

King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing1

Crossing Type: Foot

Structure Condition: Good

Structure Type: CMP

Photo 1 Direction:

Downstream Comments:

(Old Farm Crossing) Photo1. Head wall on right side is failing. Minimal cover. Erosion at headwall.

Upstream Comments:

Photo4. Erosion on both sides. Woody debris.

Observation Location:

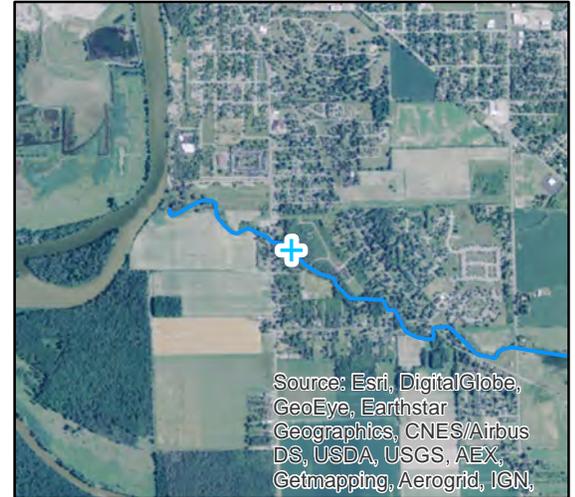


Photo 1



Photo 2



Photo 3



Photo 4



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King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing2

Crossing Type: City
Structure Type: CMPA
Downstream Comments:

Structure Condition: Good
Photo 1 Direction:

(Banner Road Crossing) Erosion at headwall, but vegetation growing so might be okay. Photo 1. Debris and side drain on left side.

Upstream Comments:

Erosion at headwall. Worse on left side. Photo2. Side drain enters on right. Culvert under banner rd.

Observation Location:

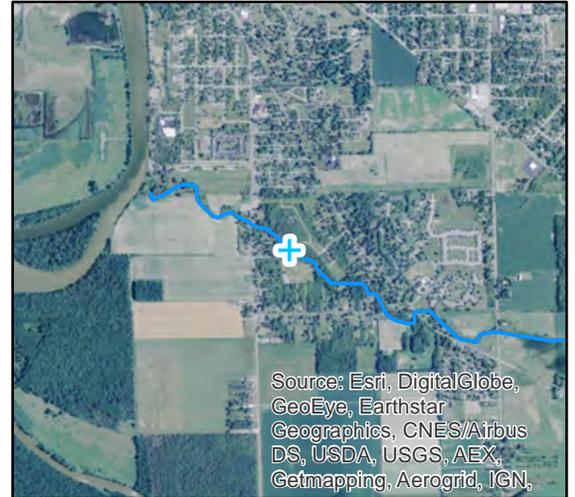


Photo 1



Photo 3

Photo 2



Photo 4

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King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing3

Crossing Type: County **Structure Condition:** Good
Structure Type: CMPA **Photo 1 Direction:**

Downstream Comments:
(Casey Drive Crossing) Under Casey dr. Surface outlet pipes on both sides of drain. Erosion on left side. Deep decline. Could use guard rail.
Photo1

Upstream Comments:
Under Casey dr. Side drain from right. Entrance to culvert is at an angle.
Photo2

Observation Location:

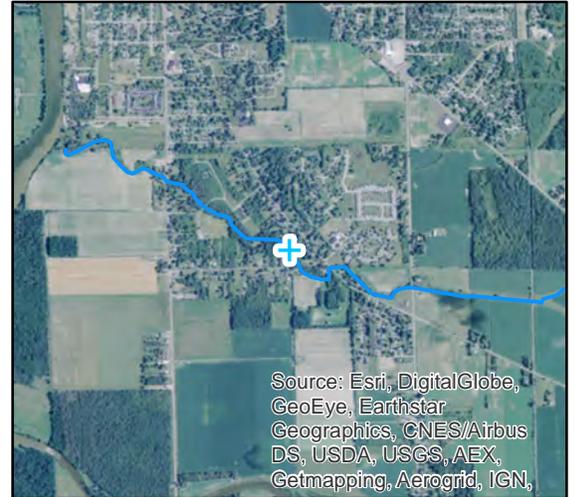


Photo 1



Photo 3

Photo 2



Photo 4

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King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing4

Crossing Type: Foot
Structure Type: CMPA

Structure Condition: Good
Photo 1 Direction:

Downstream Comments:

(Farm Crossing) Photo1. Headwall in good condition. Bank erosion on right side especially. Minor erosion behind headwall on right side. Cover is minimal and is in poor shape.

