

July 13, 2020

Julie Miller
Village Administrator
1400 Mt. Zion Parkway
Mt. Zion, IL 62549

Re: TIF Drainage Assessment
Mount Zion, IL

Dear Julie Miller:

The Village of Mt. Zion has requested Chastain & Associates LLC to provide a flooding/drainage opinion for specific vacant land that is being considered by the Village to be included in the proposed TIF District.

This flooding/drainage opinion is based on the following items:

1. Site visit to review drainage patterns.
2. Review of Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM).
3. Historical knowledge of Village drainage issues
4. Storm sewer map

A total of 19 undeveloped parcels will be included within the TIF boundary. The parcels were grouped into twelve (12) different areas and are shown on Exhibit 1.

All of the areas being studied ultimately drain to Big Creek or Finley Creek by way of roadside ditches, Village storm sewers, retention ponds, detention ponds, or drainage swales. Both Big Creek and Finley Creek flood plain within the Village limits is shown on the FEMA Flood Insurance Rate Maps. Detailed study areas are shown in Exhibits 1 through 7. The flood plain is mapped as Zones A-E and is shaded in blue. ***Six (6) parcels that are included in the study are located within the FEMA flood plain.***

Drainage Area 1: This area consists of heavy woods, with Big Creek running through it. The west portion of the lot has very steep slopes draining to the east to Big Creek. The east side also drains to Big Creek. Residential areas are located to the west and east. There are also wooded areas that lie to the northeast and south of the property. The majority of this parcel is marshy river bottom land that is wet the majority of the year and floods relatively frequently. This area is located in a FEMA Zone AE Flood Area and conveys flooding in the watershed.

Drainage Area 2: This area consists of a vacant lot consisting of thick grass and woods. Drainage flows over the surface downhill from the west side to the east, towards Big Creek. Residential areas lie to the north and south, with the south being multi-family residential. Vacant grasslands lie to the east, with some commercial properties to the west. The majority of this lot has gas pipeline easements which will severely limit development on this parcel. This area ultimately contributes to flooding in the watershed.

Drainage Area 3: This area consists of a vacant lot consisting of grass. It was a formerly developed lot that contains a drainage ditch. Drainage from this parcel flows through the ditch which outlets into a large storm sewer that outlets to Finley Creek, west of Rt. 121. Residential areas lie to the north, south, and east. Illinois Route 121 lies to the west. This area ultimately contributes to flooding in the watershed.

Drainage Area 4: This area consists of crop land and a newly constructed road acting as the beginning of a new residential area on the north side. Drainage from the north and east parts of the lot runs toward a detention pond in the northeast corner. Some of this is routed through the new storm sewer under the road. After detention, the water is released into Big Creek. There is a natural depression in the southwest corner of the lot that collects drainage from a small portion of said corner. Residential areas are located to the north, west, and south. Commercial areas are also located to the southeast. Crop lands lie to the east. This area ultimately contributes to flooding in the watershed.

Drainage Area 5: This area consists of a grassland on the south side and wooded areas on the north side. A nature/bike trail runs through the southern portion of the lot. The north side drains downhill to Finley Creek. The southeast portion drains to a low, flat portion of the lot, just north of the nature trail. This area also drains to Finley Creek. The small area just south of the nature trail drains to the south, and also ends in Finley Creek. A commercial area is located to the east, along with heavy woods. Residential areas lie to the north and west of the property. Heavy woods lie to the south. This area is located in a FEMA Zone A Flood Area. This area ultimately contributes to flooding in the watershed.

Drainage Area 6: This area is almost entirely heavy woods, besides the Public Works department on the south side. Drainage flows over the surface to the southwest, eventually ending up in Finley Creek. A residential area lies to the north, and Public Works area lies to the south. Wooded areas lie to the east and west. This area ultimately contributes to flooding in the watershed, and only a very small portion along the west border lies in the FEMA Zone A Flood Area.

Drainage Area 7: This area consists of heavily wooded land. Water drains from the east to the west, downhill, toward Finley Creek. Wooded areas and grasslands lie to the east, south, and west of the property. A residential area lies to the north. The entire parcel is located in a FEMA Zone A Flood Area. This area conveys flooding in the watershed.

Drainage Area 8: This area consists of two separate sections, divided by a residential subdivision. The sections are split into 8 East and 8 West.

8 East: The east section of this area consists of heavy woods and has a slope which drains to Finley Creek. Wooded areas lie to the south and east of this section. Residential areas lie to the north and west. The majority of the parcel is located in a FEMA Zone A Flood Area. This area conveys flooding in the watershed.

8 West: The west section of this area consists of grassland. The northern portion of this section drains to the northeast before getting picked up by the village storm sewer. The sewer leads first to a detention pond, then to Finley Creek. The southern portion drains to the southeast before also being picked up by village storm sewer. This also leads to a detention pond, then Finley Creek. A wooded area lies to the south, and residential areas lie to the west, east, and north. Additionally, a grassy field lies to the northeast. This area ultimately contributes to flooding in the watershed.

Drainage Area 9: This area consists of a wooded portion on the south side, and a small grassy area on the north side. A natural depression in the middle of the property captures most of the runoff before draining to Finley Creek to the west. Additionally, drainage may travel along the northern portion of the property through a roadside ditch before reaching Finley Creek. A residential area lies to the south and east of this property. A wooded area lies to the west. Finley creek runs along the northwest portion of this property, and County Road 30 runs along the north side. The majority of the parcel is located in a FEMA Zone A Flood Area. This area conveys flooding in the watershed.

Drainage Area 10: This area consists of thick grass. The west side of this property is a high, flat area. The north part of the property drains to the northeast, and the south drains to the southeast. This water is collected into a natural swale that then runs into Finley Creek. A school baseball field is located to the east. Large residential properties lie to the north, south, and west. This area ultimately contributes to flooding in the watershed.

Drainage Area 11: This area consists of crop land. The drainage flow in the western portion of the field flows through a drainage ditch to the north, towards a detention pond. The drainage flow in the eastern portion of the field flows through a second drainage ditch to the northwest, subsequently flowing into the same detention pond. The detention pond releases the water into a stream feeding Lake Decatur. County Road 30 lies to the south of this property and Baltimore Avenue lies to the east. A railroad berm lies to the north, and industrial land lies to the west. This area ultimately contributes to flooding in the watershed.

Drainage Area 12: This area consists of half grassland, half heavily wooded land. A natural depression in the wooded area collects drainage from the parcel, then releases it into the village storm sewer system. These pipes direct the water to a second detention area before releasing it to Finley Creek. Commercial areas lie to the north and west of this parcel, and residential areas lie to the east. Natural grasslands lie to the south and southwest. This area ultimately contributes to flooding in the watershed.

Drainage Area 13: This area consists of natural grassland with an access road. The northeastern part of this parcel drains to the east, into the natural depression mentioned previously in "Drainage Area 12". The southern and eastern part of this parcel drain to the east, towards Traughber Road. A roadside ditch collects the water and routes it south. This water eventually reaches Finley Creek. Grassland is located to the north, east, and south of this parcel. A residential area also lies on the south side, and a commercial on the north. Traughber Road lies on the west end of this parcel. This area ultimately contributes to flooding in the watershed.

Drainage Area 14: This area consists of vacant crop land. The drainage from this area flows to the southwest, towards Traughber Road. The roadside ditch collects the runoff and routes it towards Finley Creek. A residential property lies to the north, and Traughber Road lies to the west. More vacant crop land lies to the east and south. This area ultimately contributes to flooding in the watershed.

Drainage Area 15: This area consists of vacant crop land with tall grass. The east half of this property drains to the southeast towards a natural depression. This water is released into village storm sewers. These pipes direct the water to a second detention area before releasing it to Finley Creek. The west half of this property drains towards Traughber Road. The roadside ditch collects the runoff and routes it towards Finley Creek. Vacant crop land and grassland lie to the north and east of this property. Traughber Road lies to the west. Residential areas lie to the south. This area ultimately contributes to flooding in the watershed.

Drainage Area 16: This area consists of vacant crop land and grassland. Water drains over the surface towards the northeast. This water enters the village storm sewer system. These stormwater pipes direct the water to a detention area before releasing it to Finley Creek. A residential area is located to the south. Vacant crop land is located to the east and grasslands are located to the west. Dense wooded areas lie to the north. This area ultimately contributes to flooding in the watershed.

Drainage Area 17: This area consists of crop land. In the north portion of the parcel, water drains north through a natural swale on the west side of the property. This drains into the village stormwater system. These stormwater pipes direct the water to a detention area before releasing it to Finley Creek. Fletcher Park lies on the north side of the property, along with Fletcher Park Boulevard. The park and S Henderson Street also lie on the west side of the property. More crop lands lie on the south and east sides of the property. This area ultimately contributes to flooding in the watershed.

Drainage Area 18: This area consists of crop land with a railroad running through it. The sections are split into 18 East, and 18 West.

18 East: Water drains to multiple natural depressions in the field, along with roadside and railway ditches. The north portion of this section drains to the northwest via the Rt 121 roadside ditch and the railway ditch. Multiple natural depressions along the north side of the section can cause ponding of water. The southern section drains to the southeast along the railway ditch and between fields. This water eventually feeds into Big Creek. Route 121 lies to the north of this section. Existing crop lands lie to the east and south. A railway berm lies to the west. This area ultimately contributes to flooding in the watershed.

