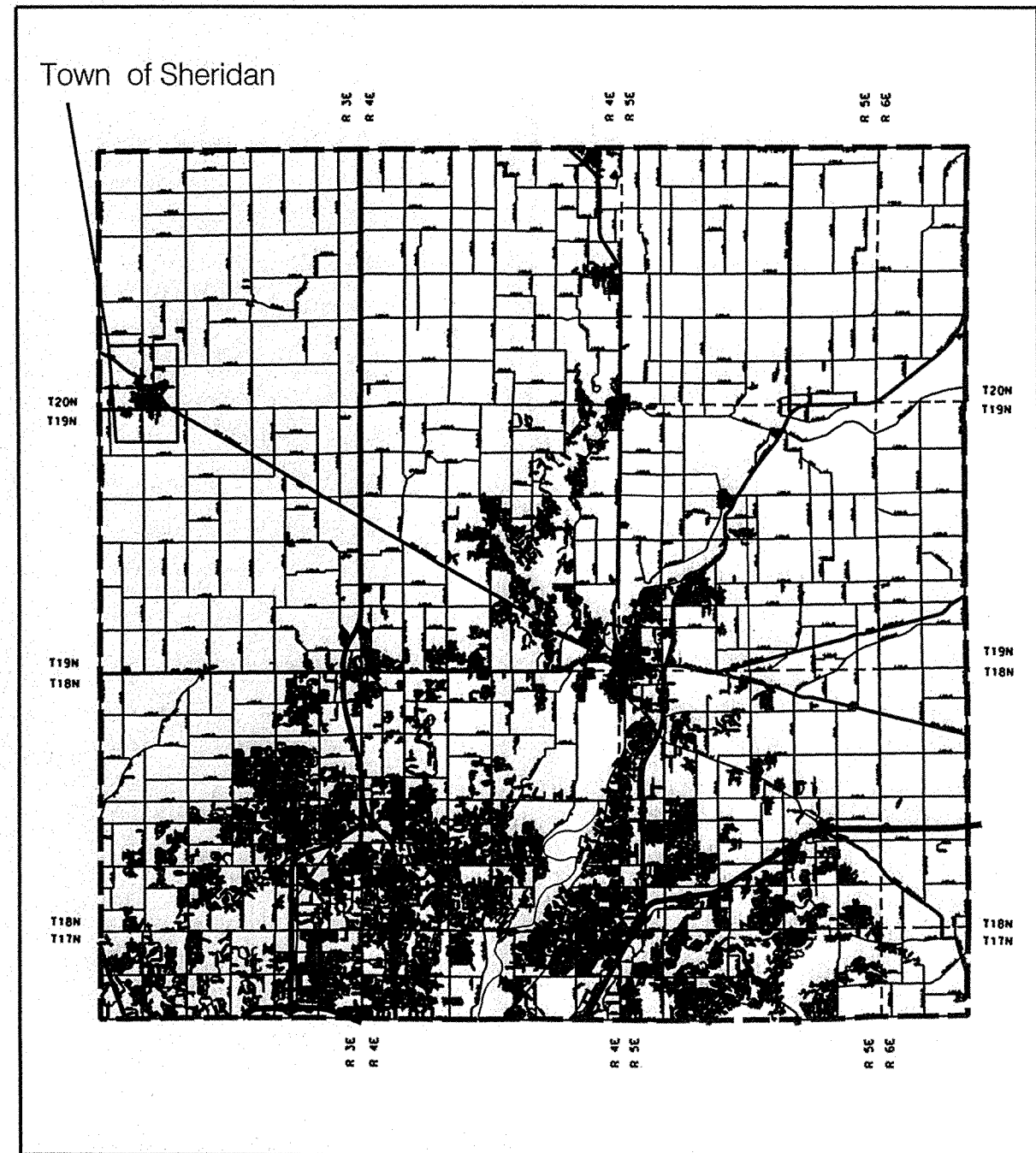
CHRISTINE ALTMAN, PRESIDENT  
 STEVEN A. HOLT, MEMBER  
 STEVEN C. DILLINGER, MEMBER  
 JERRY RULON, ALTERNATE MEMBER



WATERSHED AREA

## West Leg of Thistlewaite Drain As-Builts

INDEX	
SHEET NO.	Description
1-4	Plan and Profile Sheet



HAMILTON COUNTY

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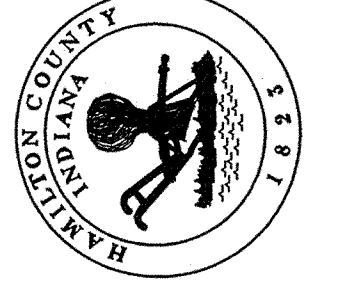
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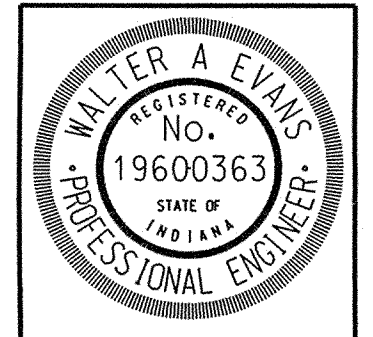
Operating Authorities	
Sheridan Utilities (Sanitary) 506 S. Main St. Sheridan, Indiana 46069 (317) 758-5233	Hamilton Co. Highway Dept. 1700 S. 10th Street Noblesville, Indiana 46060 (317) 773-7770
Cable Direct (Cable) 5937 W. 71st St. Indianapolis, Indiana 46278 (888) 365-6988	Sheridan Street Dept. 506 S. Main St. Sheridan, Indiana 46069 (317) 758-1323
Sheridan Waterworks (Water) 507 S. Ohio St. Sheridan, Indiana 46069 (317) 758-5326	Indiana State Highway Dept. 32 S. Broadway Greenfield, Indiana 46140 (317) 462-7751
Vectren (Gas) 16000 Allisonville Rd. Noblesville, Indiana 46060 (317) 227-1376	CinergyPSI (Electrical) 21225 Riverwood Ave. Noblesville, Indiana 46060 (317) 776-8300
Pipeline	SBC (Communication) (800) 742-8771