Upstream Comments:

Photo2. Significant erosion behind headwall. However, headwall still structure seems fine. Woody debris blockage. Significant erosion at field tile outlet on right. Small bend in top of culvert.

Observation Location:

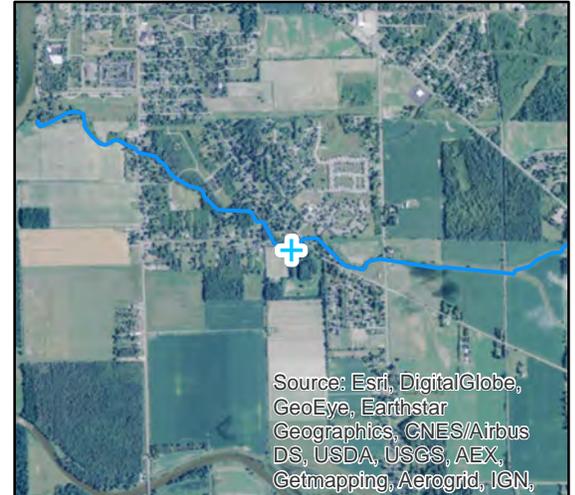


Photo 1



Photo 2



Photo 3



Photo 4



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King Street Tile Drain Inspections

Inspection Report for Observation:
Culvert Crossing 5

Crossing Type: County **Structure Condition:** Good
Structure Type: CMPA **Photo 1 Direction:**

Downstream Comments:
(Washington Road Crossing) Surface outlet pipes on both sides. Exposed resteel. Minimal vegetation at top of headwall. Trash on right side. Photo 1. Drain exits at an angle.

Upstream Comments:
Surface outlet pipes on both sides. Sop on left cuts into culvert. Concrete headwall support on left around sop. Debris in drain. Trash all over. Photo 2. Drain angles to right.

Observation Location:

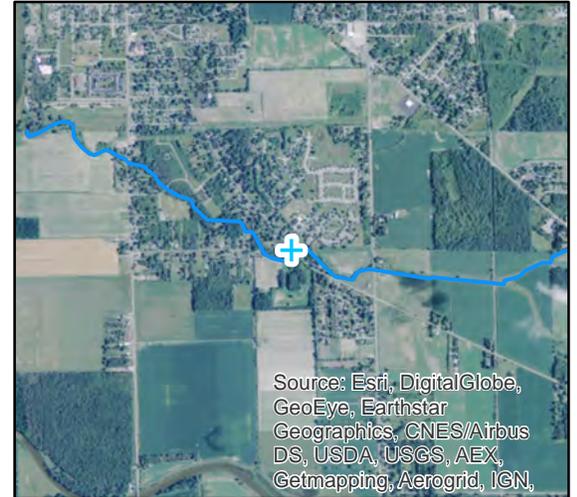


Photo 1



Photo 3

Photo 2



Photo 4

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King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing6

Crossing Type: County

Structure Condition: Good

Structure Type: CMPA

Photo 1 Direction:

Downstream Comments:

(Sheridan Road Crossing) Downstream crossing excessive vegetation. Riprap head wall in good condition. Roadside ditches enter on both sides.

Upstream Comments:

Broken concrete around headwall because of erosion. 1 upside ditch entering on right side of culvert and 1 for surface outlet pipe on left side. Photo 1 facing downstream. Photo 2 facing upstream.

Observation Location:

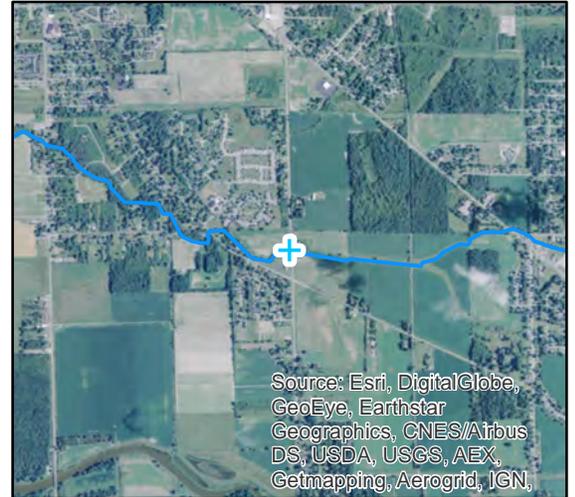


Photo 1



Photo 2



Photo 3

Photo 4

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King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing7

Crossing Type: Farm
Structure Type: CMPA
Downstream Comments:

Structure Condition: Good
Photo 1 Direction:

(Farm Crossing) Vegetation and sediment deposits on downstream side. Consistent with this stretch of drain. Sediment cave in at top of right bank. Bag rip rap headwall. Photo1

Upstream Comments:

Erosion at banks around headwall. Just downstream of field tile outlet. Shiny substance on right side. Photo2.