18 West: Water drains to multiple natural depressions in the field, along with roadside and railway ditches. The north half of the section drains north along the railway ditch and the west side of the field. It then enters the village storm sewer system. These stormwater pipes direct the water to a detention area before releasing it to Finley Creek. The south side of this section drains to two main natural depressions, before then draining to the south along the railway ditch. This water eventually feeds into Big Creek. Existing crop lands lie to the south and west of the area. Braves Parkway lies to the west also. A railway berm lies on the east side of the section. This area ultimately contributes to flooding in the watershed.

Drainage Area 19: This area consists of crop land. The northern portion of the field drains to the north, then to the west before reaching the village storm sewer system. Once in the system, the pipes direct the flow to a detention area before outfalling to Finley Creek. The southern portion of the field drains towards a natural depression to the southwest. This releases water to the south and ends up in Finley Creek. Fletcher Park Road lies to the north. Crop land lies to the east, south, and west of the property. This area ultimately contributes to flooding in the watershed.

City Code/Ordinance: The Village of Mount Zion was recently mapped by the Federal Emergency Management Agency and the new Flood Insurance Rate Maps became effective June 16, 2011 (Panels 17115C0340D, 17115C0320D). The Village participates in the Federal Flood Program and, therefore, must enforce its regulations on new developments/improvements within the flood zones shown on the map. The Village of Mount Zion regulates drainage in Chapter 152.057 (Drainage), and Chapter 150.170 (Flood Hazard Areas) of the City Code, and its Development Ordinance.

Summary: All of the drainage areas discharge surface water and contribute to flooding within their respective watersheds and ultimately discharge to areas that are classified as Zone A and AE on FEMA's Flood Insurance Rate Maps. Those parcels located in the FEMA Flood Zones convey the flood waters through the watershed

The Village regulates through ordinances which require stormwater to be addressed by reducing the stormwater runoff rate as land is developed. Higher runoff rate can contribute to flooding. All the parcels are undeveloped and, therefore, the land has not been previously regulated to control stormwater. Some parcels do contain portions of storm sewers. When the land is developed any local ponding issues will be addressed during stormwater management design per the codes.

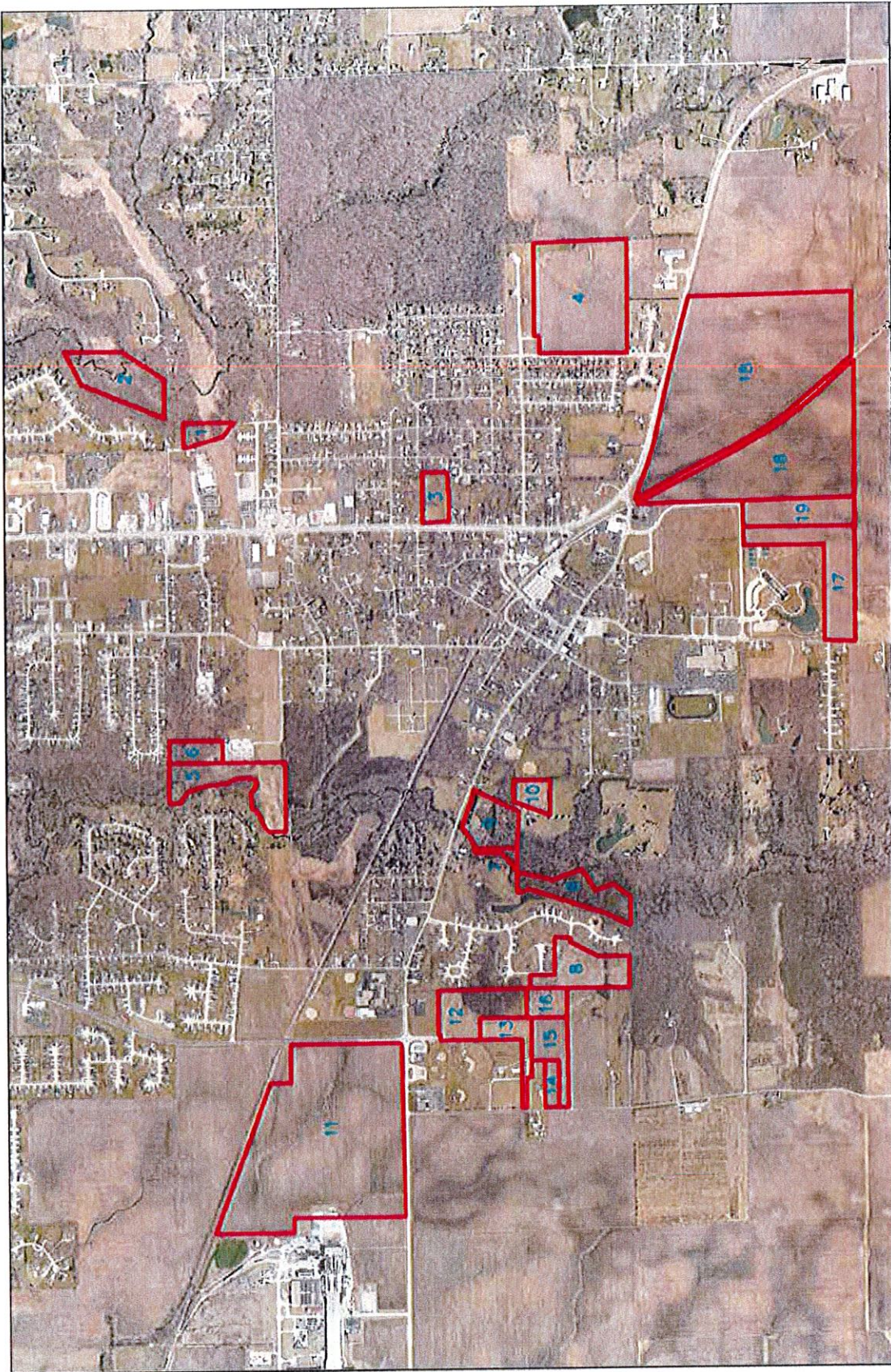
It is our recommendation that as the areas discussed above are developed within the TIF district, as well as other areas within the Village limits, the Village should continue to enforce the FEMA regulations and all applicable Village Codes. This would minimize current and future flood damage. This typically includes stormwater detention. At a minimum, new development should be required to reduce the rate of stormwater runoff from the site. Best Management Practices for reducing the volume of storm water runoff, including storm water retention facilities or other infiltration practices, could also be encouraged by the Village.

If you have any questions, please do not hesitate to contact me at 217-422-8544.

Sincerely,

A handwritten signature in cursive script that reads "Jeremy Buening".

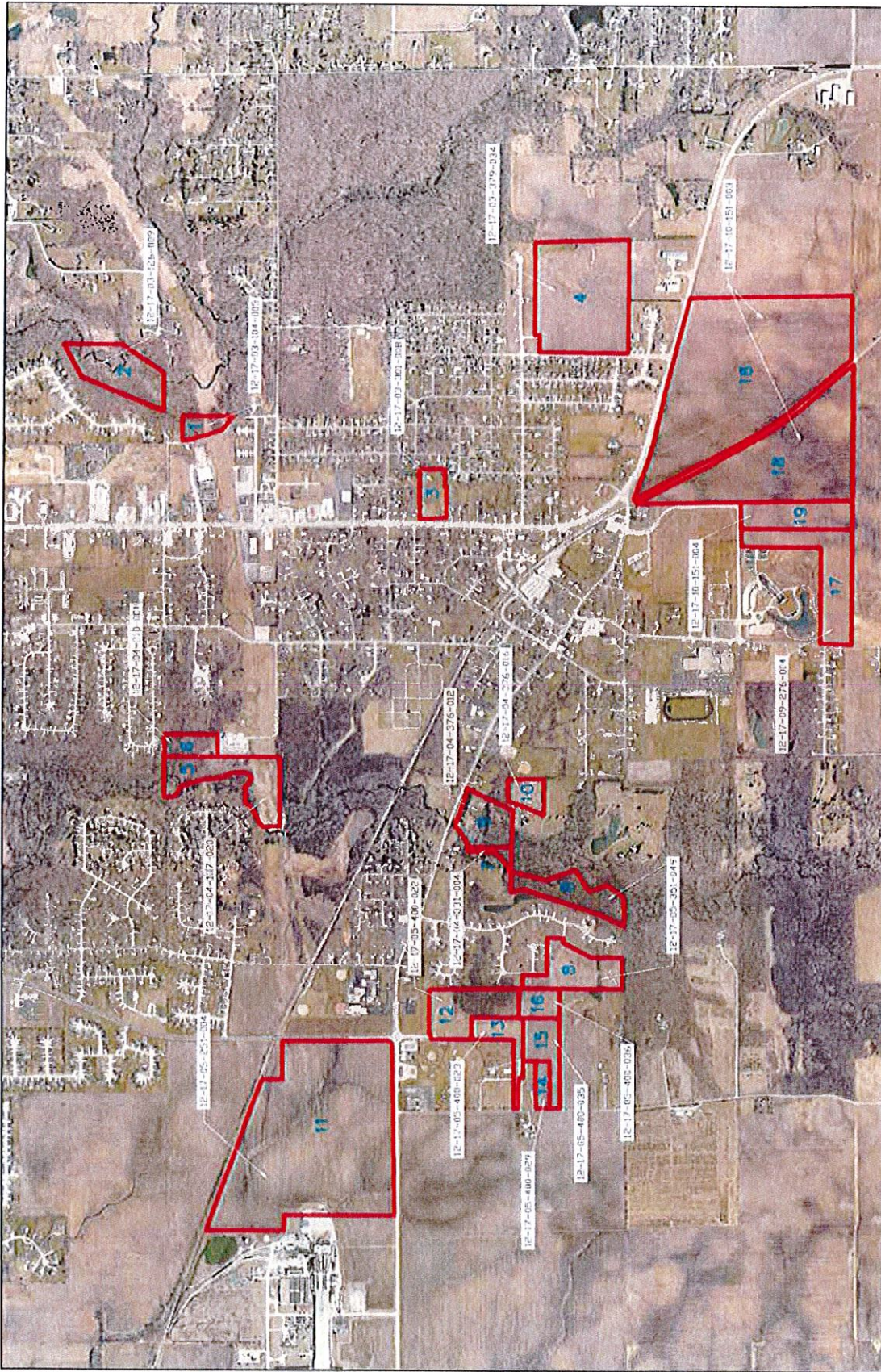
Jeremy Buening, P.E., S.E.
Principal
Enclosures