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 surveyor@co.hamilton.in.us



Project No:	By:
Watershed No:	Date:
Dgn Name:	Revisions:
Field By:	
Drawn By: RAE	
Checked By:	
Date:	



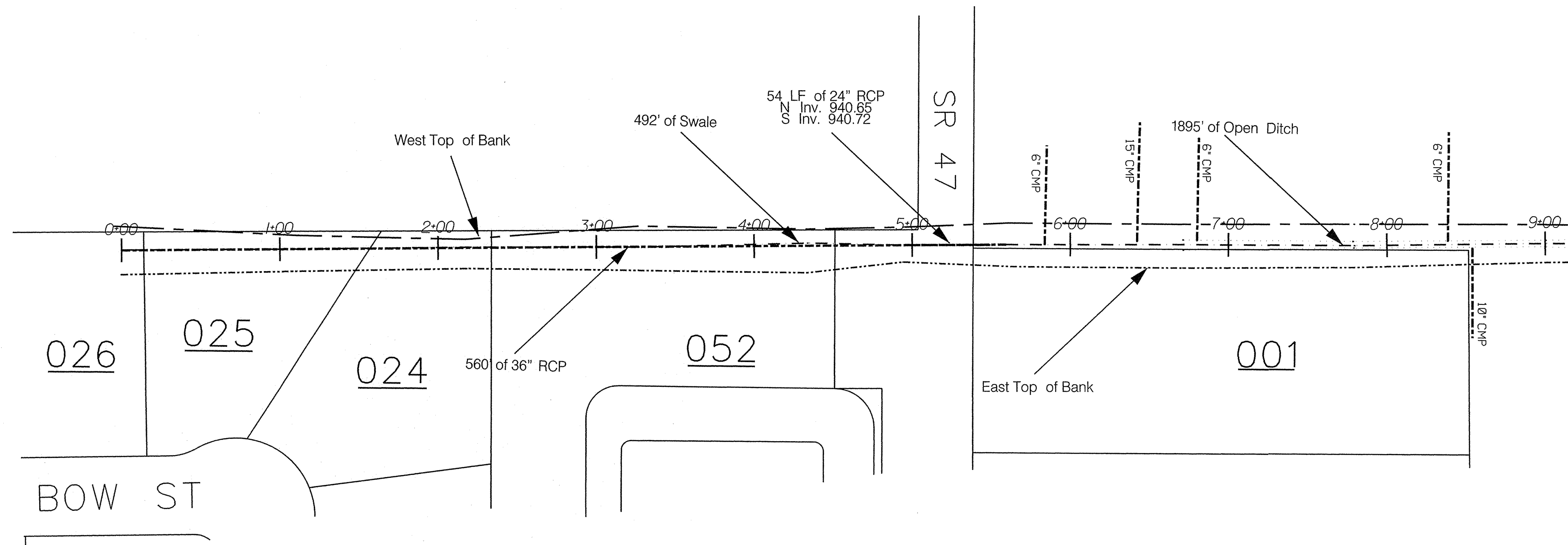
Certified By:  
 Walter A. Evans P.E.