Observation Location:

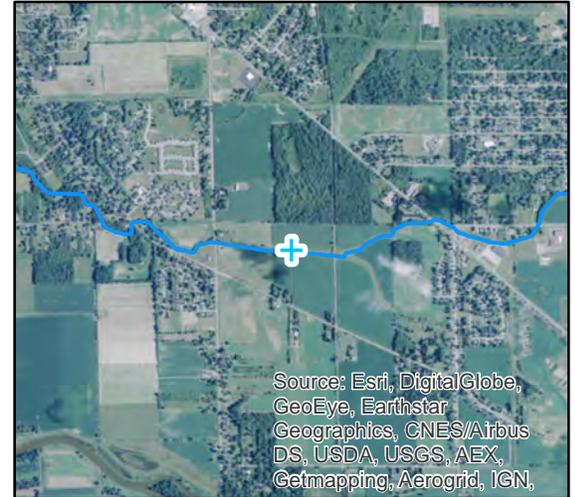


Photo 1



Photo 2



Photo 3

Photo 4

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King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing8

Crossing Type: Farm
Structure Type: CMPA

Structure Condition: Good
Photo 1 Direction:

Downstream Comments:
(Farm Crossing) Vegetation. Farm crossing. Debris inside culvert. Photo1

Upstream Comments:
Headwall on right side is starting to fail due to erosion. Just downstream of bend in drain and side drain. Photo2

Observation Location:

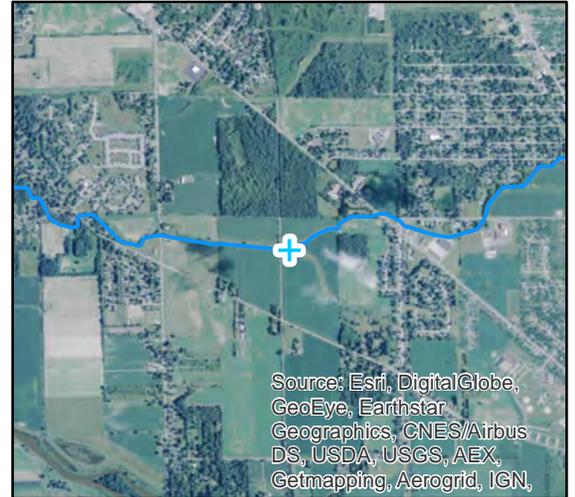


Photo 1



Photo 2



Photo 3

Photo 4

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King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing9

Crossing Type: City

Structure Condition: Fair

Structure Type: CMPA

Photo 1 Direction: Facing Upstream

Downstream Comments:

(King Street Crossing) Crossing under King St. Erosion behind headwall and at side drain outlet on right side. See photo2. Water level is about 24" inside culvert, which much greater than upstream and downstream sides. Two cmp sops enter culvert under King St.

Upstream Comments:

Erosion at headwall. Two 6" hdpe sops enter. Excessive vegetation and non vegetative debris. Lots of trash on banks and in drain channel. Photo3.

Observation Location:

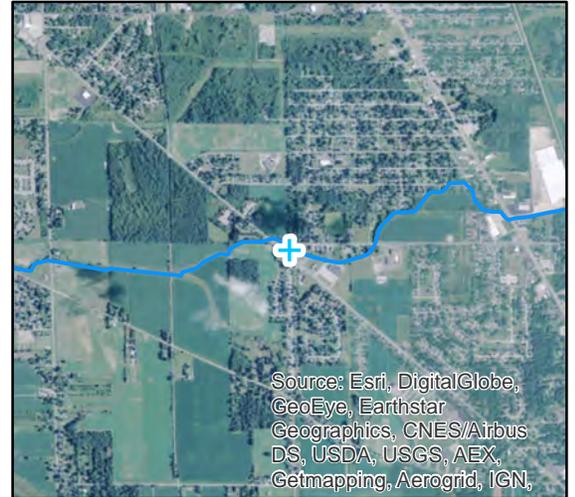


Photo 1



Photo 2



Photo 3



Photo 4



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King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing10

Crossing Type: City **Structure Condition:** Good
Structure Type: CMPA **Photo 1 Direction:** Facing Upstream
Downstream Comments:
 (King Street Crossing) Erosion at head wall. Flow backs up and floods neighboring lawn area. No guardrail. Sop cuts on right.