TIF DISTRICT DRAINAGE OPINION
VILLAGE OF MT. ZION
EXHIBIT 1

DECATUR (217) 422-8544
SCHAUMBURG (773) 714-0050
ROCKFORD (815) 489-0050
184-001397

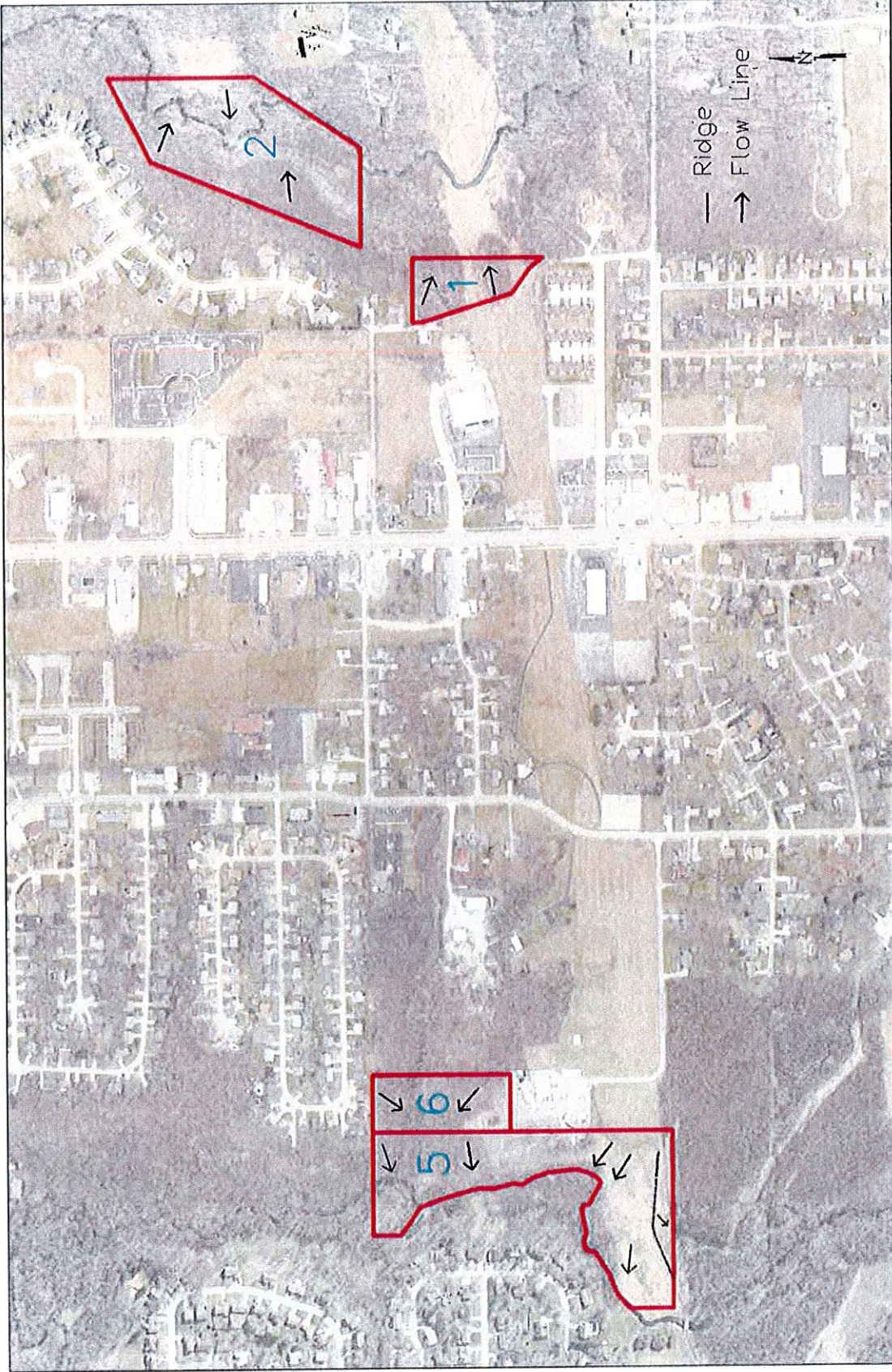
CHASTAIN
& ASSOCIATES LLC
CONSULTING ENGINEERS



TIF DISTRICT DRAINAGE OPINION
 VILLAGE OF MT. ZION
 EXHIBIT 2

DECATUR (217) 422-8544
 SCHAUMBURG (773) 714-0050
 ROCKFORD (815) 489-0050
 184-001397

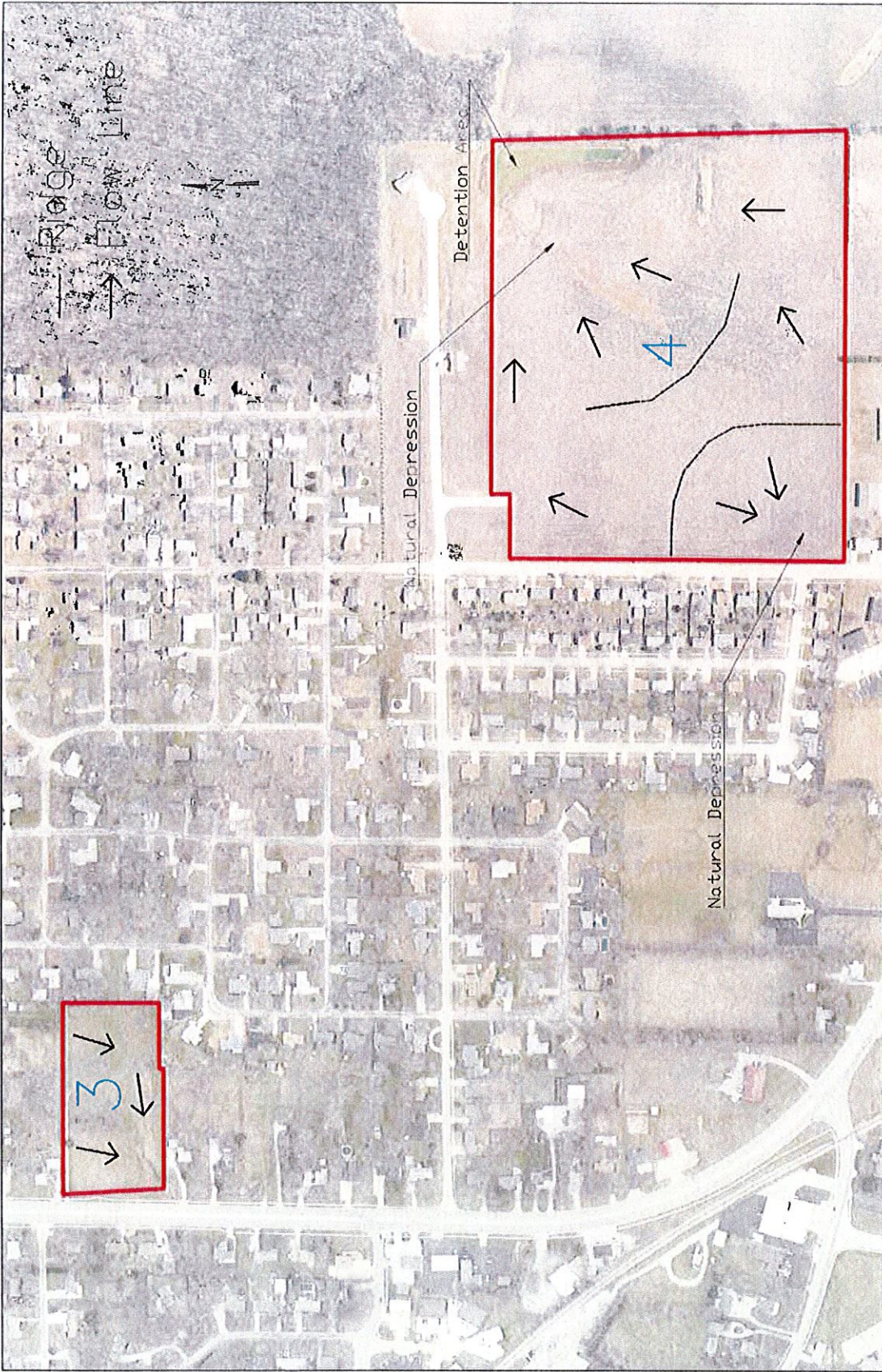
CHASTAIN
 & ASSOCIATES LLC
 CONSULTING ENGINEERS




TIF DISTRICT DRAINAGE OPINION
 VILLAGE OF MT. ZION
 EXHIBIT 3

DECATUR (217) 422-8544
 SCHAUMBURG (773) 714-0050
 ROCKFORD (815) 489-0050
 184-001397

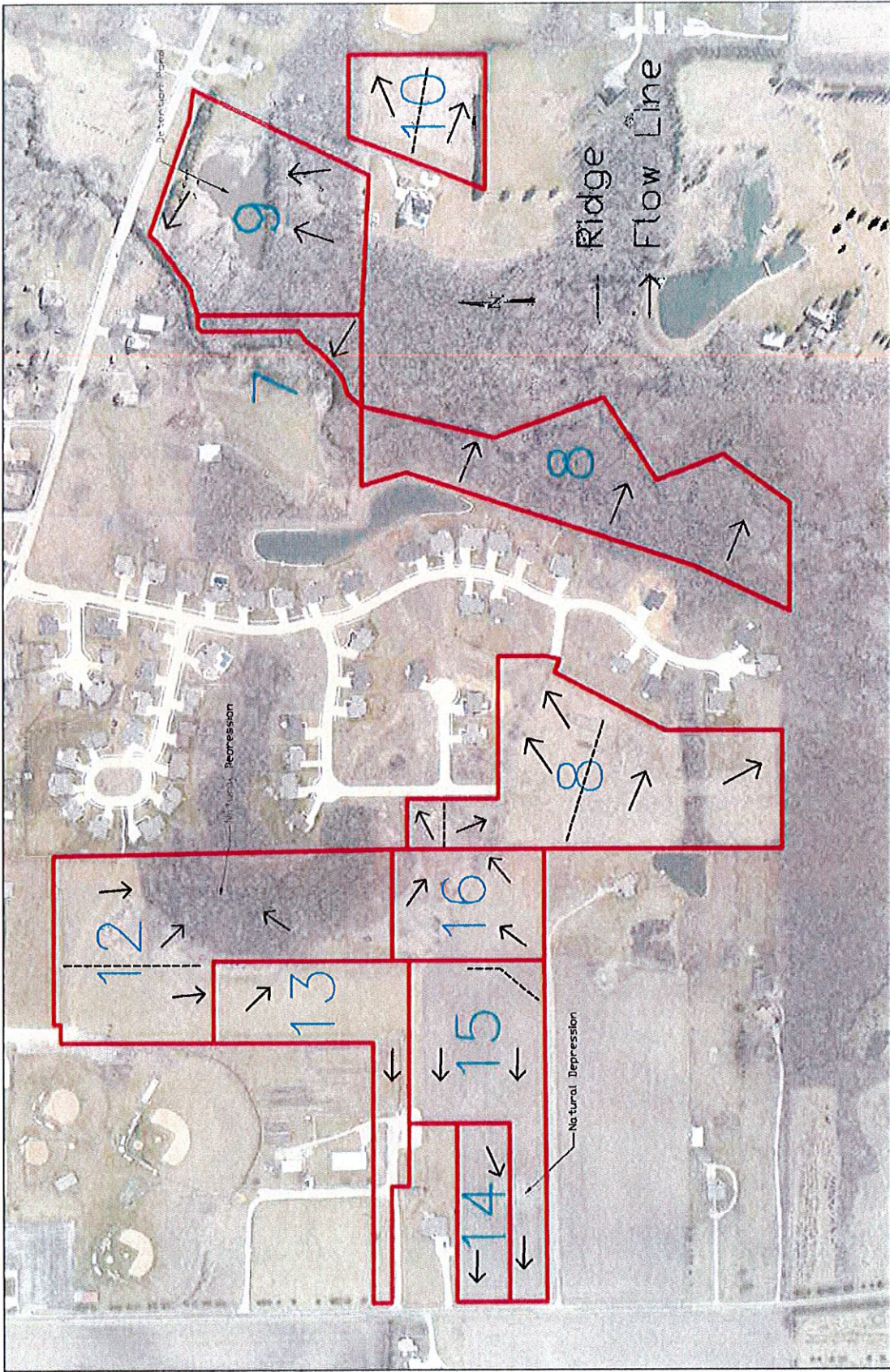
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& ASSOCIATES LLC
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 CONSULTING ENGINEERS