Project Name:  
 Thistlewaite West As-Built

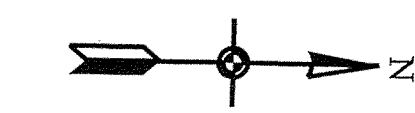
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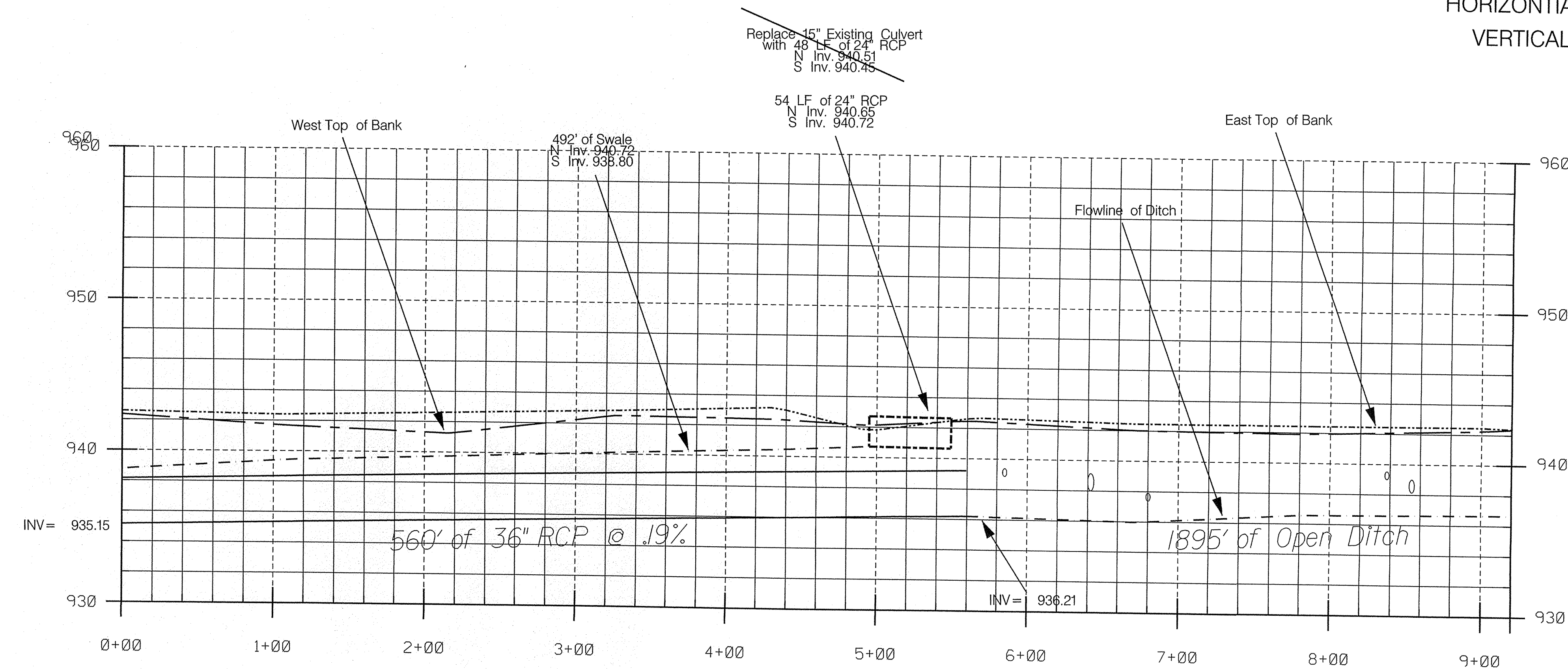
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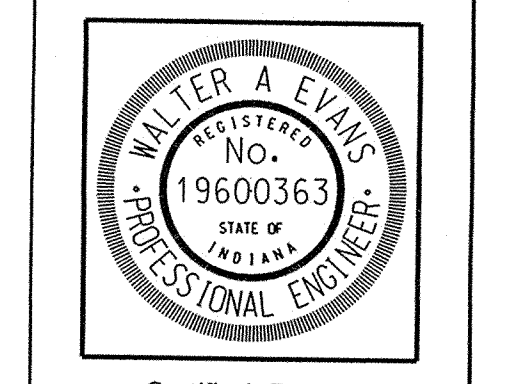
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**PROFILE VIEW**  
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 VERTICAL SCALE 1" = 5'

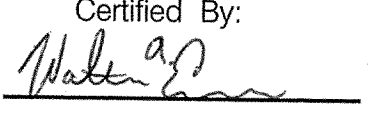


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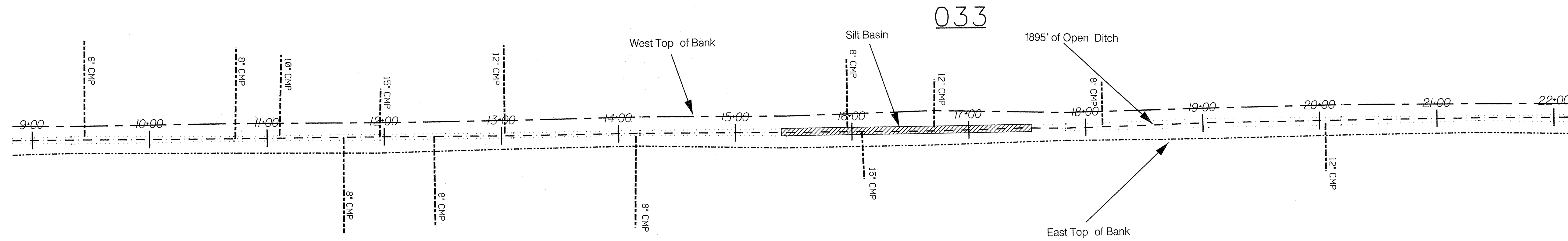
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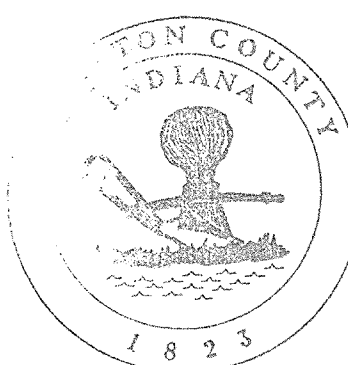


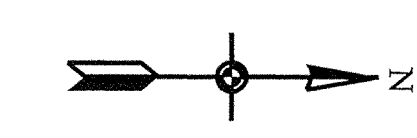
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 Walter A. Evans P.E.

