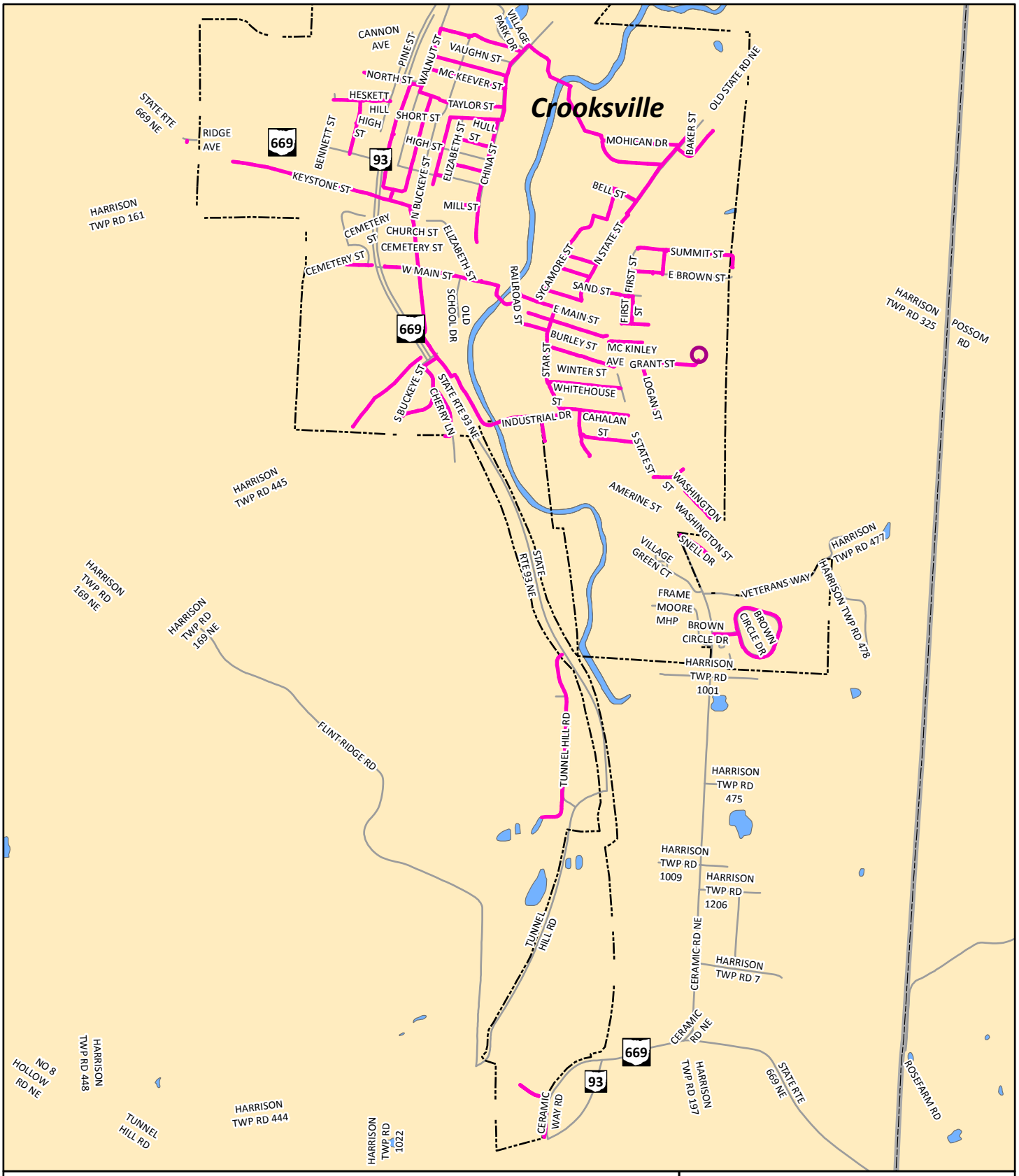
Appendix A

Exhibits



Water Line Replacement

Village of Crooksville, Perry County

General Features

- Water Tank
- Water Lines
- Road Centerlins
- Perry Townships

Map Created by Jason Pyles, October, 2016

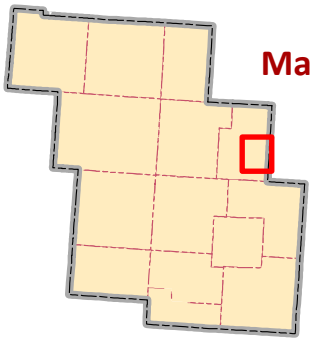
For questions about data soruces, contact a GIS Specialist at Buckeye Hills

0 500 1,000 1,500 2,000

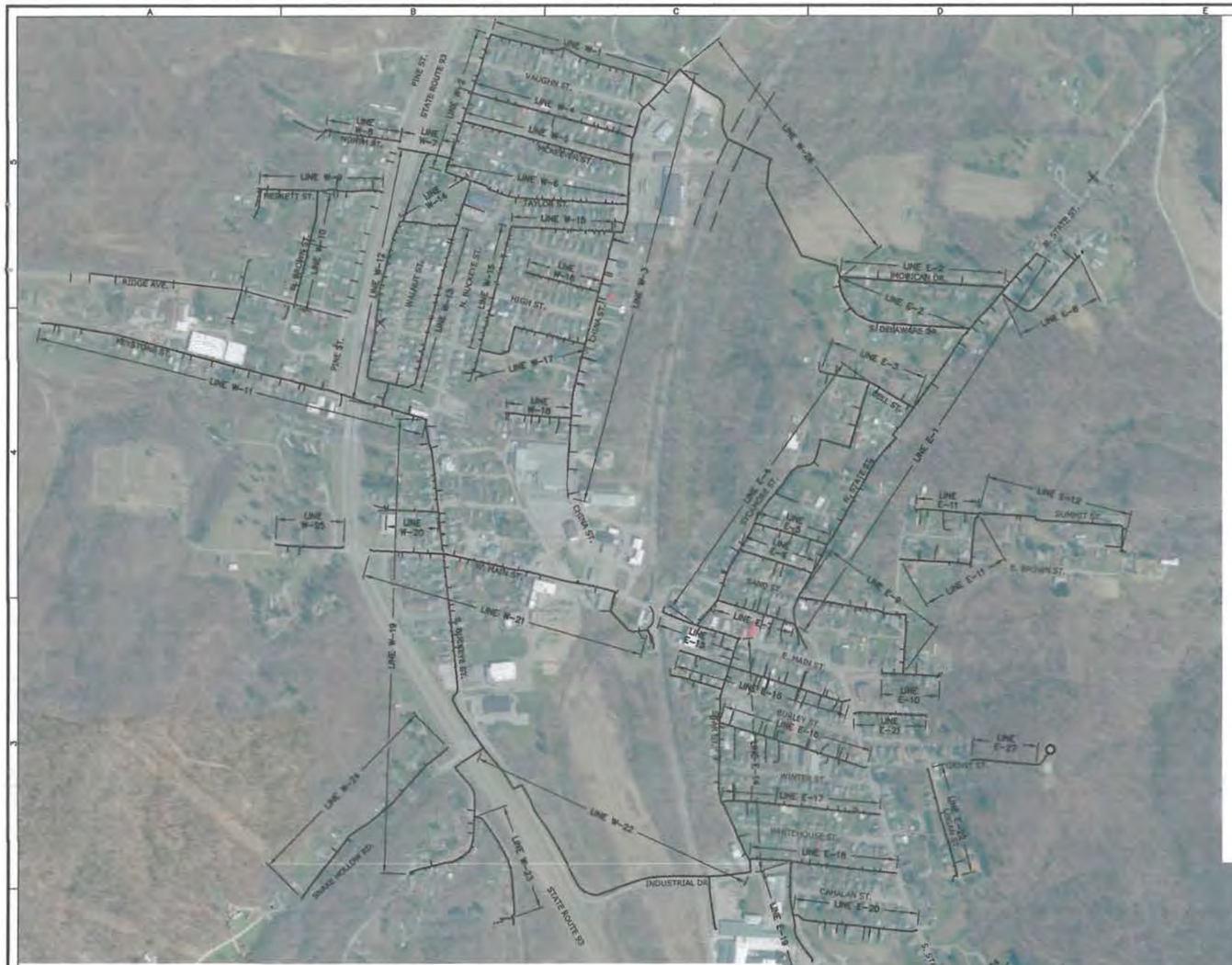
Feet

Buckeye Hills - Hocking Valley Regional Development District

http://www.buckeyehills.org | 740.374.9436



Map Area



LINE / SHEET INDEX	
LINE	SHEETS
W-1	4
W-2	5
W-3	6-8
W-4	9
W-5	10
W-6	11
W-7	12
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E-24	69
E-25	70
E-26	71-72
E-27	73
S-1	74-75
S-2	76

GRAPHIC SCALE

400 200 0 400

(IN FEET)
1 inch = 400 ft.