DECATUR (217) 422-8544
 SCHAMBURG (773) 714-0050
 ROCKFORD (815) 489-0050
 184-001397

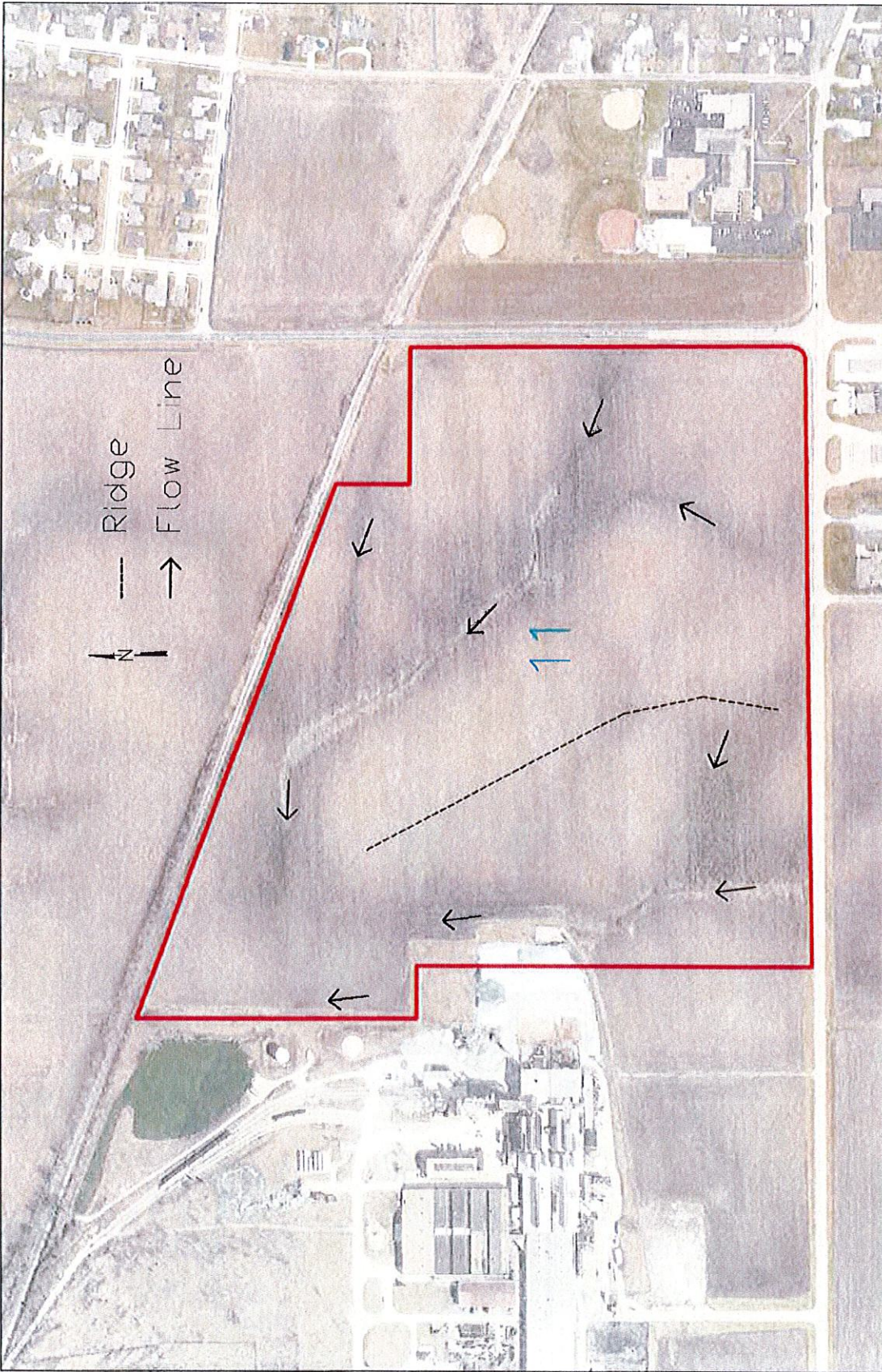
TIF DISTRICT DRAINAGE OPINION
 VILLAGE OF MT. ZION
 EXHIBIT 4



TIF DISTRICT DRAINAGE OPINION
 VILLAGE OF MT. ZION
 EXHIBIT 5

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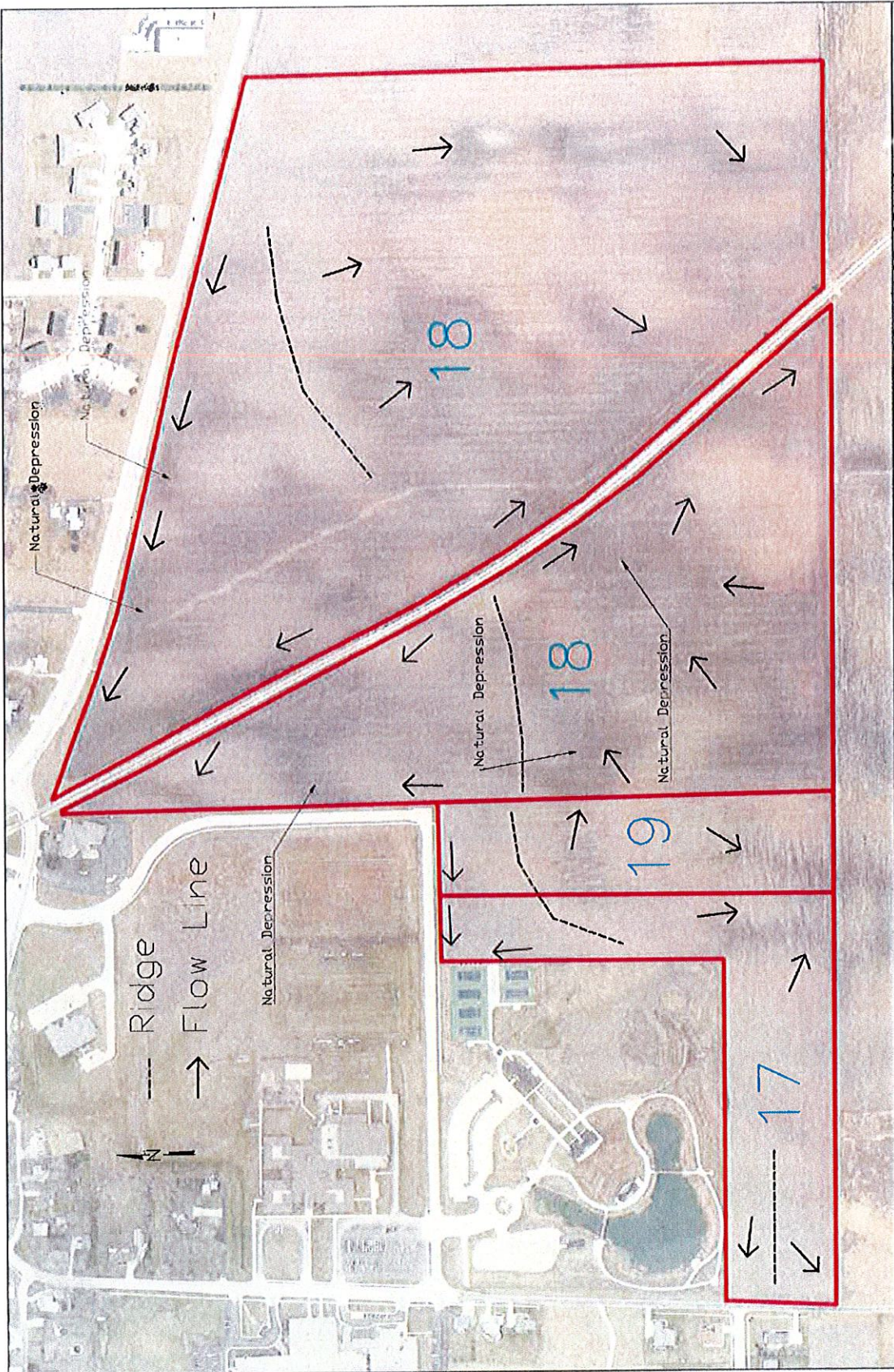


--- Ridge
 → Flow Line

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TIF DISTRICT DRAINAGE OPINION
 VILLAGE OF MT. ZION
 EXHIBIT 6



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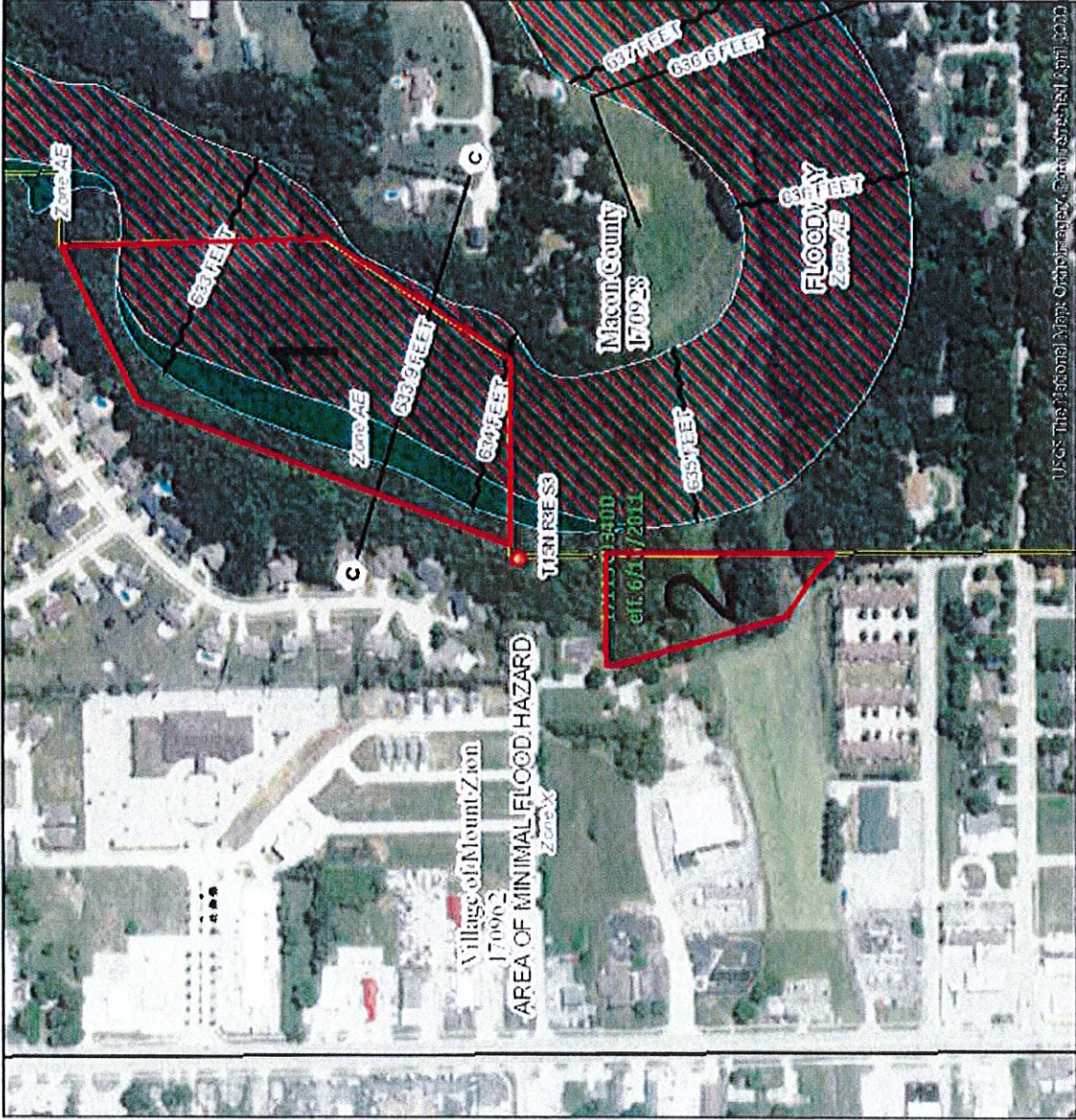
DECATUR (217) 422-8544
 SCHAUMBURG (773) 714-0050
 ROCKFORD (815) 489-0050
 184-001397

TIF DISTRICT DRAINAGE OPINION
 VILLAGE OF MT. ZION
 EXHIBIT 7

National Flood Hazard Layer FIRMette



88°52'17" W 39°47'18" N



USGS The National Map, Orthorectified, County, State, and ZIP, 2020
88°52'17" W 39°47'18" N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- SPECIAL FLOOD HAZARD AREAS**
 - Without Base Flood Elevation (BFE) Zone A, V, AR9
 - With BFE or Depth Zone AE, AO, AH, VE, AR
 - Regulatory Floodway
- OTHER AREAS OF FLOOD HAZARD**
 - 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
 - Future Conditions 1% Annual Chance Flood Hazard Zone X
 - Area with Reduced Flood Risk due to Levee, See Notes, Zone X
 - Area with Flood Risk due to Levee Zone D
- OTHER AREAS**
 - NO SCREEN Area of Minimal Flood Hazard Zone X
 - Effective LOMFs
 - Area of Undetermined Flood Hazard Zone D
- GENERAL STRUCTURES**
 - Channel, Culvert, or Storm Sewer
 - Levee, Dike, or Floodwall
- OTHER FEATURES**
 - Cross Sections with 1% Annual Chance Water Surface Elevation
 - Coastal Transect
 - Base Flood Elevation Line (BFE)
 - Limit of Study
 - Jurisdiction Boundary
 - Coastal Transect Baseline
 - Profile Baseline
 - Hydrographic Feature
- MAP PANELS**
 - Digital Data Available
 - No Digital Data Available
 - Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/13/2020 at 11:47 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMette

88°52'28" W 39°46'43" N



USGS The National Map, Orthoimagery, Data refreshed 10/11/2020
88°51'51" W 39°46'15" N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- SPECIAL FLOOD HAZARD AREAS**
 - Without Base Flood Elevation (BFE) Zone A, V, AP
 - With BFE or Depth Zone AE, AH, XE, AR
 - Regulatory Floodway
- OTHER AREAS OF FLOOD HAZARD**
 - 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
 - Future Conditions 1% Annual Chance Flood Hazard Zone X
 - Area with Reduced Flood Risk due to Levees. See Notes. Zone X
 - Area with Flood Risk due to Levees. Zone D
- OTHER AREAS**
 - NO SCREEN
 - Area of Minimal Flood Hazard Zone X
 - Effective LOMRs
 - Area of Undetermined Flood Hazard Zone O
- GENERAL STRUCTURES**
 - Channel, Culvert, or Storm Sewer
 - Levee, Dike, or Floodwall
- CROSS SECTIONS WITH 1% ANNUAL CHANGE WATER SURFACE ELEVATION**
 - Coastal Transect
 - Base Flood Elevation Line (BFE)
 - Limit of Study
- OTHER FEATURES**
 - Jurisdiction Boundary
 - Coastal Transect Baseline
 - Profile Baseline
 - Hydrographic Feature
- MAP PANELS**
 - Digital Data Available
 - No Digital Data Available
 - Unmapped

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This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

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National Flood Hazard Layer FIRMette



88°51'59"W 39°46'31"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- SPECIAL FLOOD HAZARD AREAS**
 - Without Base Flood Elevation (BFE) Zone A, V, AFD
 - With BFE or Depth Zone AE, AH, AO, AR, VE, AR
 - Regulatory Floodway
- OTHER AREAS OF FLOOD HAZARD**
 - 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
 - Future Conditions 1% Annual Chance Flood Hazard Zone X
 - Area with Reduced Flood Risk due to Levee, See Notes, Zone X
 - Area with Flood Risk due to Levee Zone D
- OTHER AREAS**
 - NO SCREEN
 - Area of Minimal Flood Hazard Zone X
 - Effective LOMIRs
 - Area of Undetermined Flood Hazard Zone D
- GENERAL STRUCTURES**
 - Channel, Culvert, or Storm Sewer
 - Levee, Dike, or Floodwall
- OTHER FEATURES**
 - Cross Sections with 1% Annual Chance Water Surface Elevation
 - Coastal Transect
 - Base Flood Elevation Line (BFE)
 - Limit of Study
 - Jurisdiction Boundary
 - Coastal Transect Baseline
 - Profile Baseline
 - Hydrographic Feature
- MAP PANELS**
 - Digital Data Available
 - No Digital Data Available
 - Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps. If it is not valid as described below. The basemap shown complies with FEMA's basemap accuracy standards. The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/13/2020 at 12:35 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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National Flood Hazard Layer FIRMette



88°53.6' W, 39°47.10' N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- SPECIAL FLOOD HAZARD AREAS**
 - Without Base Flood Elevation (BFE) Zone A, V, AE
 - With BFE or Depth Zone AE, AO, AH, VE, AR
 - Regulatory Floodway
- OTHER AREAS OF FLOOD HAZARD**
 - 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
 - Future Conditions 1% Annual Chance Flood Hazard Zone X
 - Area with Reduced Flood Risk due to Levee, See Notes, Zone X
 - Area with Flood Risk due to Levee Zone D
- OTHER AREAS**
 - NO SCREEN
 - Area of Minimal Flood Hazard Zone X
 - Effective LOMFRs
 - Area of Undetermined Flood Hazard Zone D
- GENERAL STRUCTURES**
 - Channel, Culvert, or Storm Sewer
 - Levee, Dike, or Floodwall
- OTHER FEATURES**
 - Cross Sections with 1% Annual Chance Water Surface Elevation
 - Coastal Transsect
 - Base Flood Elevation Line (BFE)
 - Limit of Study
 - Jurisdiction Boundary
 - Coastal Transsect Baseline
 - Profile Baseline
 - Hydrographic Feature
- MAP PANELS**
 - Digital Data Available
 - No Digital Data Available
 - Unmapped

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This map complies with FEMA's standards for the use of digital flood maps. If it is not valid as described below, the basemap shown complies with FEMA's basemap accuracy standards.

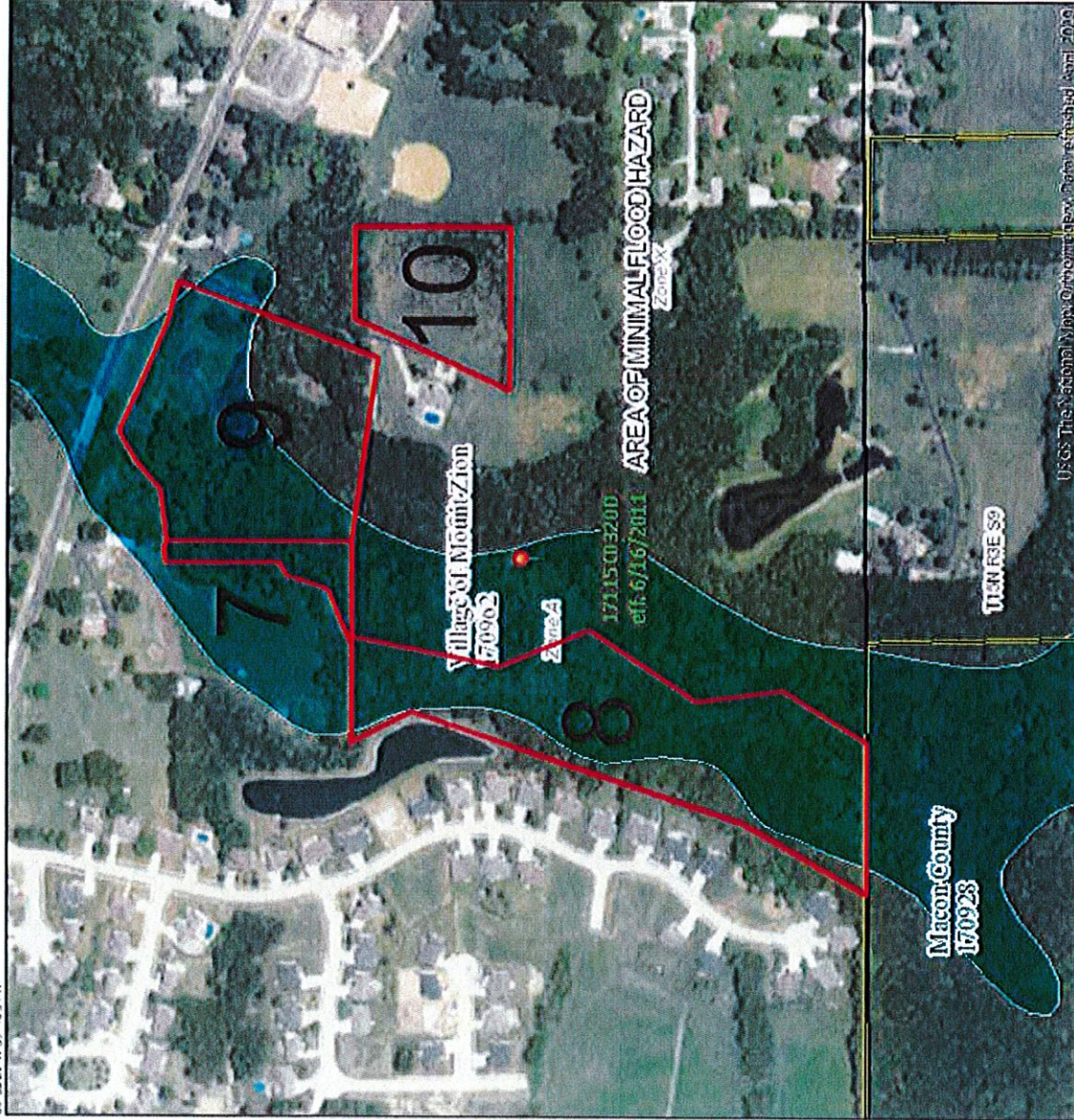
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/13/2020 at 12:13 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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National Flood Hazard Layer FIRMette