Upstream Comments:
 Exposed resteel at head wall. Erosion on head wall. Deep, loose sediment. Local resident says this side backs up considerably during high flows. Photo2.

Observation Location:

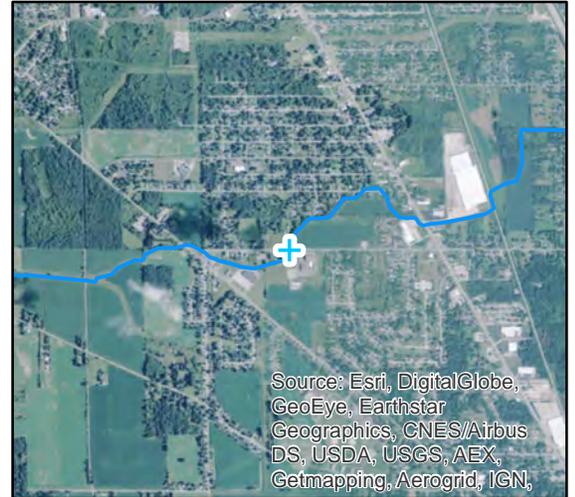


Photo 1



Photo 2



Photo 3

Photo 4

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King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing11

Crossing Type: City

Structure Condition: Poor

Structure Type: CMP

Photo 1 Direction: Facing Upstream

Downstream Comments:

(Kansas Street Crossing) Riprap with curbs thrown in making riffle. Water elevation under culvert is significantly higher than drain water elevation. Huge manhole on left side of drain before culvert about 10 ft tall. Bag riprap headwall is in poor condition. Holes in headwall. Doesn't cover whole culvert CMP. Crossing under Kansas St.

Upstream Comments:

Bag riprap headwall on left side- right side only by bottom of culvert. Poor condition. Large tree growing on left side on top of culvert. Broken concrete and bag riprap laying on either side of drain.

Observation Location:

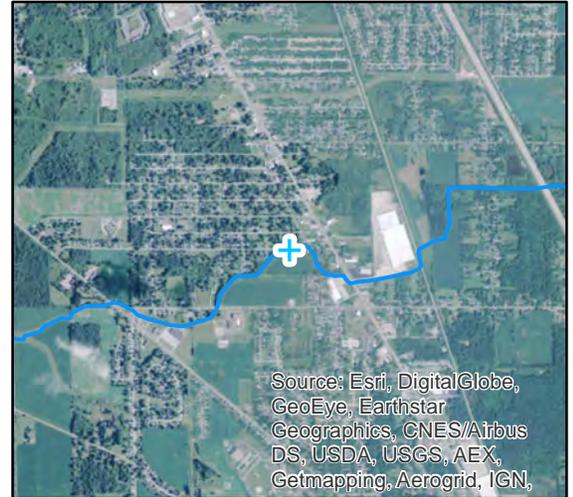


Photo 1



Photo 3

Photo 2



Photo 4

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King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing12

Crossing Type: City

Structure Condition: Fair

Structure Type: CMPA

Photo 1 Direction: Facing Upstream

Downstream Comments:

(Kansas Street Crossing) Log jam with non vegetative debris is obstruction. 24" sop from left. Enters at an angle. Under intersection of Kansas and Broadway. Sediment bar on right side.

Upstream Comments:

Head wall in fair condition. Erosion on right side. Sop on rights is blocked off. Woods debris and excessive vegetation upstream. Sanitary manhole on left side.

Observation Location:

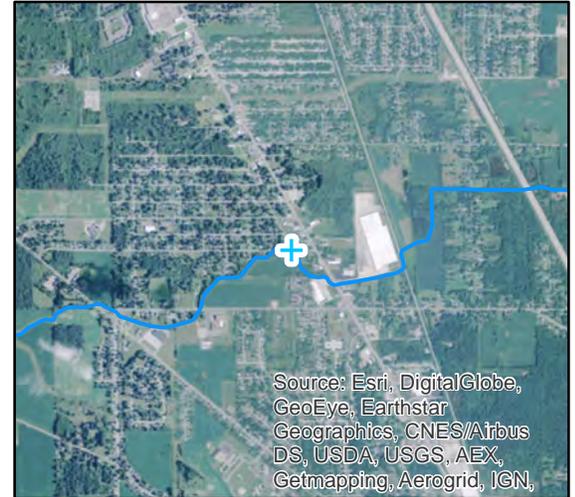


Photo 1



Photo 3

Photo 2



Photo 4

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King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing13

Crossing Type: MDOT

Structure Condition: Good

Structure Type: CMP

Photo 1 Direction: Facing Upstream

Downstream Comments:

(Dixie Highway Crossing) Photo 1 Downstream end of 72"x96" cmp with 45 degree bend approx 50' upstream. Picture facing upstream.