IBI GROUP
5085 Tile Plant Road
New Lexington OH 43764 USA
tel 740-342-6695 fax 740-342-6697
ibigroup.com

REVISION:

STAMP:

STATE OF OHIO
CURTIS ALAN BROWN
E-78417
REGISTERED PROFESSIONAL ENGINEER

STAMP:

STATE OF OHIO
GRANT FOREST SCHOOLEY
E-80135
REGISTERED PROFESSIONAL ENGINEER

PERRY COUNTY

VILLAGE OF CROOKSVILLE

WATER SYSTEM IMPROVEMENTS
WATERLINE REPLACEMENT

DESIGN	DRAFT	CHECK
CAB/GFS	GFS	CAB

IBI GROUP NO.: 14-057

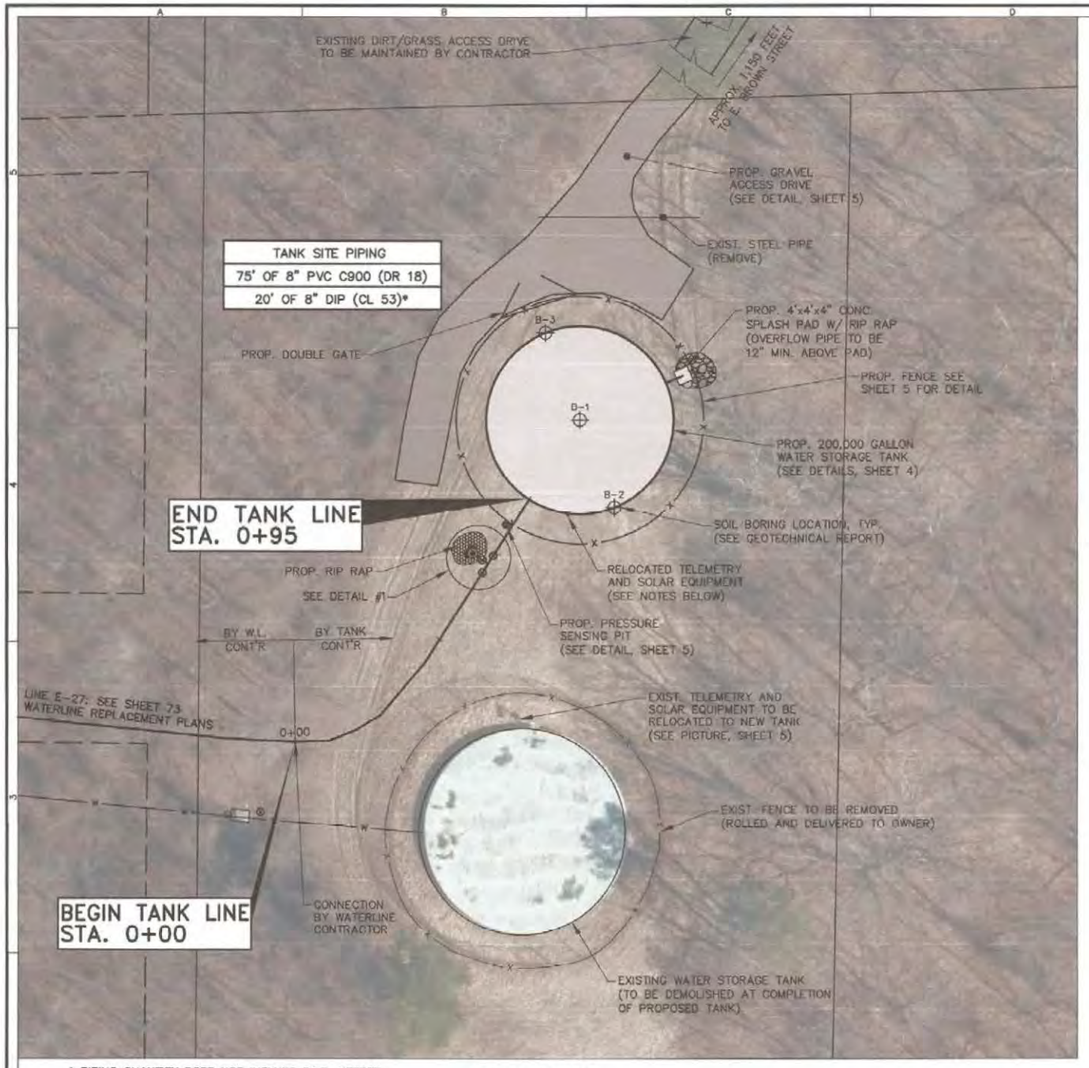
DATE: OCTOBER 2015

SCALE:
HORIZONTAL: 1" = 400'
VERTICAL: N/A

SHEET TITLE:

INDEX MAP

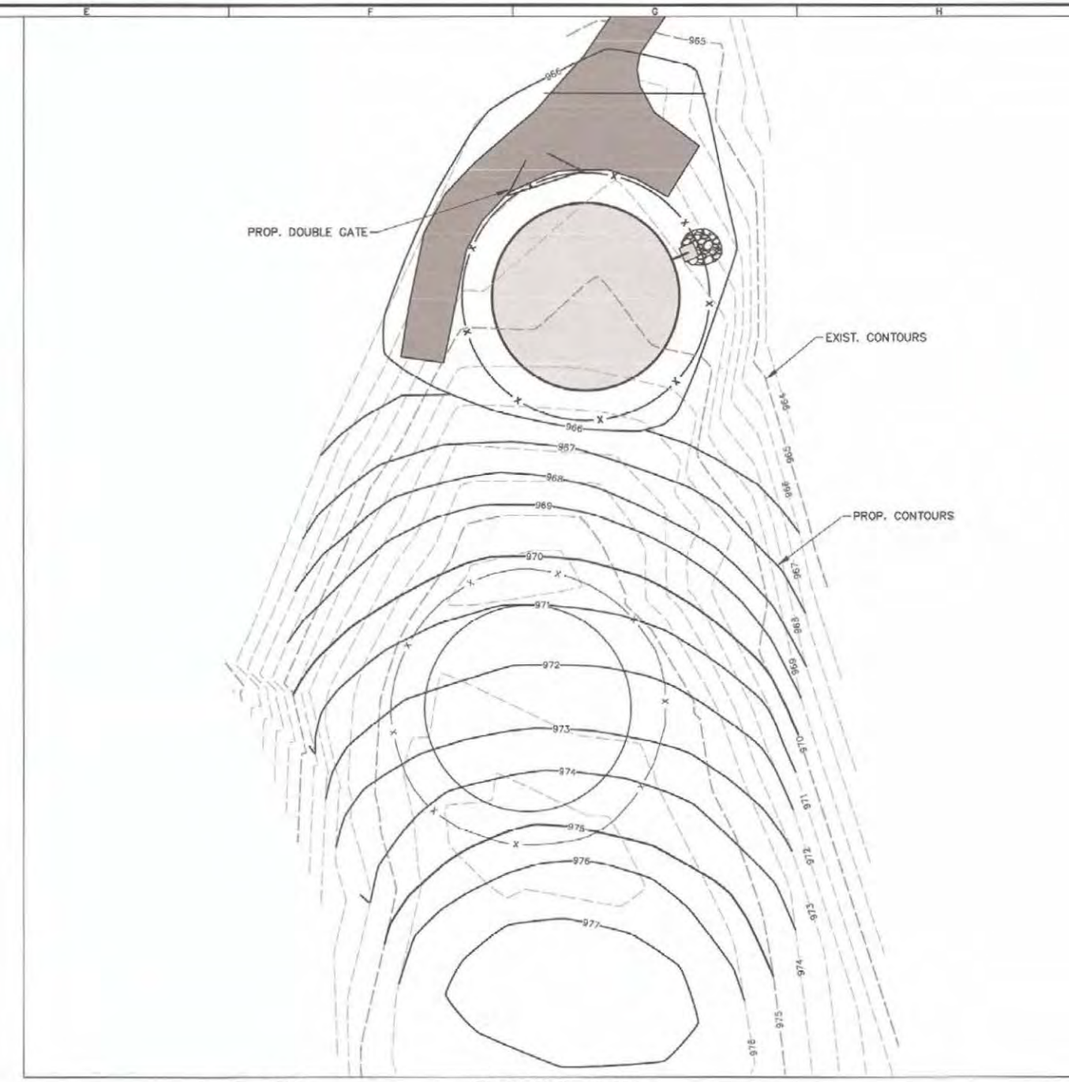
SHEET NO.: 3



* PIPING QUANTITY DOES NOT INCLUDE D.I.P. NEEDED UNDER AND IN/OUT OF TANK. INLET/OUTLET PIPING SHALL BE INCLUDED IN VARIOUS BID ITEMS.

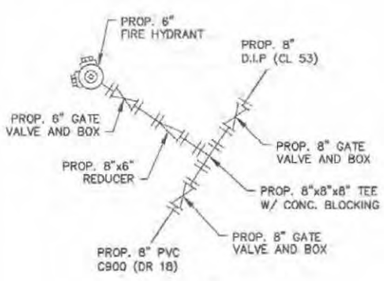
SITE PLAN

SCALE: 1"=20'



GRADING PLAN

SCALE: 1"=20'



DETAIL #1

NOT TO SCALE

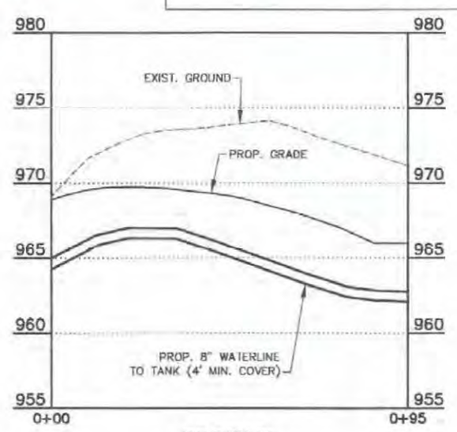
TELEMETRY NOTES

1. TELEMETRY AND SOLAR EQUIPMENT SHALL BE RELOCATED TO NEW TANK LOCATION.

2. A NEW 2" DIAMETER MAST SHALL BE INSTALLED ON NEW WATER TANK TO EXTEND THE ANTENNA A MINIMUM OF 10' ABOVE THE SIDEWALL.

3. NEW CONDUIT, CABLE, AND SUPPORTS SHALL BE INSTALLED AS NEEDED FOR OPERATIONAL SYSTEM.

4. A 4-20mA LOOP SHALL BE PROVIDED FROM NEW MERCOID SBLT2-5-40-P2 TRANSDUCER (SEE DETAIL, SHEET 5) TO THE RELOCATED CONTACT IN THE TELEMETRY PANEL.



PROFILE: TANK SITE PIPING

HORIZ. SCALE 1"=20'
VERT. SCALE 1"=5'

NOTES FOR TANK CONTRACTOR

1. ACCESS DRIVE TO THE PROPOSED TANK SHALL BE CONSTRUCTED AS DETAILED. CONTRACTOR SHALL MAINTAIN THE DRIVE DURING CONSTRUCTION AND RESTORE WITH LIKE MATERIALS AT CONSTRUCTION COMPLETION. THE DIRT/GRASS ACCESS FROM E. BROWN STREET TO THE VILLAGE PROPERTY SHALL BE GRADED, SEEDED, AND MULCHED AT PROJECT COMPLETION.