Project Name:  
 Thistlewaite West As-Built  
 Plan and Profile  
 PLOT DATE: 12/2/2005

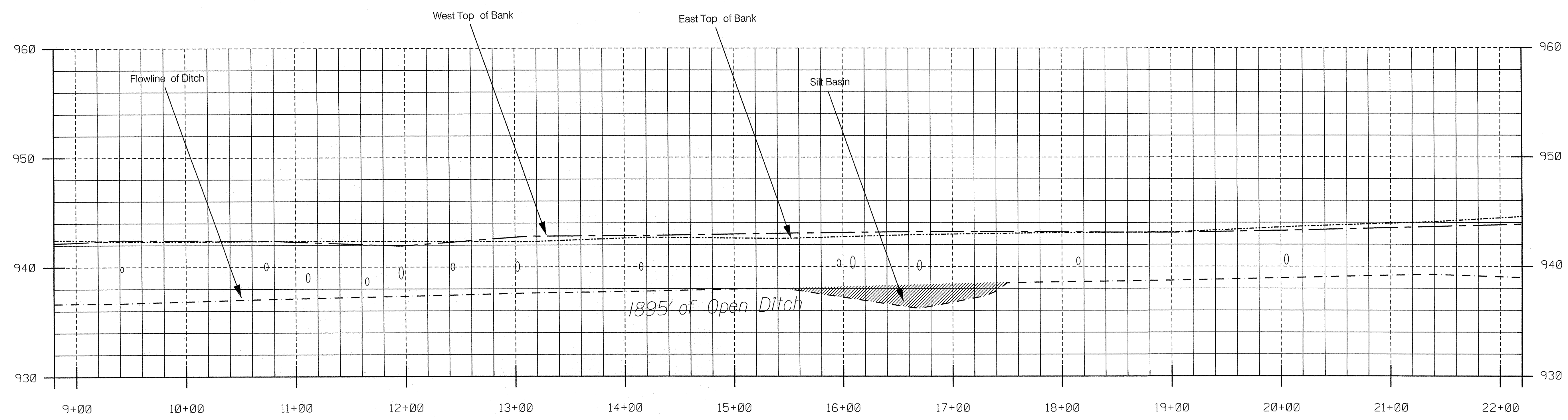
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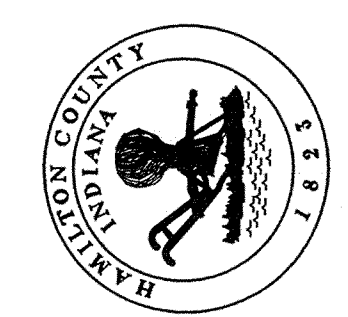

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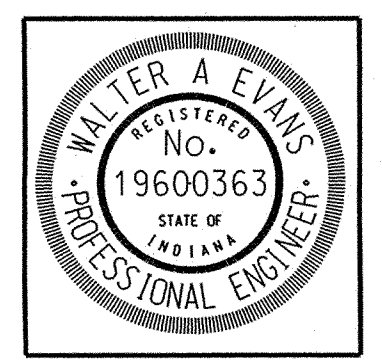
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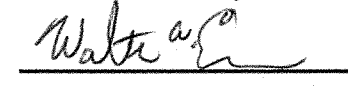


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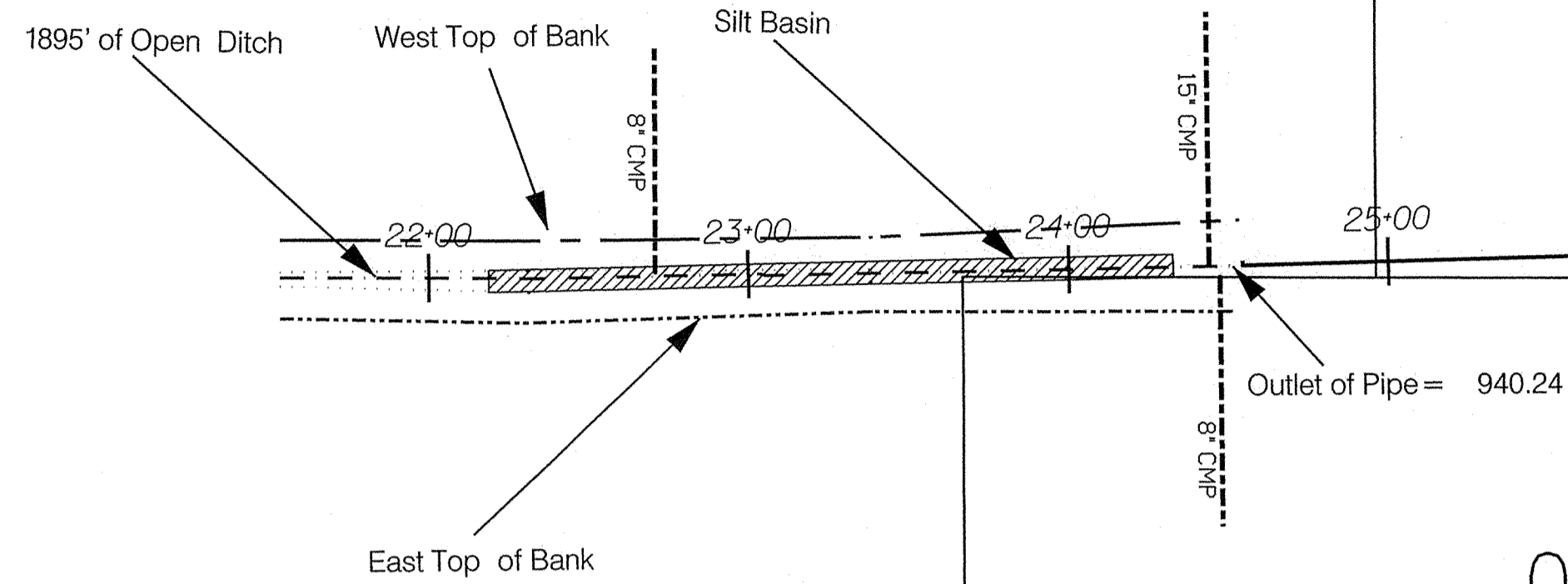
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By:	Dgn Name:
Date:	Field By: RAE
Revisions:	Drawn By: RAE
	Checked By:
	Date:



Certified By:  
  
 Walter A. Evans P.E.

Project Name:  
**Thistlewaite West As-Built**  
 Plan and Profile  
 PLOT DATE: 12/9/2005

SHEET NO.  
**2 of 4**



PLAN VIEW

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PROFILE VIEW

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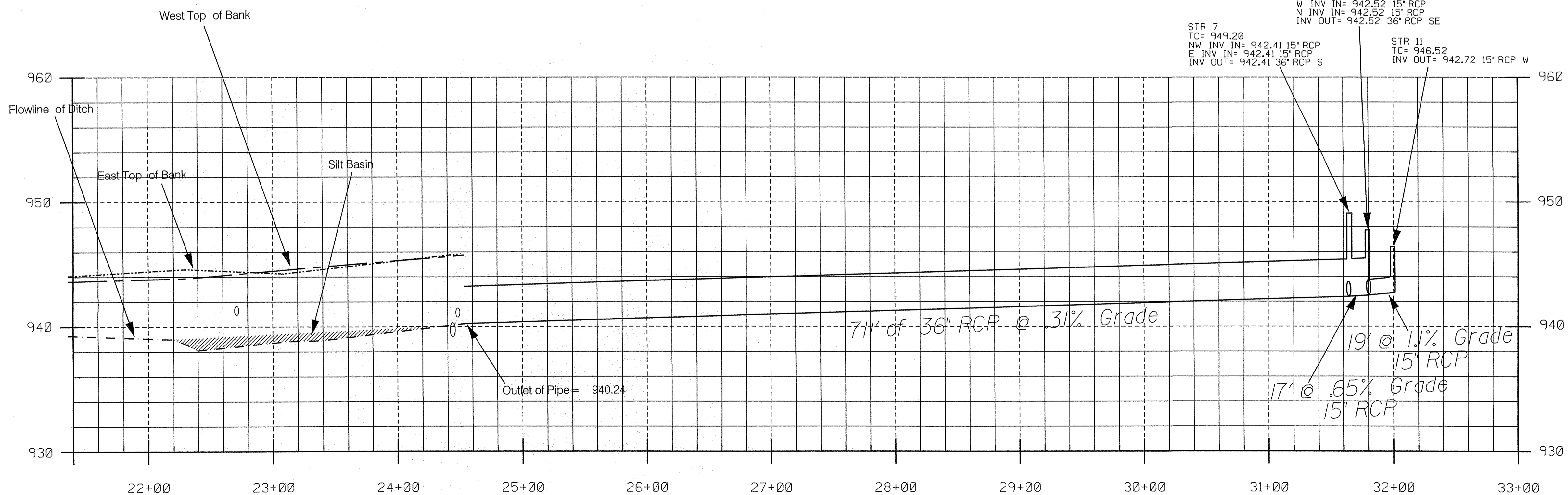
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*Handwritten notes:*

36" RCP  
 711' + 560 / 12.71 = 17' 12.88"

15" RCP  
 19' 10.71" + 16' 17.17" + 17' 17.9" = 395'