Upstream Comments:

Photo 2 upstream end of 72"x96" cmp appears to be more than 1 bend in pipe downstream. Picture facing downstream.

Observation Location:

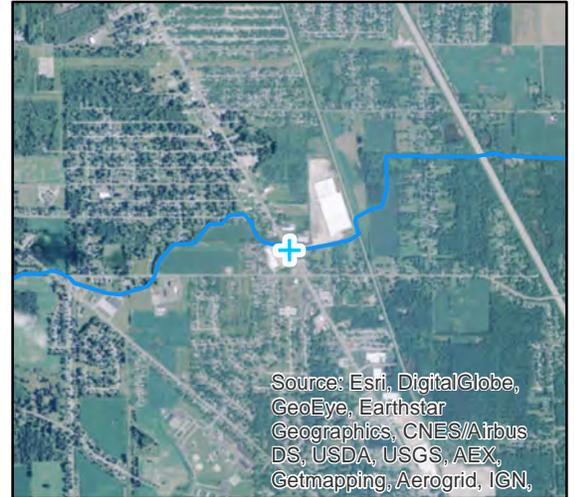


Photo 1



Photo 3

Photo 2



Photo 4

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				SCALE:	
NOTE				SHEET #:	
				JOB #:	20160331

King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing14

Crossing Type: Other **Structure Condition:** Fair
Structure Type: Concrete Box **Photo 1 Direction:** Facing Upstream
Downstream Comments:

(Railroad Crossing) Downstream comments, downstream head wall has failed and is blocking the drain. Crossing going under railroad tracks. The drain is not flowing through crossing and instead is flowing through bypass to the south.

Upstream Comments:

Upstream comments for railroad concrete box culvert crossing. Wooden head wall failed and stone falling into drain.

Observation Location:

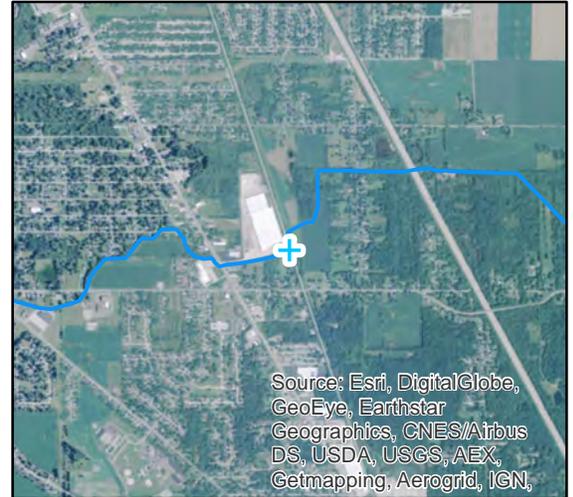


Photo 1



Photo 3

Photo 2



Photo 4

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				SCALE:	
NOTE				SHEET #:	
				JOB #:	20160331

King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing14A

Crossing Type: Other **Structure Condition:** Fair

Structure Type: Steel Casing **Photo 1 Direction:** East

Downstream Comments:

(Railroad Crossing) Photo1 24" steel pipe with 6' section of concrete pipe at end under railroad tracks. Picture facing East.

Upstream Comments:

Photo 2 upstream end of 24" steel pipe acting as bypass of county drain. Picture facing West.

Observation Location:

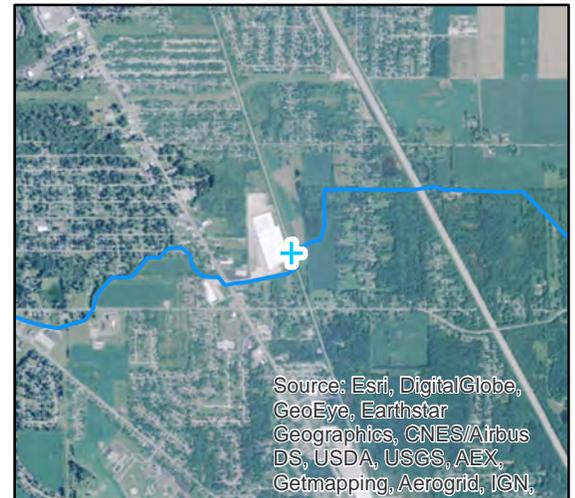


Photo 1



Photo 3

Photo 2



Photo 4

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King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing15

Crossing Type: Farm **Structure Condition:** Failed
Structure Type: Other **Photo 1 Direction:** Facing Upstream
Downstream Comments:
 (Farm Crossing) Photo1 downstream end of 72" rcp farm crossing with holes in the top. Picture facing upstream.