2. CONTRACTOR SHALL GRADE SITE AS SHOWN IN THE GRADING PLAN AND AS NECESSARY FOR TANK CONSTRUCTION INCLUDING PROVIDING POSITIVE DRAINAGE AWAY FROM TANK AND ACCESS DRIVE AND FOR FLOW FROM THE PROPOSED HYDRANT. CONTRACTOR IS RESPONSIBLE FOR CLEARING AND GRUBBING INCLUDING REMOVAL OF DEBRIS FROM THE SITE. ONSITE BURNING IS ALLOWED WITH NECESSARY APPROVALS FROM VILLAGE FIRE DEPARTMENT.

3. CONTRACTOR SHALL PROVIDE ANY NECESSARY EROSION CONTROL FOR THE DURATION OF CONSTRUCTION ACTIVITIES.

4. CONTRACTOR SHALL FINAL GRADE AREA DISTURBED BY CONSTRUCTION THEN SEED AND MULCH.

5. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING BUILDING PERMITS FOR TANK AND ALL FEES ASSOCIATED.

6. TANK CONTRACTOR SHALL COORDINATE HIS SITE PIPING WITH THE WATERLINE CONTRACTOR.

7. SOIL EXCAVATED FOR CONSTRUCTION OF PROPOSED TANK SHALL BE STOCKPILED AND UTILIZED TO FILL EXISTING TANK. CONTRACTOR SHALL INSTALL TEMPORARY STORMWATER RUNOFF PROTECTION AROUND STOCKPILE(S).

GRAPHIC SCALE
N/A N/A 0 N/A
(IN FEET)
1 inch = N/A ft.

IBI
IBI GROUP
5085 Tile Plant Road
New Lexington OH 43764 USA
tel 740-342-6895 fax 740-342-8897
ibigroup.com

REVISION:
1 REVISED FOR ARMY CORPS OF ENGINEERING

STATE OF OHIO DONALD MITCH ALTIER E-61546 REGISTERED PROFESSIONAL ENGINEER

STAMP:
STATE OF OHIO CURTIS ALAN BROWN E-78417 REGISTERED PROFESSIONAL ENGINEER

STAMP:
STATE OF OHIO GRANT FOREST SCHOOLEY E-80135 REGISTERED PROFESSIONAL ENGINEER

PERRY COUNTY

VILLAGE OF CROOKSVILLE

WATER SYSTEM IMPROVEMENTS
WATER STORAGE TANK

DESIGN	DRAFT	CHECK
CAB/GFS	GFS	CAB

IBI GROUP NO.: 14-057
DATE: OCTOBER 2015
SCALE:
HORIZONTAL: AS NOTED
VERTICAL:
SHEET TITLE:

TANK SITE PLAN

SHEET NO.: 3

LINE / SHEET INDEX	
LINE	SHEETS
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E-26	71-72
E-27	73
S-1	74-75
S-2	76

GRAPHIC SCALE

400 200 0 400

(IN FEET)
1 inch = 400 ft.

IBI

IBI GROUP
5085 Tile Plant Road
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PERRY COUNTY

VILLAGE OF CROOKSVILLE

WATER SYSTEM IMPROVEMENTS
WATERLINE REPLACEMENT

DESIGN	DRAFT	CHECK
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IBI GROUP NO.: 14-057

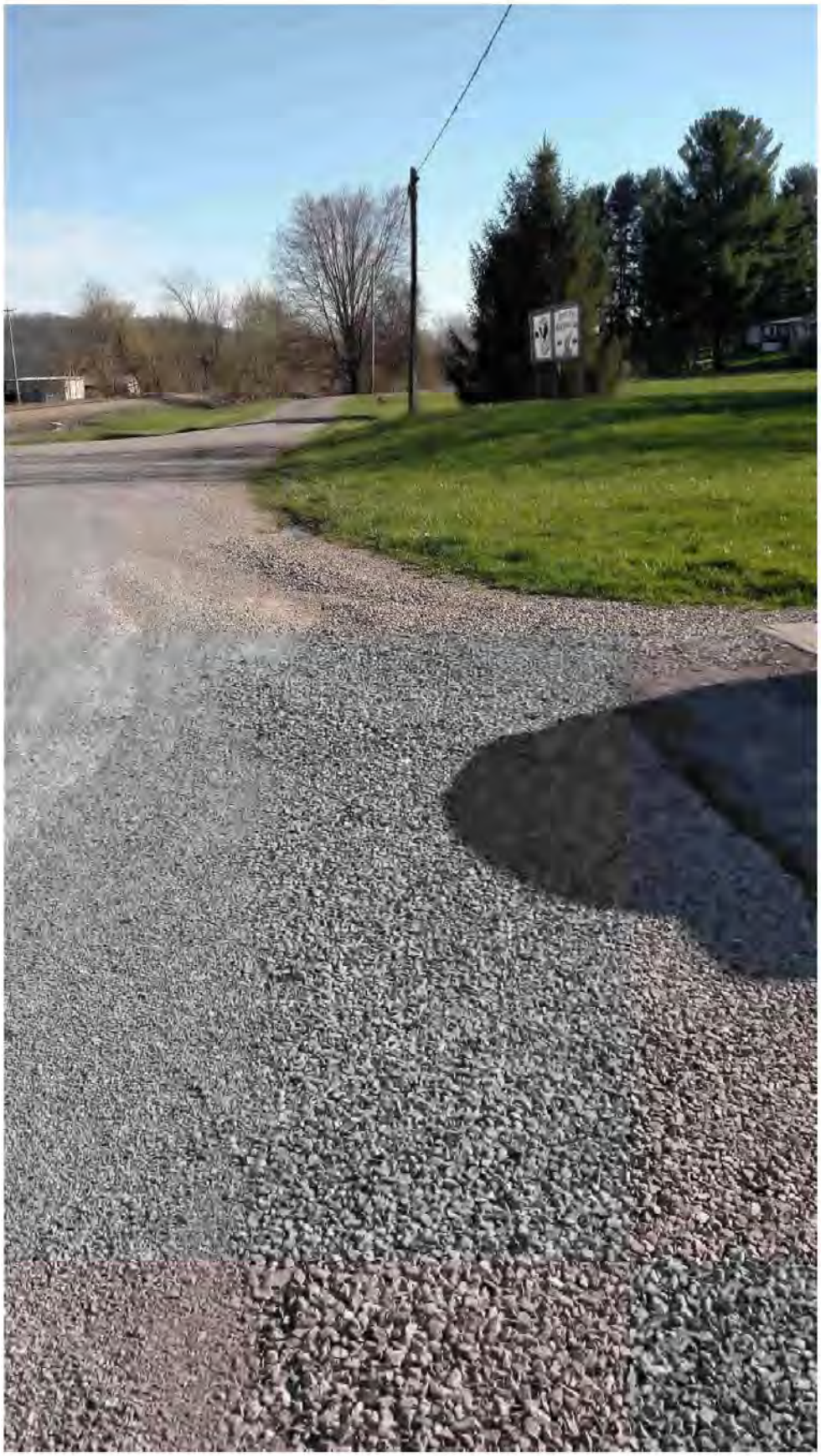
DATE: OCTOBER 2015

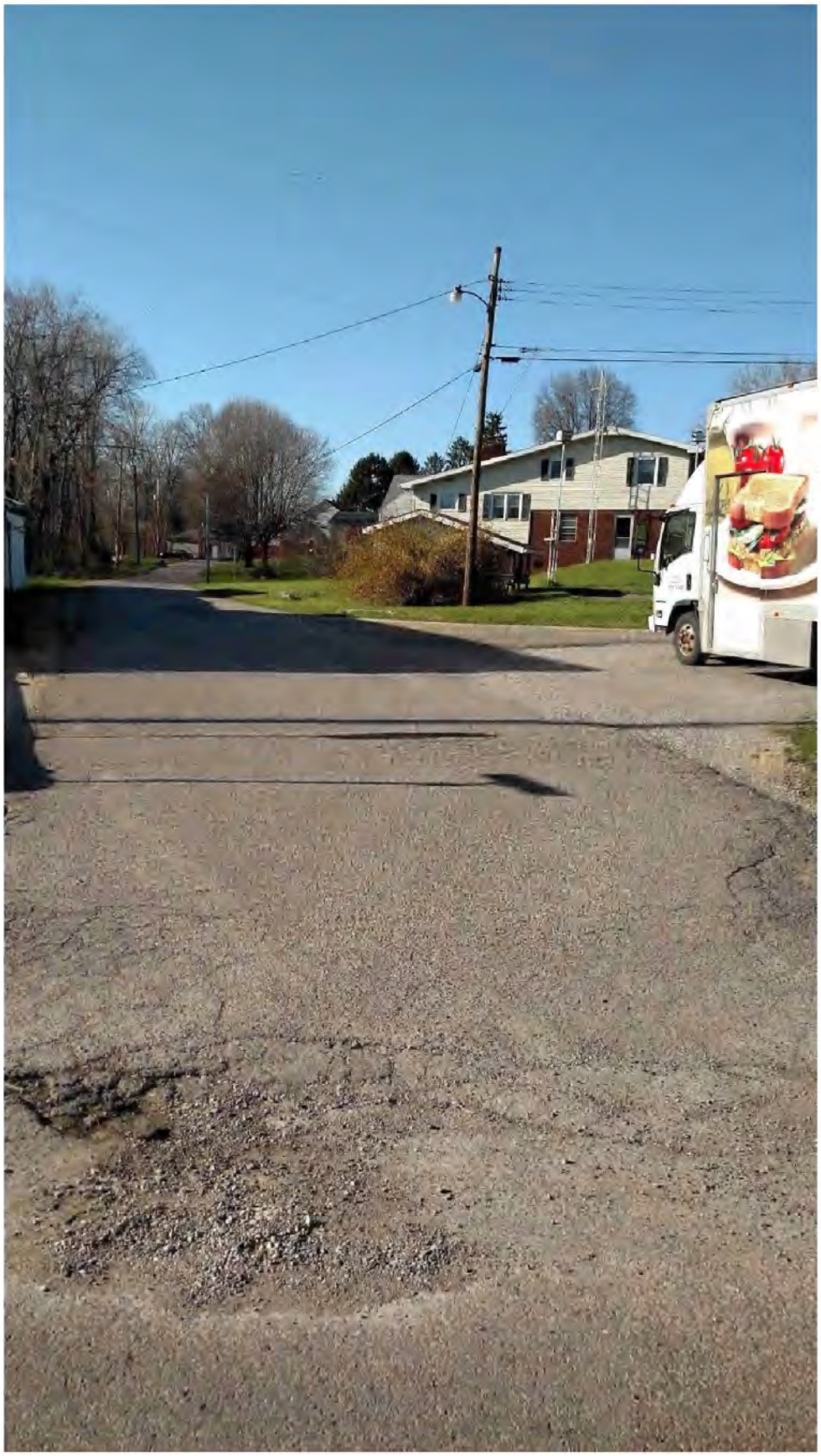
SCALE:
HORIZONTAL: 1" = 400'
VERTICAL: N/A