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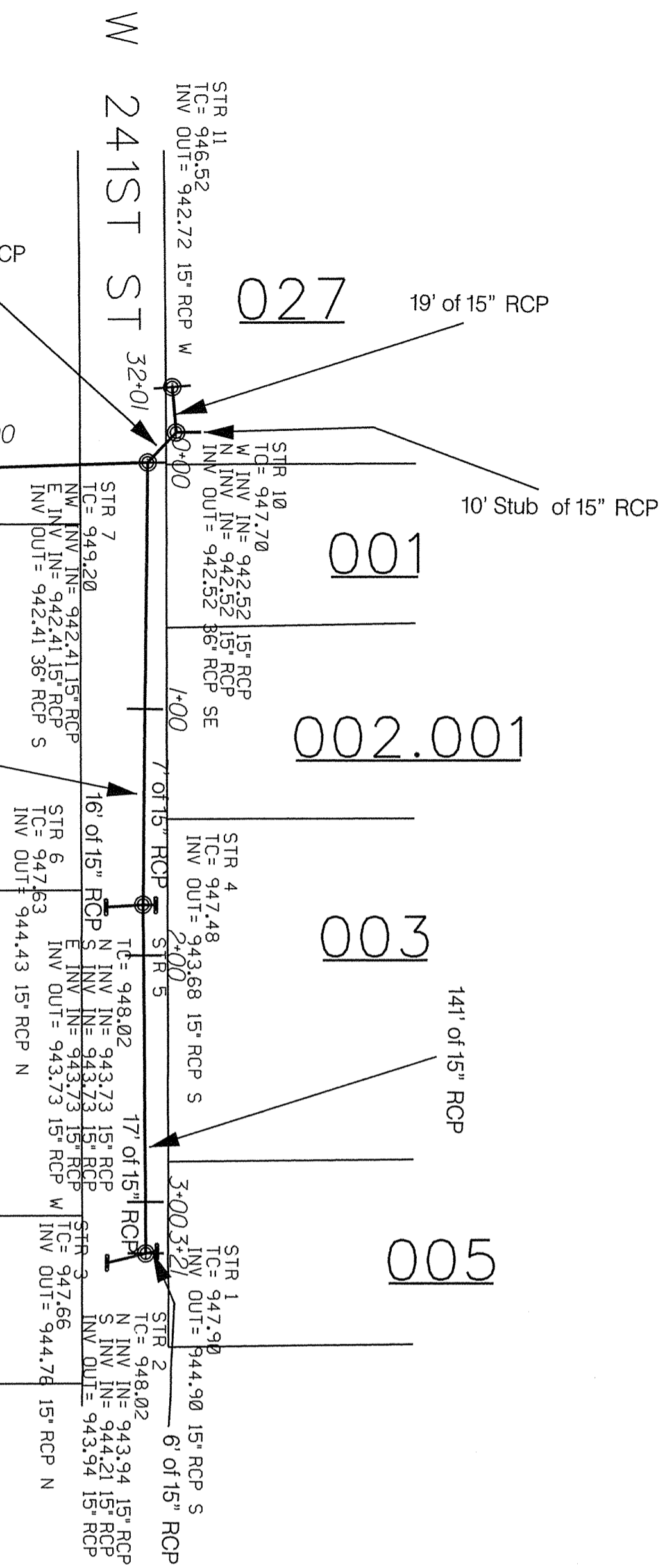
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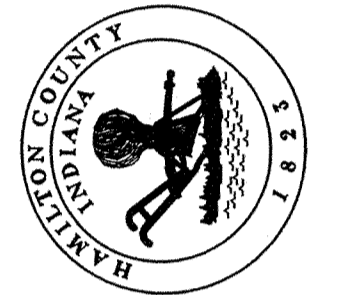
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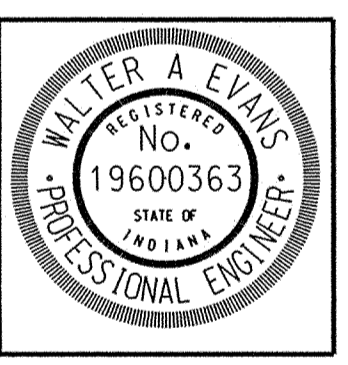
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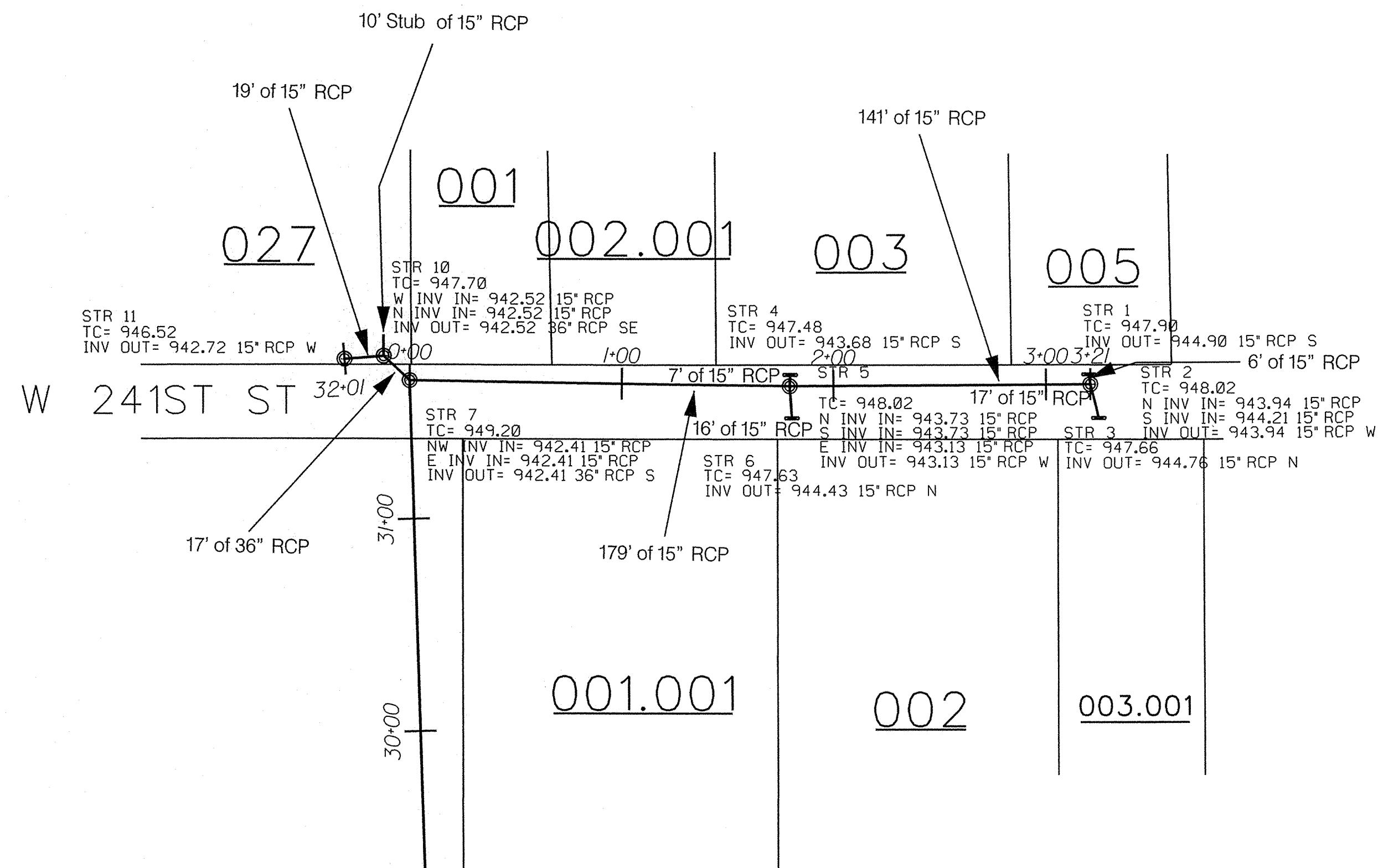
Certified By:  
*Walter A. Evans*  
 Walter A. Evans P.E.