Upstream Comments:
 Photo2 upstream end of 72"rcp farm crossing. Picture facing downstream.

Observation Location:

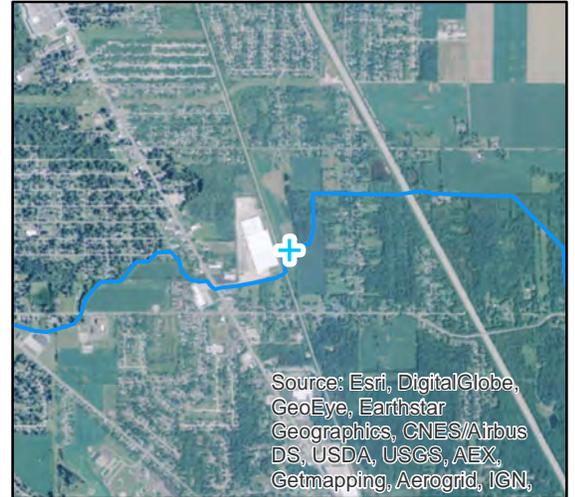


Photo 1



Photo 2



Photo 3

Photo 4

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King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing16

Crossing Type: Farm

Structure Condition: Fair

Structure Type:

Photo 1 Direction:

Downstream Comments:

(Farm Crossing) Photo 1 downstream end of 72" rcp farm crossing unimproved picture facing upstream.

Upstream Comments:

Photo 2Upstream end of 72" rcp farm crossing unimproved with rip rap in pipe. Picture facing downstream.

Observation Location:

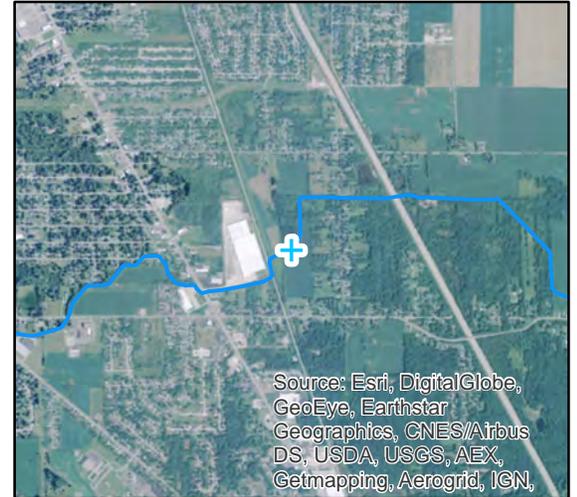


Photo 1



Photo 2



Photo 3

Photo 4

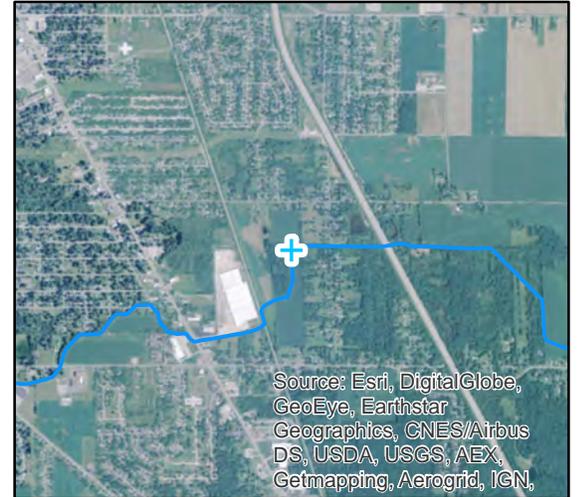
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King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing17

Crossing Type: Farm **Structure Condition:** Good
Structure Type: RCP **Photo 1 Direction:** Facing Upstream
Downstream Comments:
 (Farm Crossing) 66" RCP farm crossing, no headwall.

Observation Location:



Upstream Comments:

Photo 1



Photo 2



Photo 3

Photo 4

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King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing18

Crossing Type: County

Structure Condition: Fair

Structure Type: RCP

Photo 1 Direction: Facing Upstream

Downstream Comments:

(Mack Road Crossing) Photo 1 downstream end of 66" RCP. Picture facing upstream. No headwall.

Upstream Comments:

Photo 2 upstream end of 66" RCP at Mack Road crossing. With riprap bag headwall. Picture facing downstream.