SHEET TITLE:

INDEX MAP

SHEET NO.: 3





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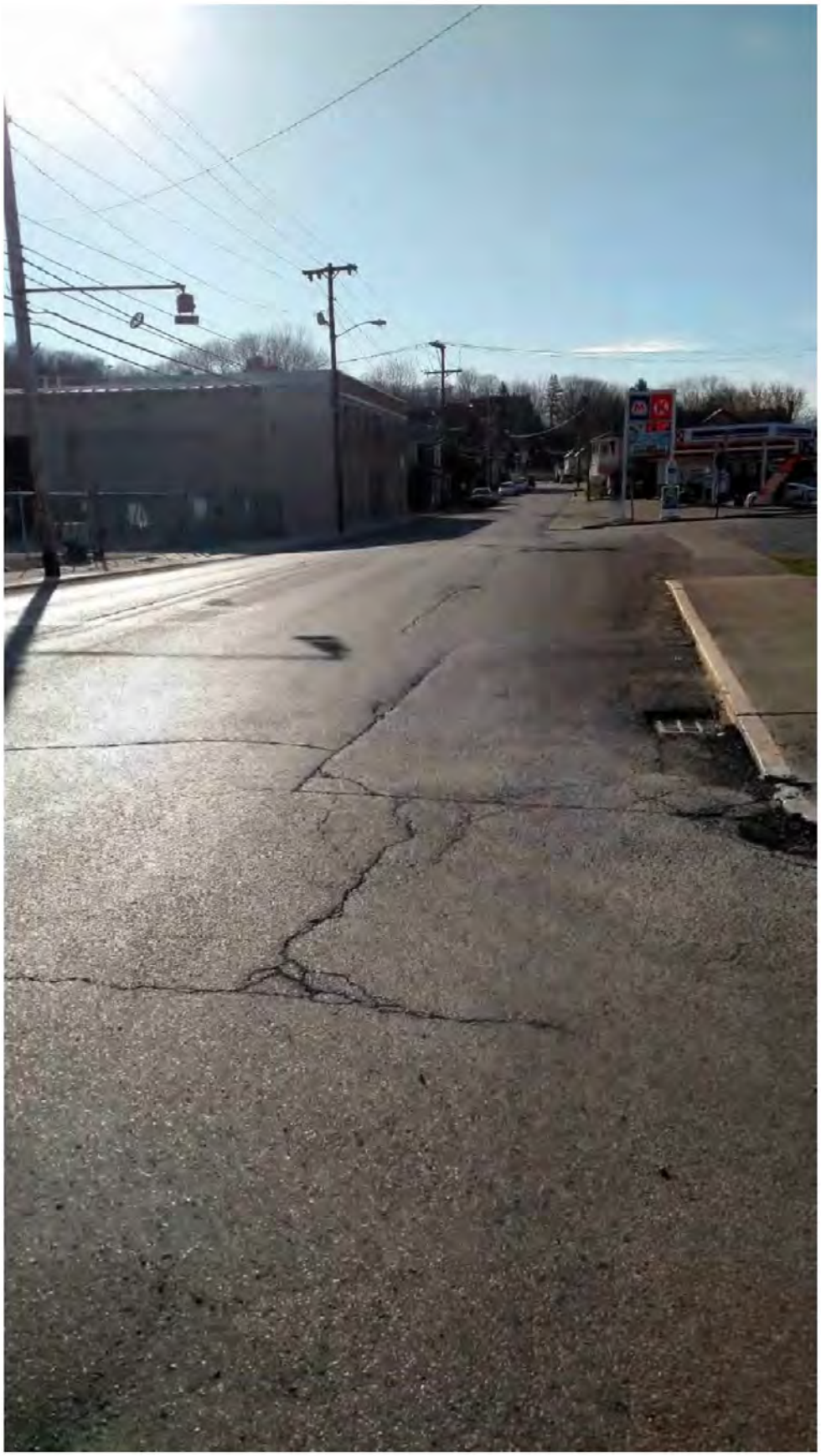