Project Name:  
**Thistlewaite West As-Built**

Plan and Profile

PLOT DATE:  
 12/29/2005

SHEET NO.  
**3 of 4**



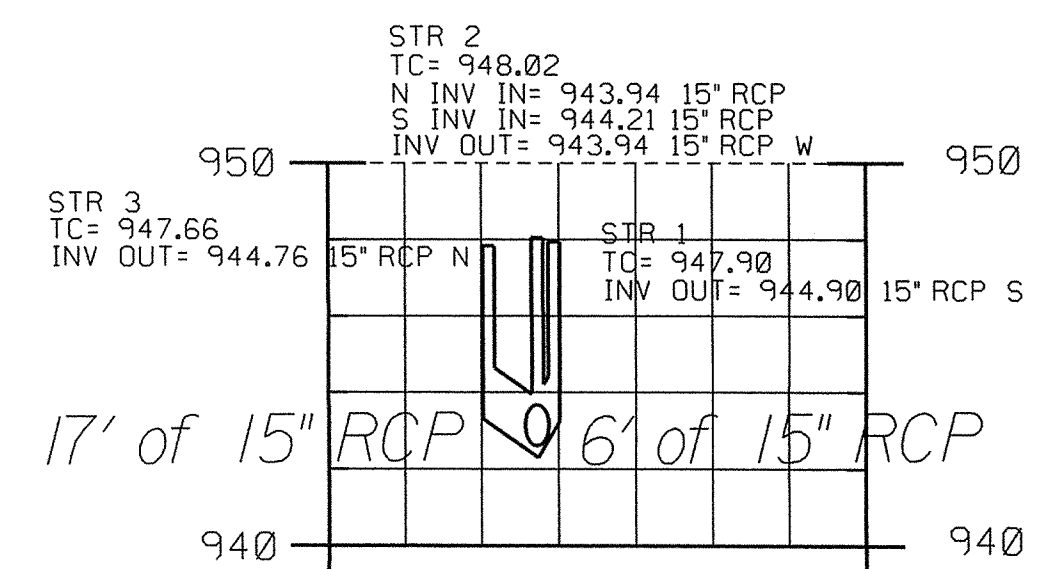
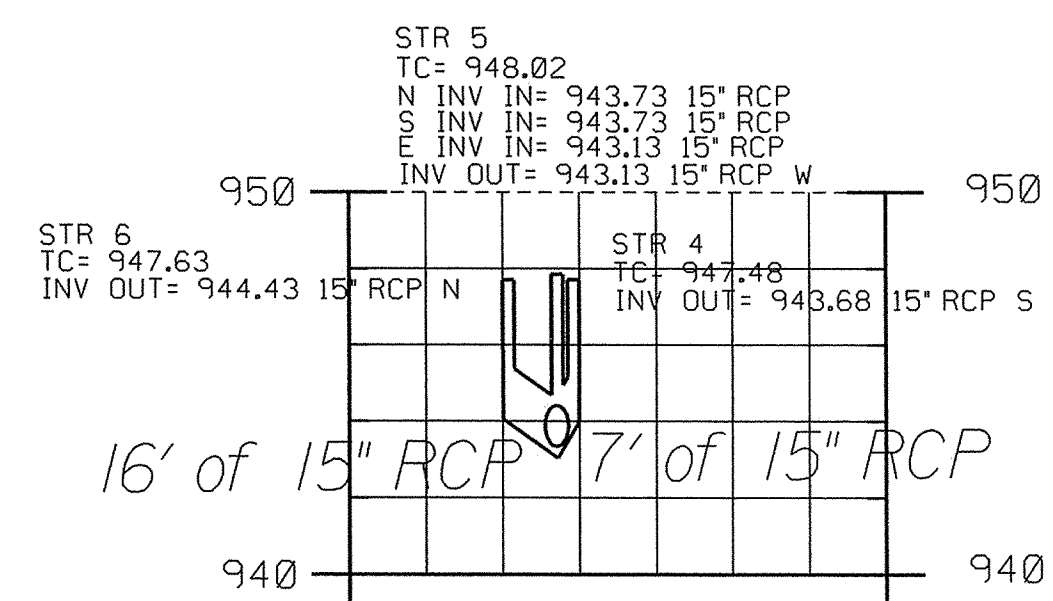
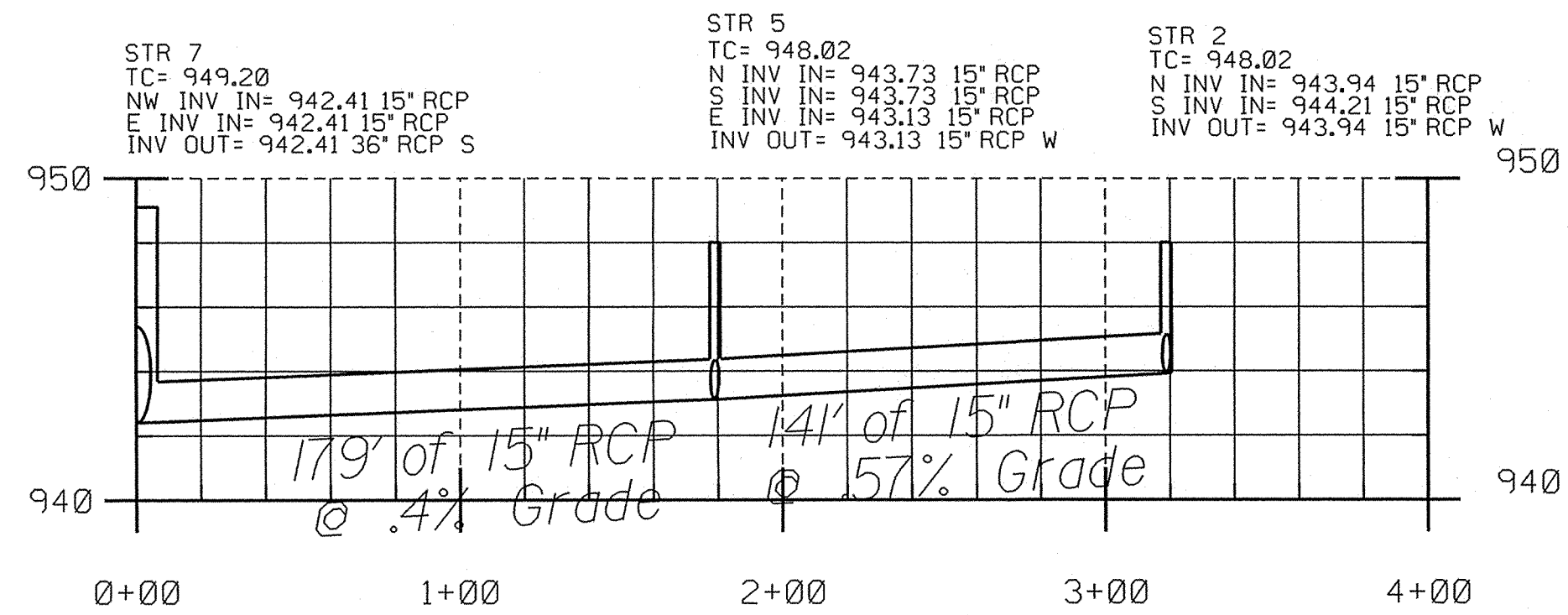
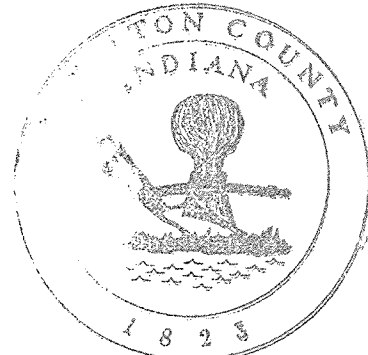
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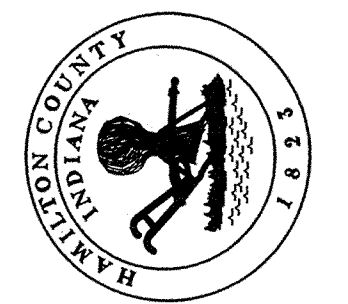



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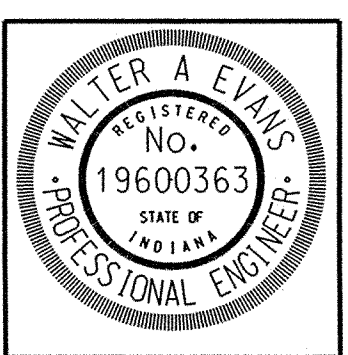
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Certified By:  
*Walter A. Evans*  
 Walter A. Evans P.E.

Project Name:  
 Thistlewaite West As-Built

Plan and Profile

PLOT DATE: 12/2/2005

SHEET NO.  
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