88°52'17"W 39°46'24"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- SPECIAL FLOOD HAZARD AREAS**
 - Without Base Flood Elevation (BFE) Zone A, V, AG
 - With BFE or Depth Zone AE, AO, AH, VE, AR
 - Regulatory Floodway
- OTHER AREAS OF FLOOD HAZARD**
 - 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
 - Future Conditions 1% Annual Chance Flood Hazard Zone X
 - Area with Reduced Flood Risk due to Levee, See Notes, Zone X
 - Area with Flood Risk due to Levee, Zone D
- OTHER AREAS**
 - NO SCREEN
 - Area of Minimal Flood Hazard Zone X
 - Effective LOMRs
 - Area of Undetermined Flood Hazard Zone D
- GENERAL STRUCTURES**
 - Channel, Culvert, or Storm Sewer
 - Levee, Dike, or Floodwall
- OTHER FEATURES**
 - Cross Sections with 1% Annual Chance Water Surface Elevation
 - Coastal Transect
 - Base Flood Elevation Line (BFE)
 - Limit of Study
 - Jurisdiction Boundary
 - Coastal Transect Baseline
 - Profile Baseline
 - Hydrographic Feature
- MAP PANELS**
 - Digital Data Available
 - No Digital Data Available
 - Unmapped

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This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/13/2020 at 12:42 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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National Flood Hazard Layer FIRMette



88°53'17"W 39°46'17"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- SPECIAL FLOOD HAZARD AREAS**
 - Without Base Flood Elevation (BFE) Zone A, V, AEP
 - With BFE or Depth Zone AE, AO, AH, VE, AR
 - Regulatory Floodway
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 - Future Conditions 1% Annual Chance Flood Hazard Zone X
 - Area with Reduced Flood Risk due to Levee, See Notes, Zone X
 - Area with Flood Risk due to Levee Zone D
- OTHER AREAS**
 - NO SCREEN
 - Area of Minimal Flood Hazard Zone X
 - Effective LOMIRs
 - Area of Undetermined Flood Hazard Zone D
- GENERAL STRUCTURES**
 - Channel, Culvert, or Storm Sewer
 - Levee, Dike, or Floodwall
- OTHER FEATURES**
 - Cross Sections with 1% Annual Chance Water Surface Elevation
 - Coastal Transect
 - Base Flood Elevation Line (BFE)
 - Limit of Study
 - Jurisdiction Boundary
 - Coastal Transect Baseline
 - Profile Baseline
 - Hydrographic Feature
- MAP PANELS**
 - Digital Data Available
 - No Digital Data Available
 - Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps. It is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

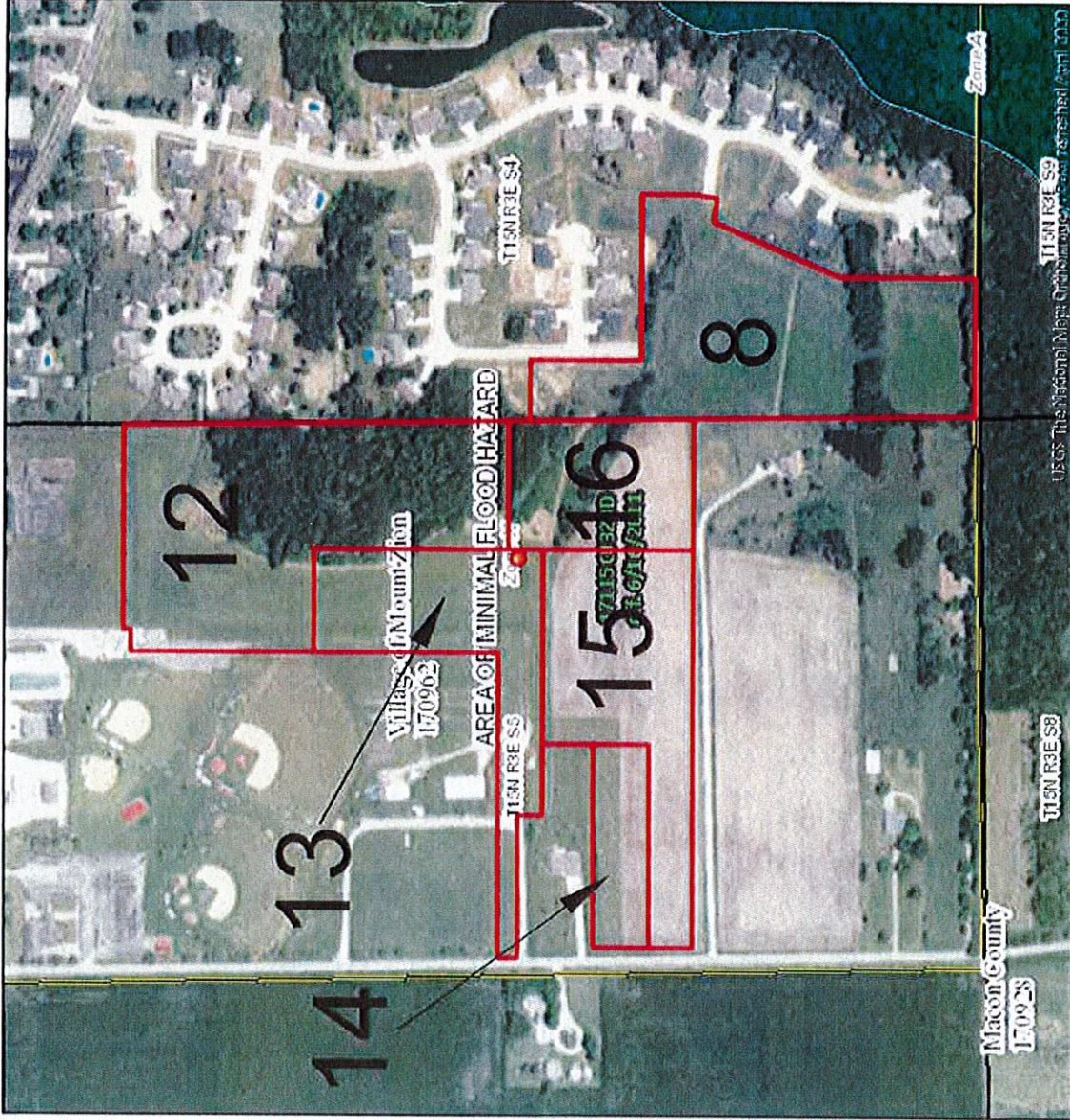
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/13/2020 at 1:33 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodeled areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMette



88°53'45"W 39°46'37"N



0 250 500 1,000 1,500 2,000 Feet
1:6,000

USGS The National Water Research Institute
170928
88°53'45"W 39°46'37"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- SPECIAL FLOOD HAZARD AREAS**
 - Without Base Flood Elevation (BFE) Zone A, V, AP9
 - With BFE or Depth Zone AE, AO, AH, VE, AR
 - Regulatory Floodway
- OTHER AREAS OF FLOOD HAZARD**
 - 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile, Zone X
 - Future Conditions 1% Annual Chance Flood Hazard Zone X
 - Area with Reduced Flood Risk due to Levees, See Notes, Zone X
 - Area with Flood Risk due to Levees, Zone D
- OTHER AREAS**
 - NO SCREEN
 - Area of Minimal Flood Hazard Zone X
 - Effective LOMFRs
 - Area of Undetermined Flood Hazard Zone D
- GENERAL STRUCTURES**
 - Channel, Culvert, or Storm Sewer
 - Levee, Dike, or Floodwall
- OTHER FEATURES**
 - 20.2 Cross Sections with 1% Annual Chance
 - Water Surface Elevation
 - Coastal Transact
 - Base Flood Elevation Line (BFE)
 - Limit of Study
 - Jurisdiction Boundary
 - Coastal Transact Baseline
 - Profile Baseline
 - Hydrographic Feature
- MAP PANELS**
 - Digital Data Available
 - No Digital Data Available
 - Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