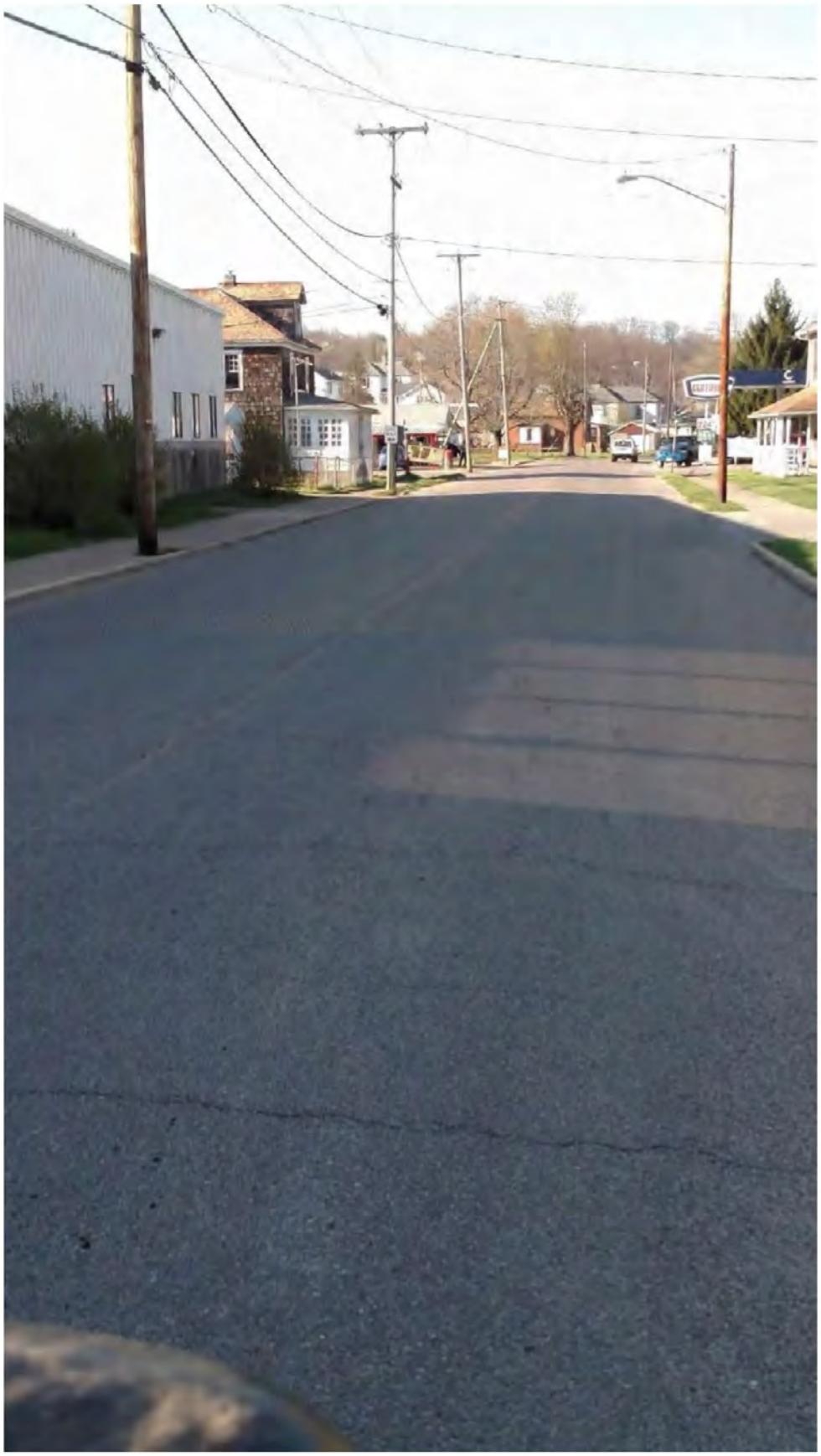
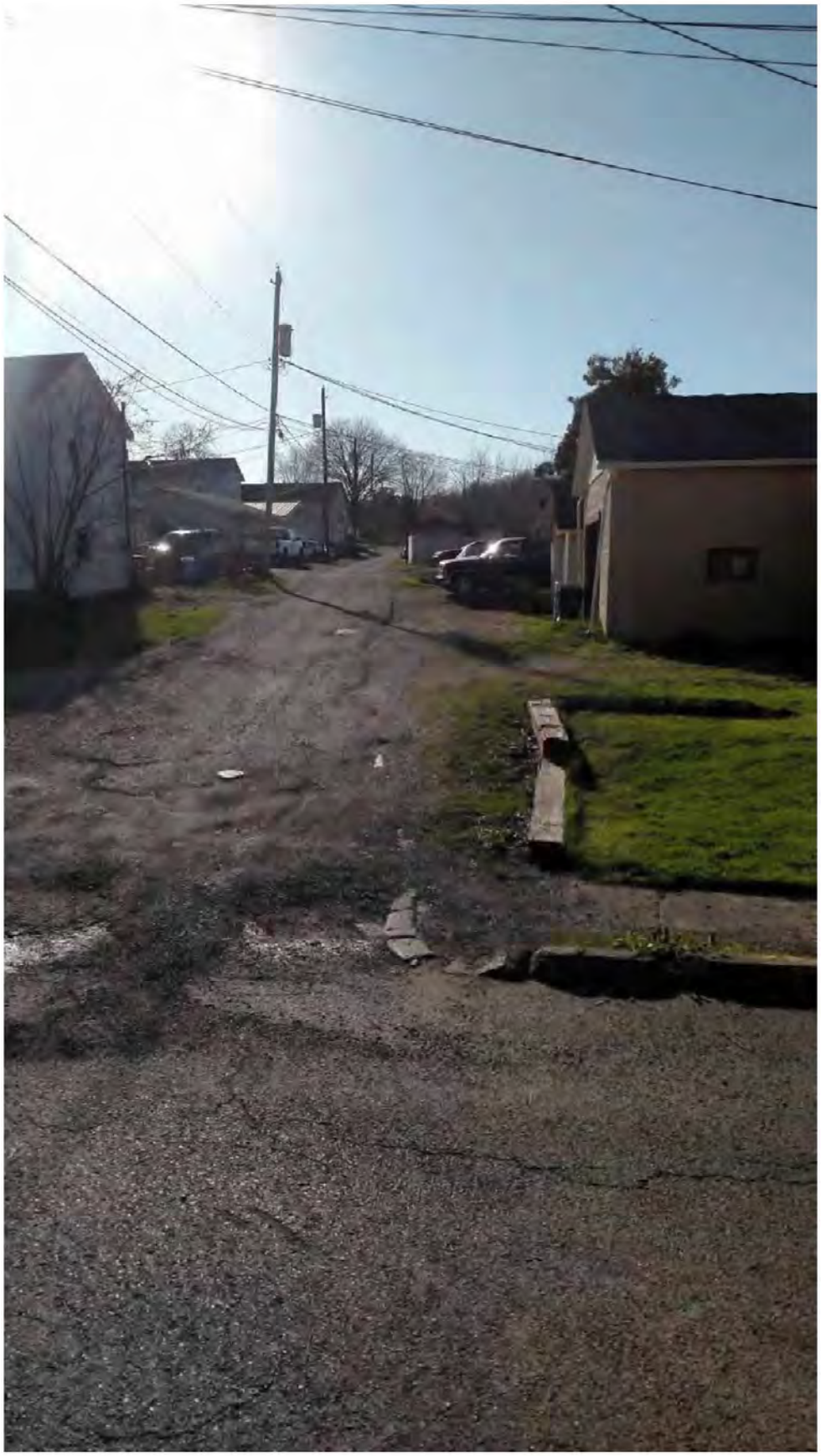
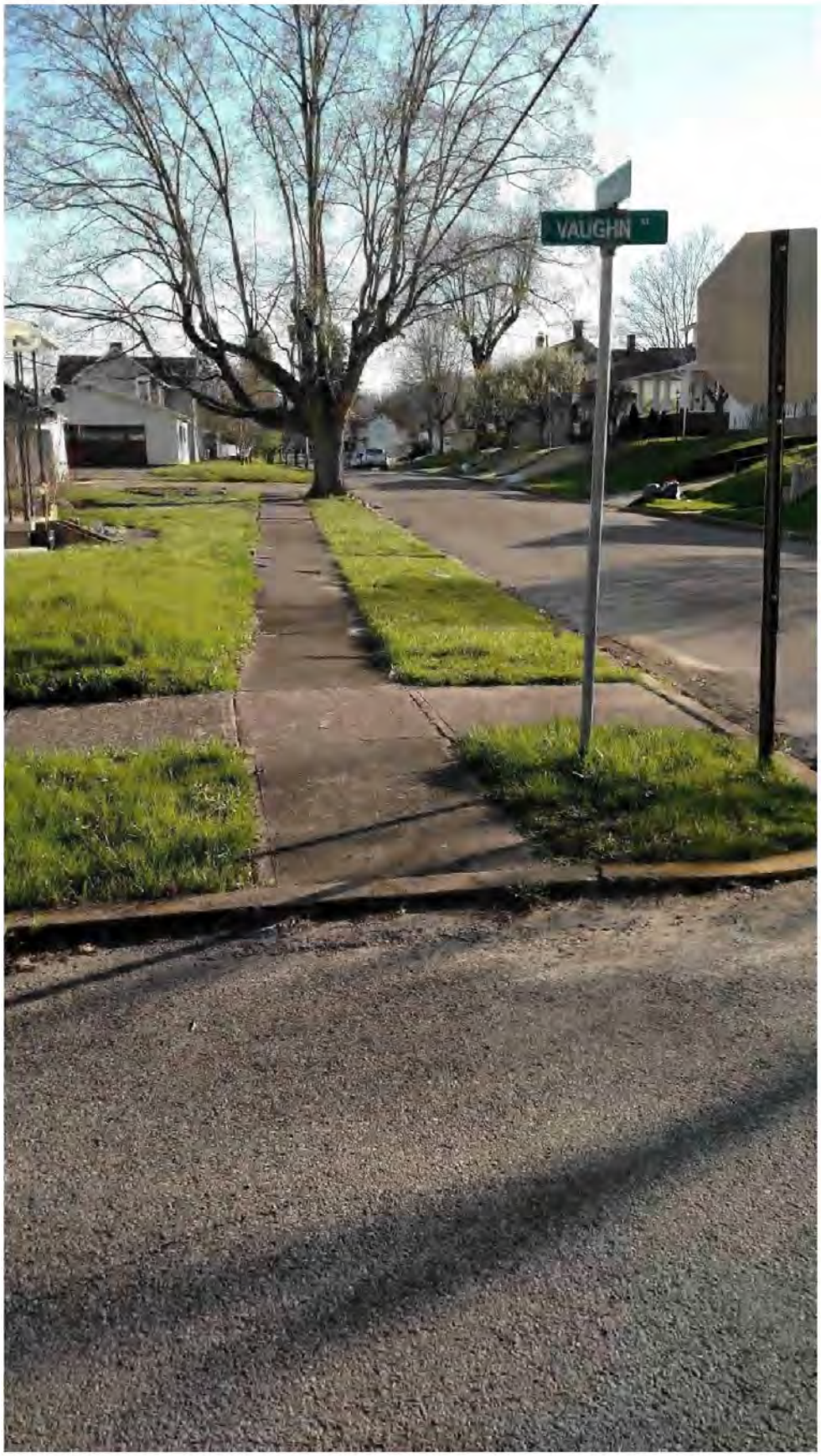