Observation Location:

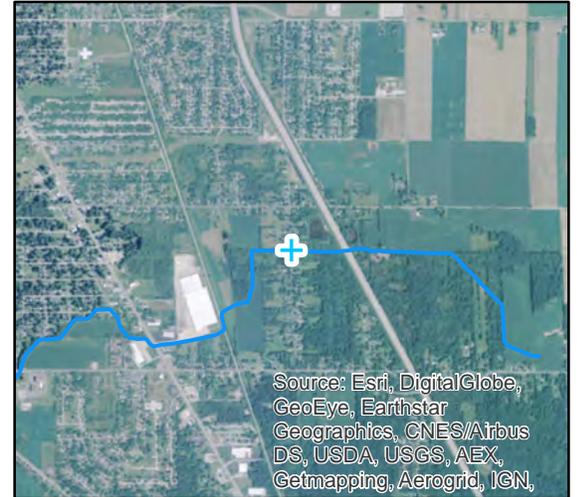


Photo 1



Photo 3

Photo 2



Photo 4

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King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing19

Crossing Type: Farm

Structure Condition: Good

Structure Type: RCP

Photo 1 Direction: Facing Upstream

Downstream Comments:

(Farm Crossing) Culvert structure seems in decent condition. Bag riprap head wall on right side is decent, but on left side is covered in Woody debris blocking most of culvert hole. Major erosion on both sides of bank. Woody debris all around.

Upstream Comments:

Concrete culvert in good shape. Bag riprap headwall is in good shape. Woody debris and erosion on both sides. Water depth only 7 inches deep. Concrete blocks upstream.

Observation Location:

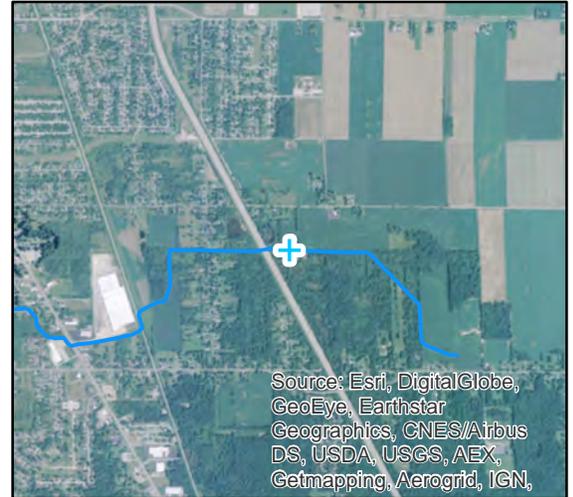


Photo 1



Photo 2



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King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing20

Crossing Type: Farm **Structure Condition:** Fair
Structure Type: RCP **Photo 1 Direction:** Facing Upstream
Downstream Comments:
 (Farm Crossing) Erosion behind headwall. The tree on right side.
 Excessive veg and bank erosion.

Upstream Comments:
 Erosion behind headwall. Debris is center of drain. Erosion on left bank.
 Heavily wooded. More a footpath.

Observation Location:

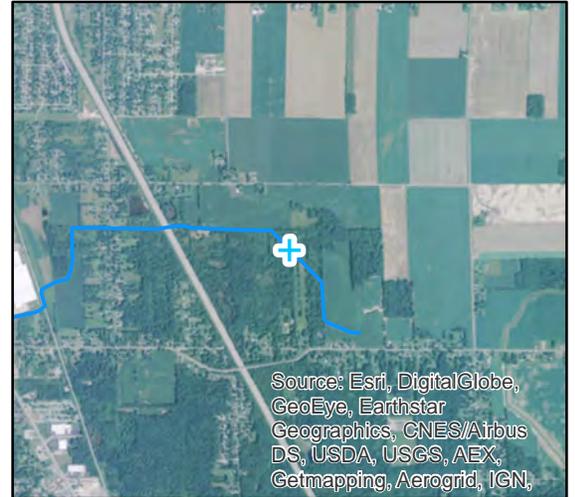


Photo 1



Photo 3

Photo 2



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King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing21

Crossing Type: Farm

Structure Condition: Good

Structure Type: RCP

Photo 1 Direction: Facing Upstream

Downstream Comments:

(Farm Crossing) Bag riprap headwall. Debris on right side facing upstream- some metal/steel item. Erosion and excessive overhanging vegetation on both sides of crossing. Excessive vegetation growing on bag riprap headwall.

Upstream Comments:

Massive amount of woody debris/overhanging vegetation to get to upstream end. Excessive woody debris on right side facing upstream. Bag riprap headwall on right side facing downstream is half gone. Excessive vegetation on headwall. RCP structure is in good shape, but has excessive vegetation growing on top. Picture 3 is facing downstream showing woody debris.