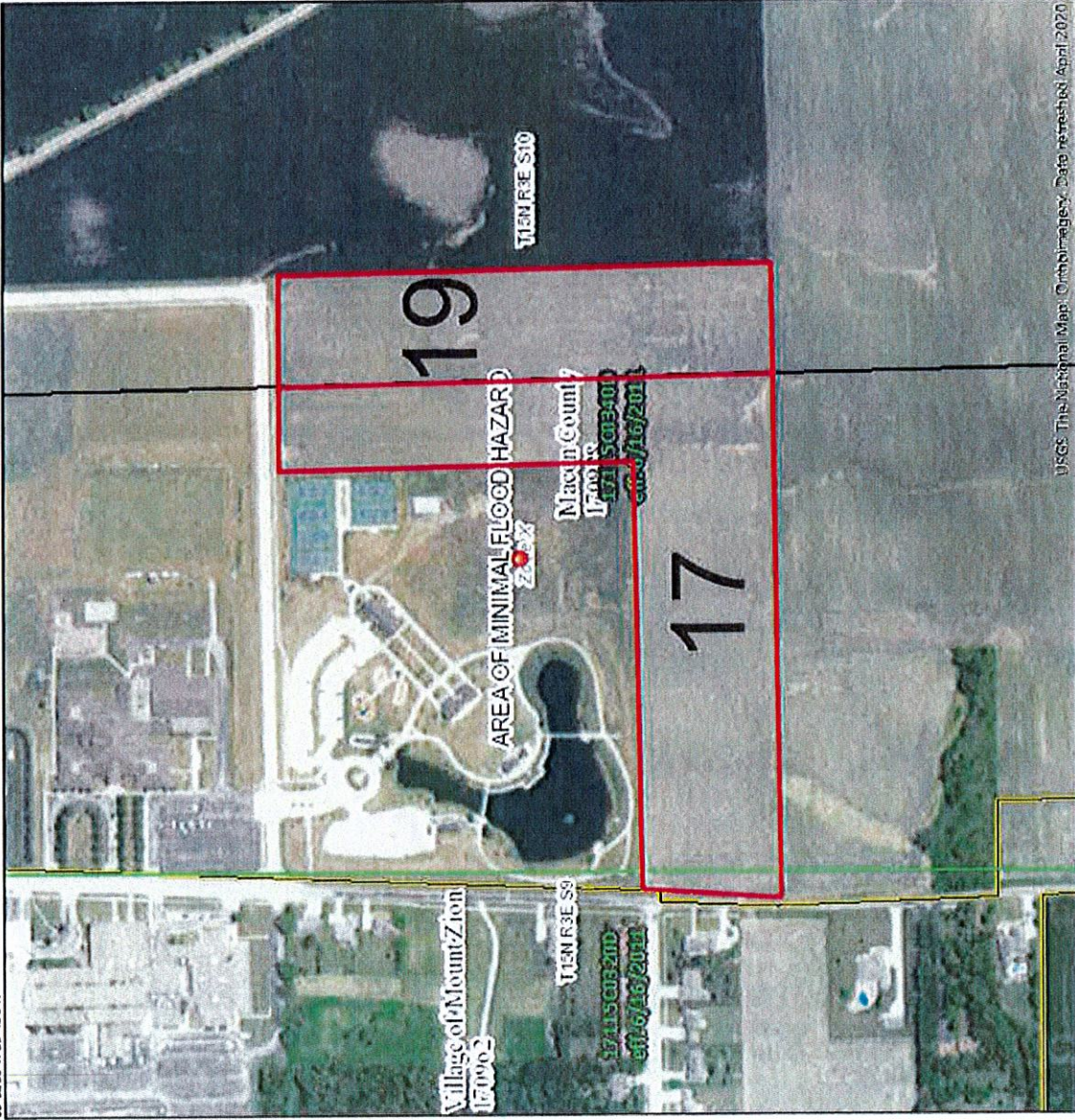
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/13/2020 at 1:05 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMette



88°52'35"W 39°46'57"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- SPECIAL FLOOD HAZARD AREAS**
 - Without Base Flood Elevation (BFE) Zone A, V, or X
 - With BFE or Depth Zone AE, AO, AH, VE, AR
 - Regulatory Floodway
- OTHER AREAS OF FLOOD HAZARD**
 - 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
 - Future Conditions 1% Annual Chance Flood Hazard Zone X
 - Area with Reduced Flood Risk due to Levee. See Notes. Zone X
 - Area with Flood Risk due to Levee. Zone D
- OTHER AREAS**
 - NO SCREEN
 - Area of Minimal Flood Hazard Zone X
 - Effective LOMFRs
 - Area of Undetermined Flood Hazard Zone D
- GENERAL STRUCTURES**
 - Channel, Culvert, or Storm Sewer
 - Levee, Dike, or Floodwall
- OTHER FEATURES**
 - Cross Sections with 1% Annual Chance Water Surface Elevation
 - Coastal Transsect
 - Base Flood Elevation Line (BFE)
 - Limit of Study
 - Jurisdiction Boundary
 - Coastal Transsect Baseline
 - Profile Baseline
 - Hydrographic Feature
- MAP PANELS**
 - Digital Data Available
 - No Digital Data Available
 - Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

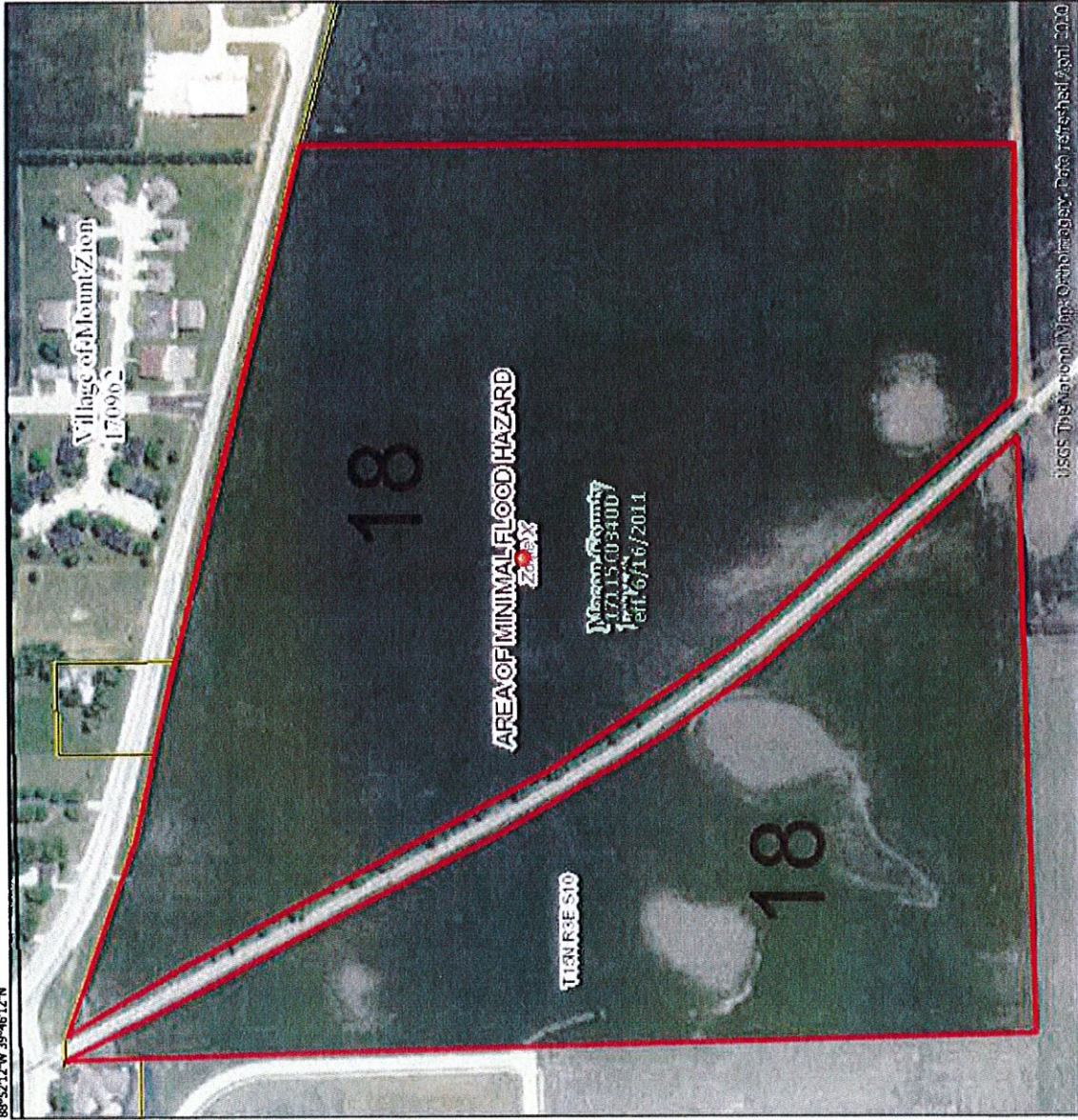
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/13/2020 at 1:48 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMette



88°52'12"W 39°46'12"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- SPECIAL FLOOD HAZARD AREAS**
- Without Base Flood Elevation (BFE) Zone A, Y, AR9
 - With BFE or Depth Zone AE, AO, AH, VE, AR
 - Regulatory Floodway
 - 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
 - Future Conditions 1% Annual Chance Flood Hazard Zone X
 - Area with Reduced Flood Risk due to Levees. See Notes, Zone X
 - Area with Flood Risk due to Levees Zone D
- OTHER AREAS OF FLOOD HAZARD**
- NO SCREEN
 - Area of Minimal Flood Hazard Zone X
 - Effective LOMRS
 - Area of Undetermined Flood Hazard Zone D
- OTHER AREAS**
- Channel, Culvert, or Storm Sewer
 - Levee, Dike, or Floodwall
- GENERAL STRUCTURES**
- 20.5
 - Cross Sections with 1% Annual Chance Water Surface Elevation
 - 17.8
 - Coastal Transect
 - Base Flood Elevation Line (BFE)
 - Limit of Study
 - Jurisdiction Boundary
 - Coastal Transect Baseline
 - Profile Baseline
 - Hydrographic Feature
- OTHER FEATURES**
- Digital Data Available
 - No Digital Data Available
 - Unmapped
- MAP PANELS**
- The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/13/2020 at 4:40 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

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SECTION X. APPENDICES

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