RUFFS
MARKET
239
VAUGHN
25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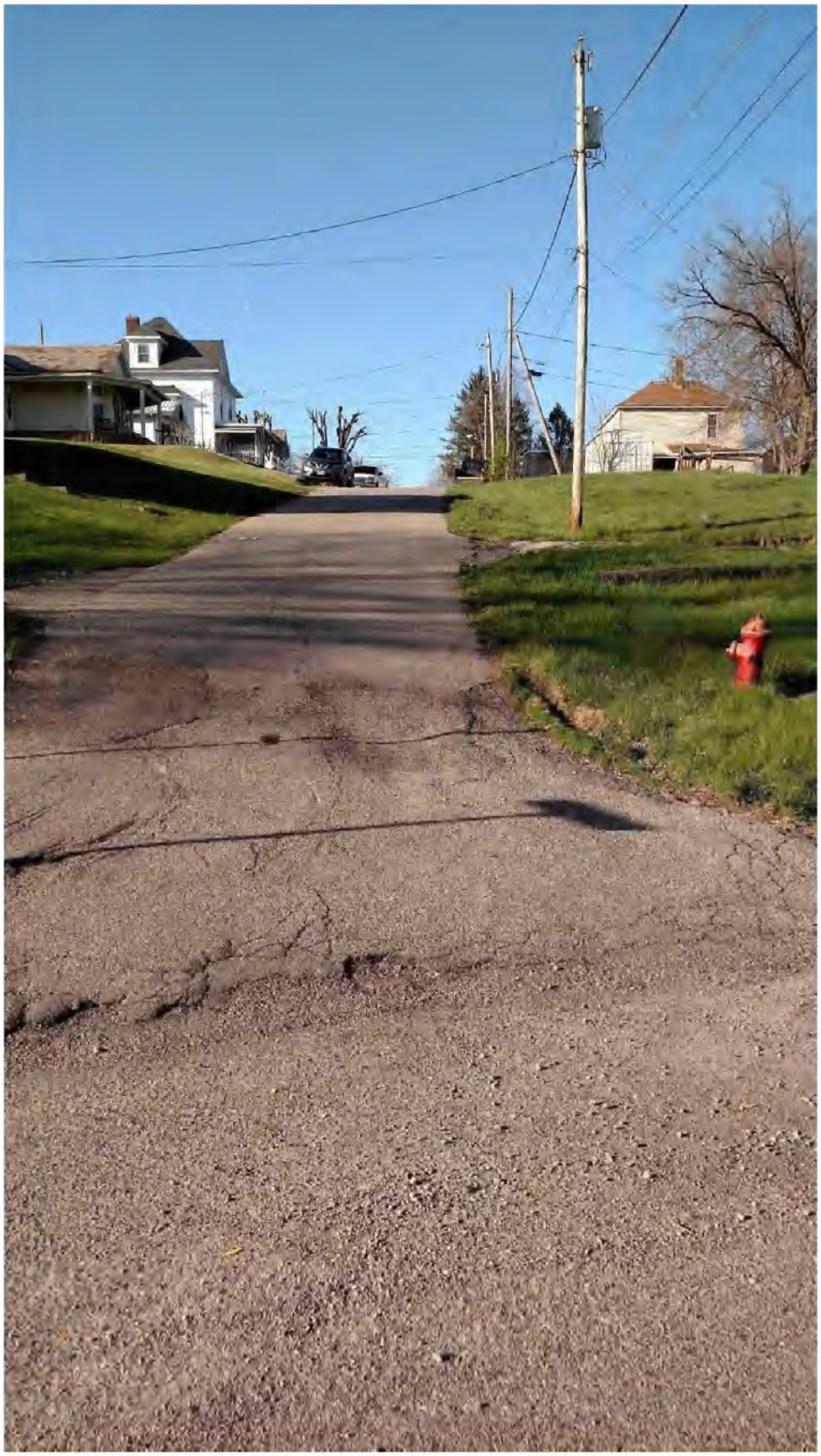
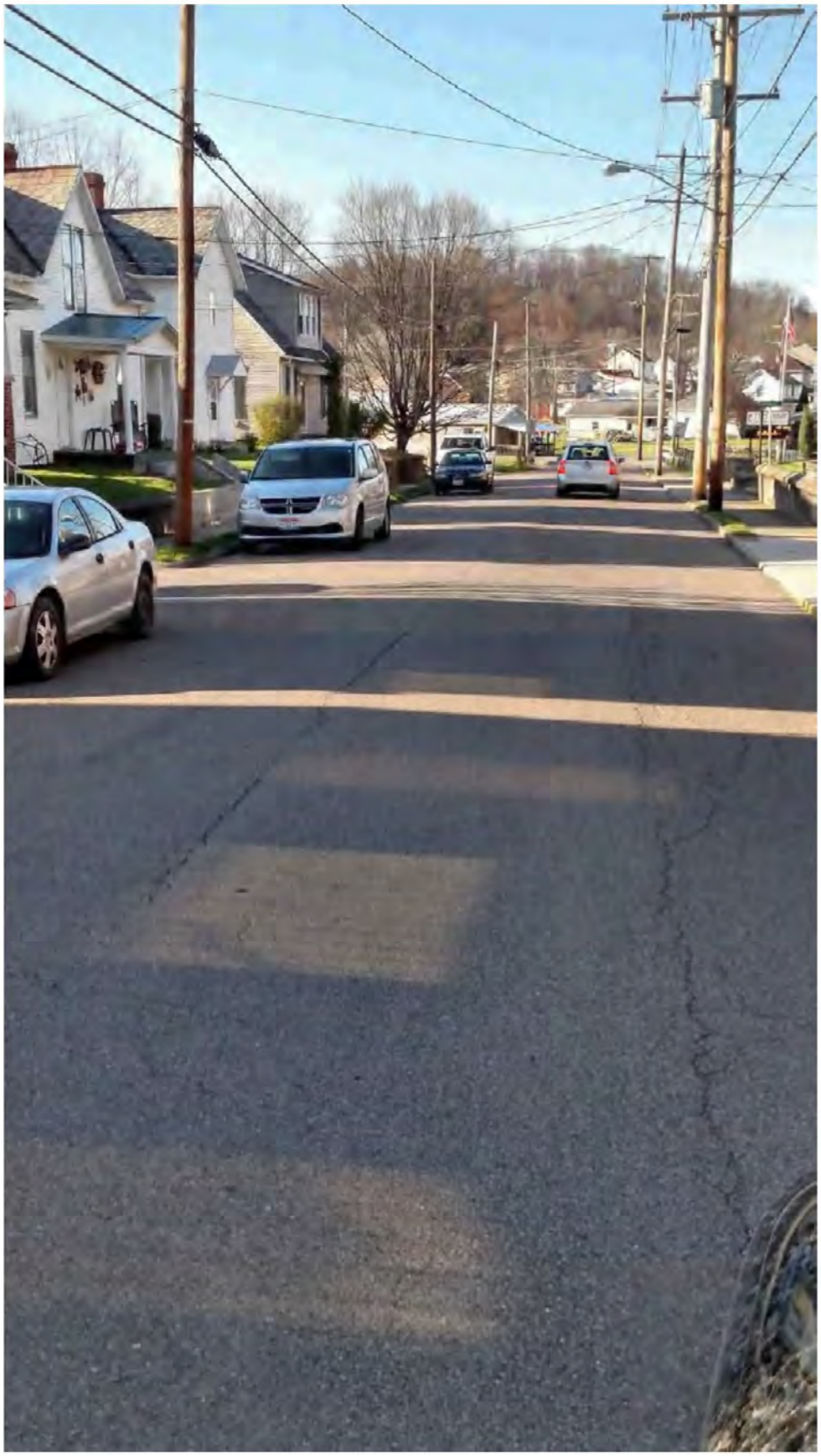
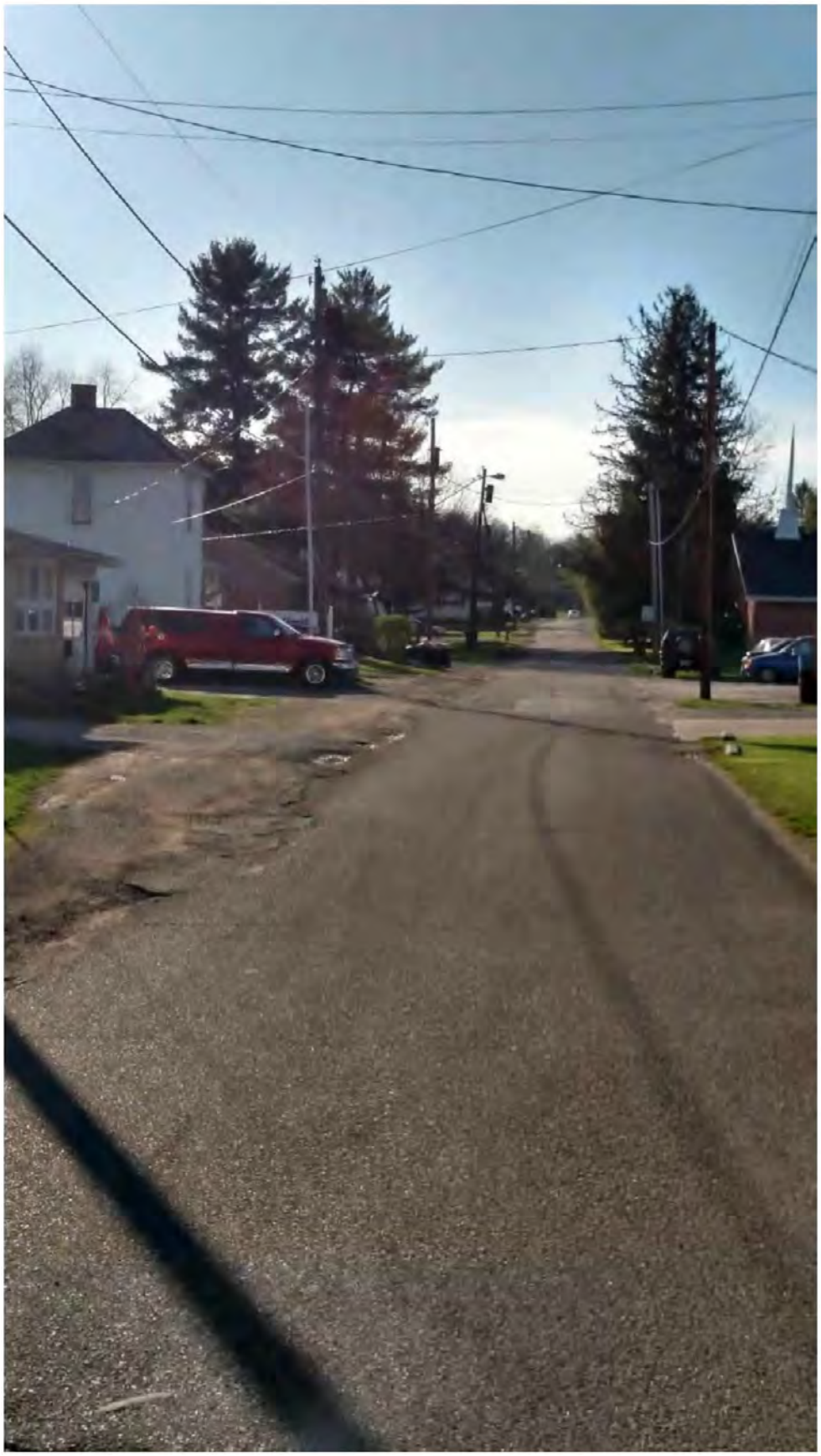
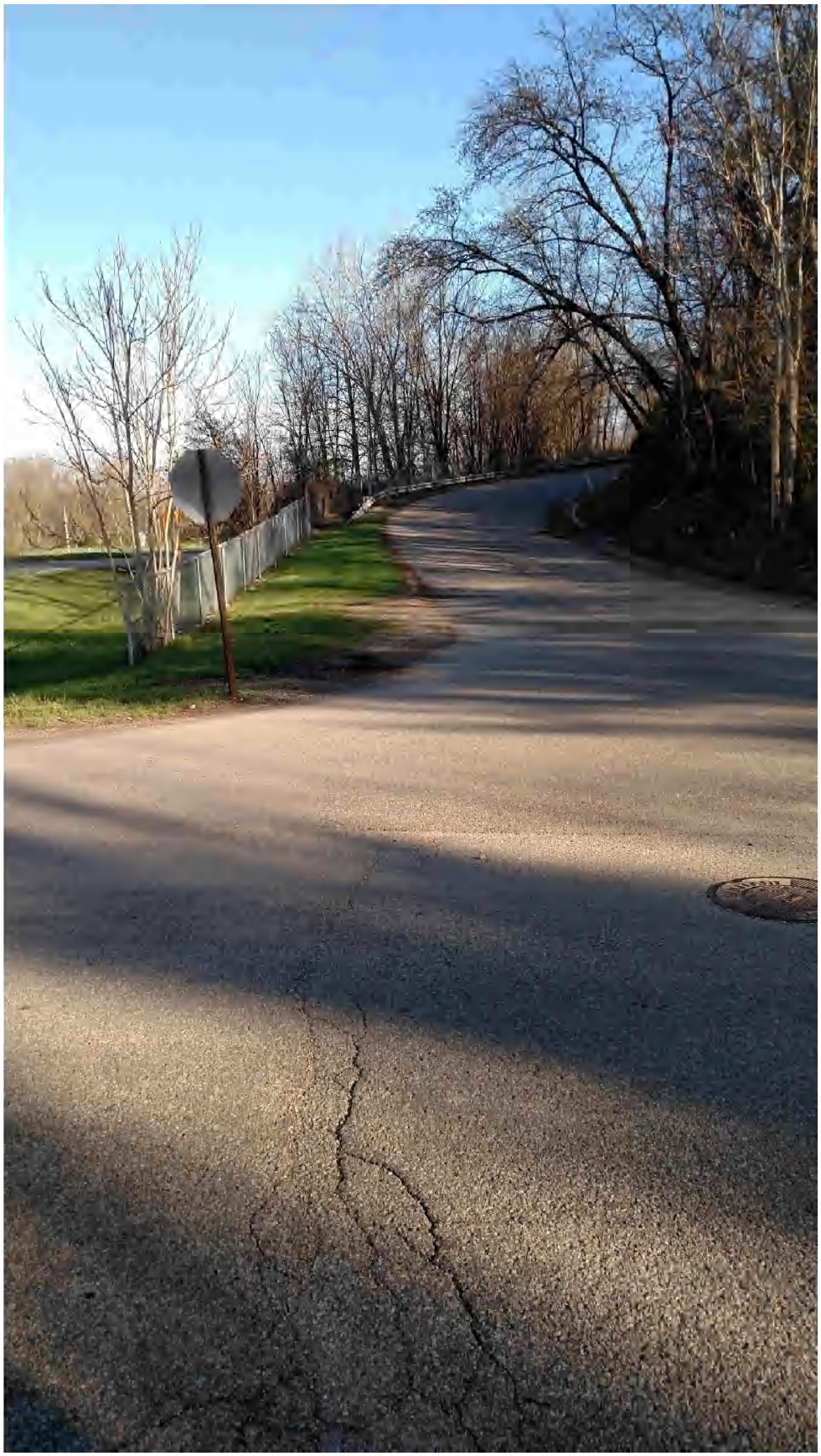








NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

Provisionally Accredited Levee Notes to Users: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent-annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection for areas on this panel. To maintain accreditation, the levee owner or community is required to submit the data and documentation necessary to comply with Section 65.10 of the NFIP regulations by September 03, 2010. If the community or owner does not provide the necessary data and documentation or if the data and documenation provided indicate the levee system does not comply with Section 65.10 requirements, FEMA will revise the flood hazard and risk information for this area to reflect de-accreditation of the levee system. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA Website at http://www.fema.gov/business/nfip/index.shtm.

The **projection** used in the preparation of this map was Ohio State Plane South Zone (FIPS zone 3402). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713- 3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was provided by the Ohio Statewide Imagery Program 2009.

The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

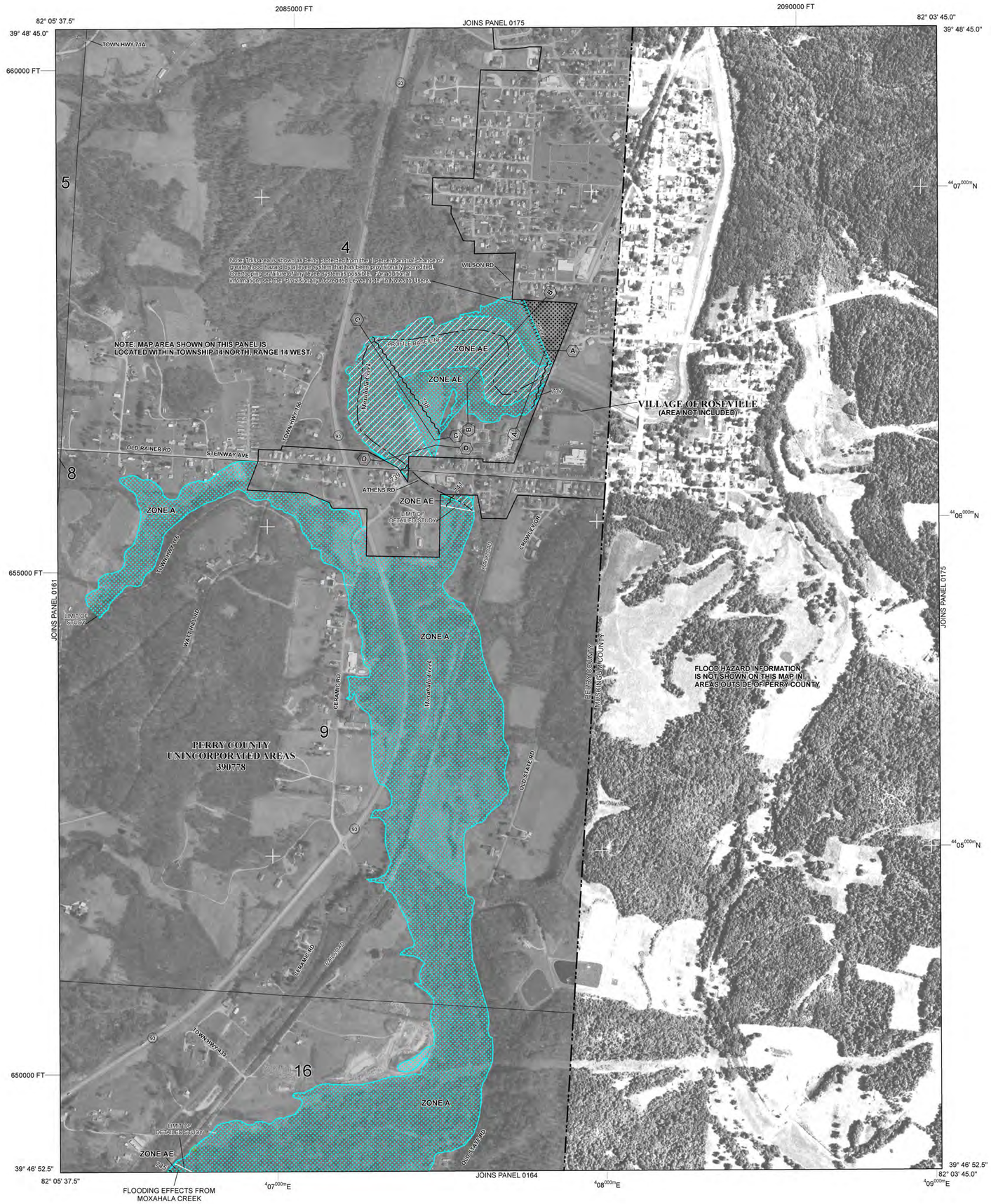
Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on the map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center (MSC)** via the FEMA Map Information eXchange (FMIX) at 1-877-336-2627 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. The MSC may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% Annual Chance Floodplain Boundary
	0.2% Annual Chance Floodplain Boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

(A)———(A)	Cross section line
(23)- - - - -(23)	Transect line
45° 02' 08", 93° 02' 12"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
3100000 FT	5000-foot ticks: Ohio State Plane South Zone (FIPS Zone 3402), Lambert Conformal Conic projection
$^{49}89^{000m}$ N	1000-meter Universal Transverse Mercator grid values, zone 17
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
April 18, 2011

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0162D

FIRM

FLOOD INSURANCE RATE MAP

PERRY COUNTY, OHIO AND INCORPORATED AREAS

PANEL 162 OF 375

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
PERRY COUNTY	390778	0162	D

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
39127C0162D

EFFECTIVE DATE
APRIL 18, 2011

Federal Emergency Management Agency

NOTES TO USERS

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The **projection** used in the preparation of this map was Ohio State Plane South Zone (FIPS zone 3402). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

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NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713- 3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was provided by the Ohio Statewide Imagery Program 2009.

The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on the map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

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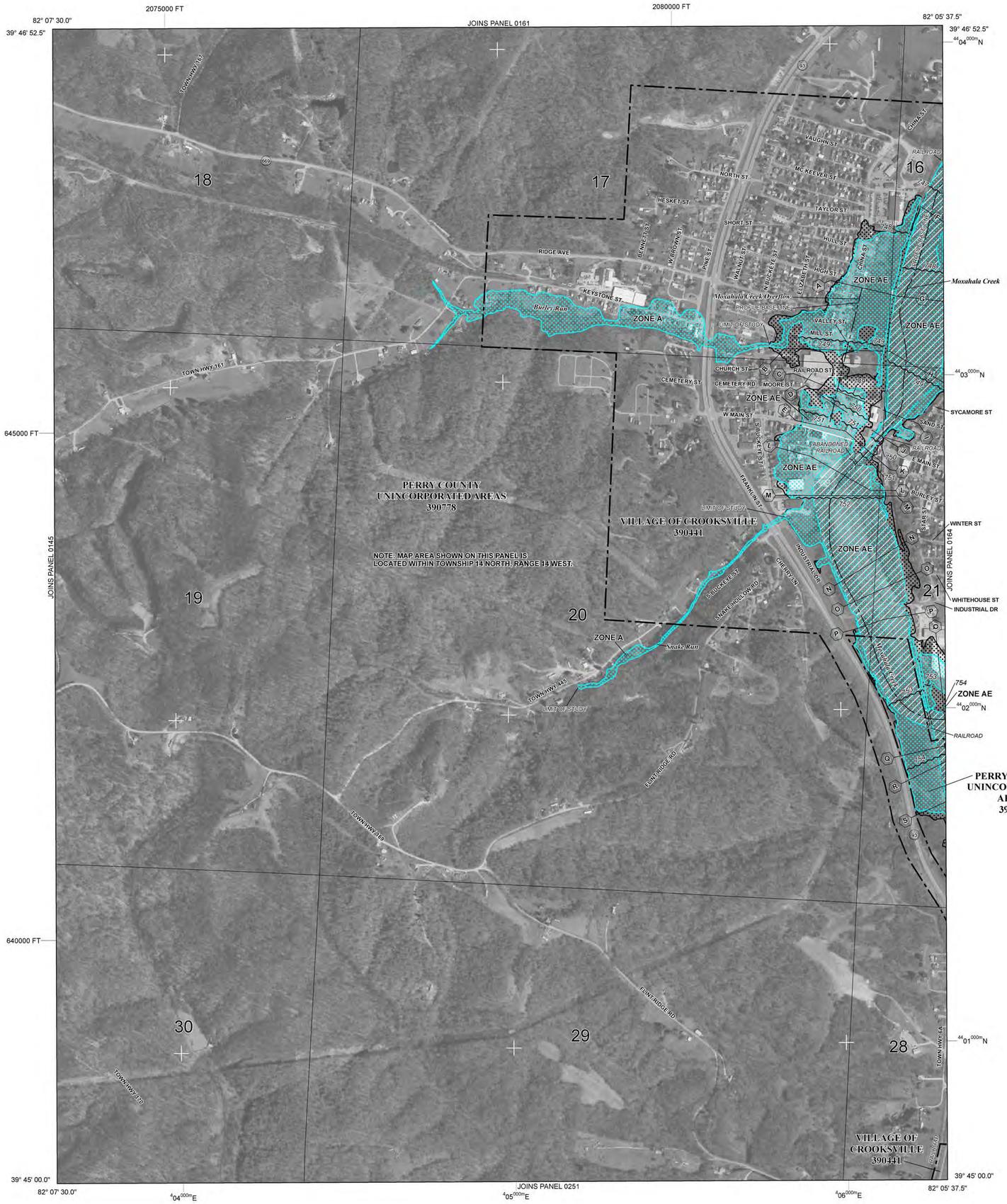
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center (MSC)** via the FEMA Map Information eXchange (FMIX) at 1-877-336-2627 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. The MSC may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% Annual Chance Floodplain Boundary