Observation Location:

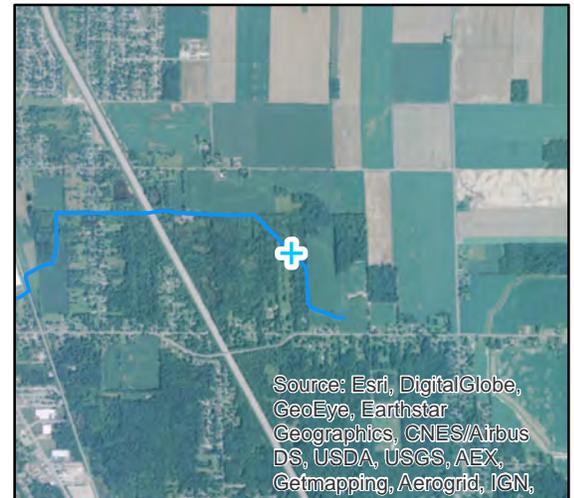


Photo 1



Photo 2



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King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing22

Crossing Type: Farm **Structure Condition:** Failed
Structure Type: RCP **Photo 1 Direction:** Facing Upstream
Downstream Comments:
 (Farm Crossing) Photo 1 downstream end of 30" rcp farm crossing (failed) . Full of water. Picture facing upstream

Upstream Comments:
 Photo 2 upstream end of failed 24" rcp at farm crossing full of stagnant non moving water. Picture facing downstream.

Observation Location:

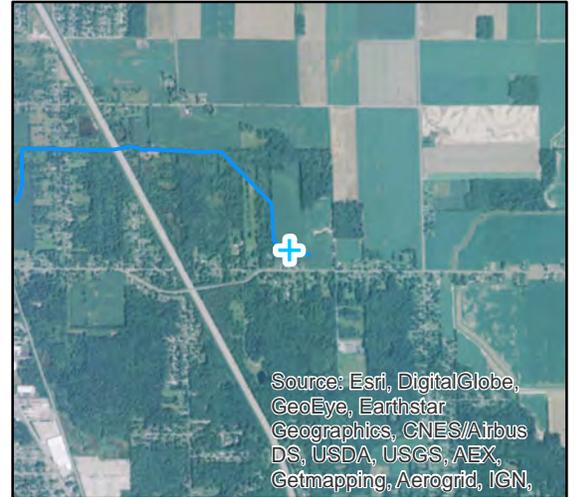


Photo 1



Photo 2



Photo 3

Photo 4

CLIENT	Saginaw County Public Works Commissioner	 HUBBELL, ROTH & CLARK, INC CONSULTING ENGINEERS SINCE 1915	555 Hulet Drive P.O. Box 824 Bloomfield Hills, MI 48303-0824 (248) 454-6300 http://www.hrc-engr.com	DATE:	08/16/2016
				SCALE:	
NOTE				SHEET #:	
				JOB #:	20160331

King Street Tile Drain Inspections

Inspection Report for Observation:
CulvertCrossing23

Crossing Type: County

Structure Condition: Good

Structure Type: RCP

Photo 1 Direction: Facing Upstream

Downstream Comments:

(King Street Crossing) Photo 1 downstream end of 36" Rcp at King street crossing which connects to beehive catch basin south side of King street. Picture facing upstream.

Upstream Comments:

Photo 2 Beehive catch basin south side of King street. Structure appears to be in good condition .Picture facing downstream.

Observation Location:

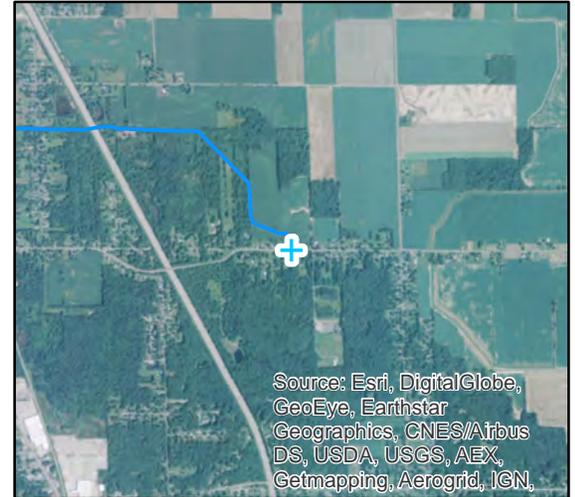


Photo 1



Photo 3

Photo 2



Photo 4

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