0.2% Annual Chance Floodplain Boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

(A)———(A)	Cross section line
(23)- - - - -(23)	Transect line
45° 02' 08", 93° 02' 12"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
3100000 FT	5000-foot ticks: Ohio State Plane South Zone (FIPS Zone 3402), Lambert Conformal Conic projection
$^{49}89^{000m}$N	1000-meter Universal Transverse Mercator grid values, zone 17
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
April 18, 2011

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0163D

FIRM

FLOOD INSURANCE RATE MAP

PERRY COUNTY, OHIO AND INCORPORATED AREAS

PANEL 163 OF 375

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CROOKSVILLE, VILLAGE OF	390441	0163	D
PERRY COUNTY	390778	0163	D

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
39127C0163D

EFFECTIVE DATE
APRIL 18, 2011

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

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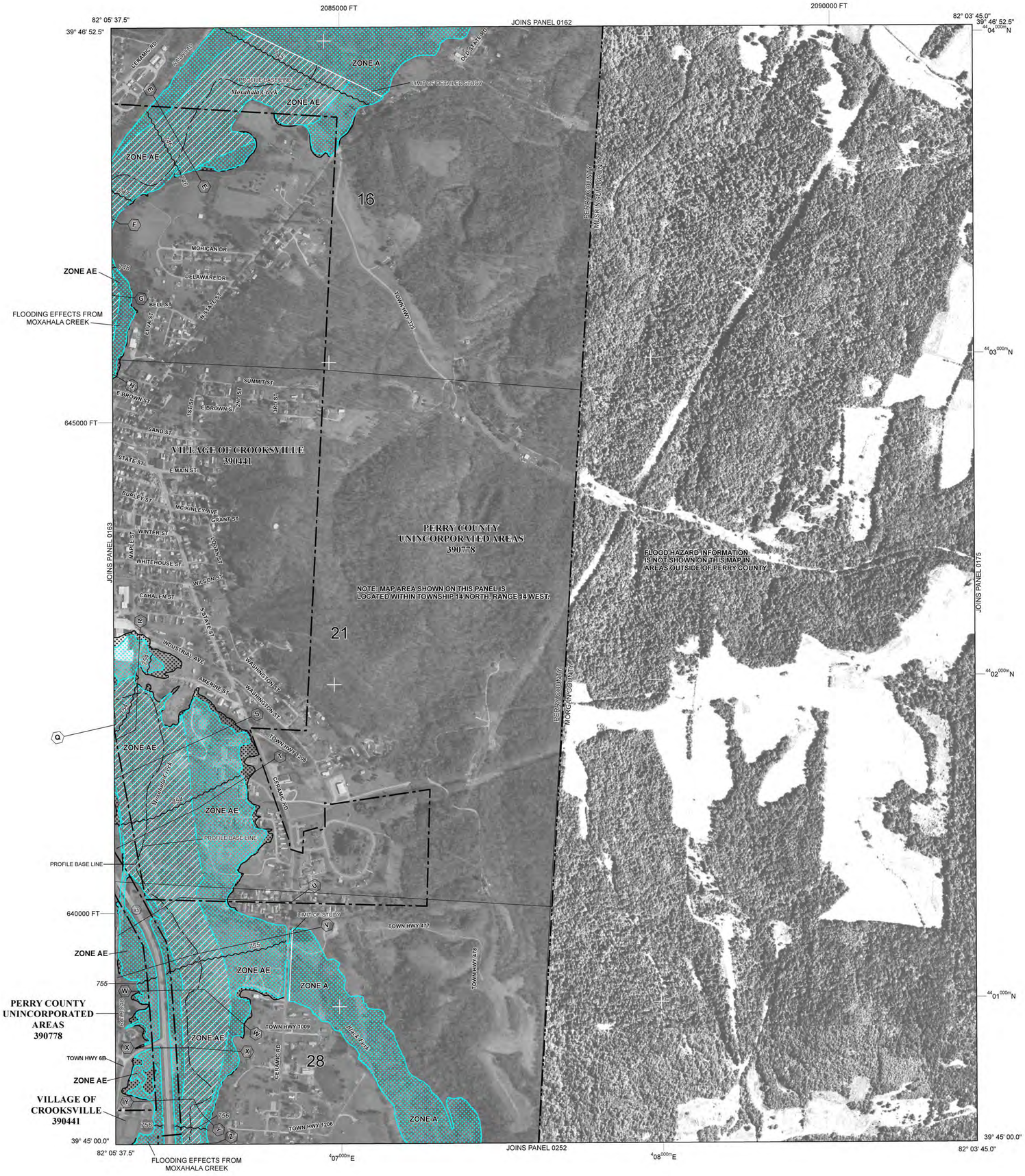

LEGEND

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ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
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OTHERWISE PROTECTED AREAS (OPAs)

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	0.2% Annual Chance Floodplain Boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A — A	Cross section line
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3100000 FT	5000-foot ticks: Ohio State Plane South Zone (FIPS Zone 3402), Lambert Conformal Conic projection
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DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
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FLOOD INSURANCE RATE MAP
April 18, 2011

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250 0 500 1000 FEET
150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0164D

FIRM

FLOOD INSURANCE RATE MAP

PERRY COUNTY, OHIO AND INCORPORATED AREAS

PANEL 164 OF 375

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CROOKSVILLE, VILLAGE OF	390441	0164	D
PERRY COUNTY	390778	0164	D

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
39127C0164D

EFFECTIVE DATE
APRIL 18, 2011

Federal Emergency Management Agency

Appendix B

Agency Correspondence

OHIO HISTORY CONNECTION

In reply to
2016-PER-36105

RECEIVED
SEP 12 2016
OHIO EPA - DEFA

September 2, 2016

Dan Halterman
Ohio EPA - DEFA
PO Box 1049
Columbus OH 43216

Dear Mr. Halterman:

Re: Crooksville Water System Improvements, Perry County, Crooksville, Ohio.

This is in response to correspondence, received on August 8, regarding the Crooksville Water System Improvements project. My comments are in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended and the associated regulations at 36 CFR Part 800.

The project consists of the construction of 60,000 feet of waterline replacement and a new water storage tank. Included with the correspondence was the report, *A Phase I Archaeological Survey for the Village of Crooksville's Water System Improvements Project in Harrison Township, Perry County, Ohio* (Weller 2016). The report only documents 4,435 ft for the water lines and 0.15 acre for the proposed storage tank. The remainder of the project area was not surveyed due to the location within the street right-of-ways. No archaeological deposits were identified during this investigation.

Based on the information submitted, it is my opinion that the proposed undertaking will have no adverse effect on properties listed or eligible for listing on the National Register of Historic Places. No further coordination is necessary unless the project changes or archaeological remains are discovered during the course of the project. In such a situation, this office should be contacted as per 36 CFR 800.13. Thank you for your cooperation.
f you have any questions, please contact me at (614) 298-2000, or via email at jbellvillemarrion@ohiohistory.org.

Sincerely,

Jennifer Bellville-Marrion, Project Reviews Coordinator
Resource Protection and Review

Ser. 1064707

UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / Fax (614) 416-8994

February 23, 2016

Daniel Halterman
Ohio Environmental Protection Agency - DEFA
50 West Town Street, Suite 700
Columbus, Ohio 43216-1049

TAILS# 03E15000-2016-I-0673

Re: Crooksville Water System Improvements, FS390292-0002, Perry County, Ohio

Dear Mr. Halterman,

We have received your recent correspondence regarding the above-referenced project. You have requested concurrence with your determination of effects to federally listed species, pursuant to section 7(a)(2) of the Endangered Species Act of 1973, as amended (ESA).

In order to minimize impacts to the federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened northern long-eared bat (*Myotis septentrionalis*), the project proponent will conduct clearing of trees ≥3 inches diameter at breast height only from October 1 – March 31. The Service has reviewed your project description and concurs with your determination that the project, as proposed, is not likely to adversely affect the Indiana bat or northern long-eared bat.

This concludes consultation on this action as required by section 7(a)(2) of the ESA. Should, during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be reinitiated to assess whether the determinations are still valid.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,

Dan Everson
Field Supervisor

PERRY SOIL & WATER CONSERVATION DISTRICT
109-A E. Gay Street PO Box 337 Somerset, Ohio 43783
Phone (740) 743-1325 Fax (740) 743-3830 Website: www.perryswcd.org

Sept 12, 2016

Alan Brown, PE
Project Manager
IBI GROUP
5085 Tile Plant Road
New Lexington OH 43783

Re: Village of Crooksville (IBI project #14-057)

Mr. Brown.

With the information you provided on the IBI Project #14-057, Village of Crooksville, Water Systems Improvement Project, and its identified location of the project being located and having portions within the 100 year flood plain as determined by FEMA.

Even though the project does have components within the FEMA identified regulated flood plain, The proposed activity of waterline installation will not adversely impact the flood fringe area of the floodplain, and will not adversely reduce the capacity of the Flood Plain or create public safety issues in the event of a flood. Therefore, as the local Designated Floodplain Administrator, for Perry County and the village of Crooksville, I find your project to be in compliance with our regulations, and there is no need to submit a flood plain development permit.

If you have any questions or need additional information, feel free to contact me at our local office.

Thank you,

Benjamin Carpenter, CFM
Program Administrator, Perry SWCD
Flood Plain Administrator, Crooksville

Appendix C

Surface Water Determination Study

HULL | JHA

April 7, 2017

Mayor Fred Redfern
Village of Crooksville
98 S. Buckeye Street
Crooksville, Ohio 43731

RE: Surface Water Determination for the Village of Crooksville Waterline Project Located in Crooksville, Perry County, Ohio; VCR003.0001.

Dear Mr. Redfern:

Jobes Henderson & Associates, Inc. (JHA, a wholly-owned subsidiary of Hull & Associates, Inc.) is pleased to present the results of a surface water determination study performed for the Village of Crooksville Water System Improvement Project along three segments of a proposed pipeline corridor in Perry County, Ohio (Project Corridor; Figure 1). On April 3, 2017, an Ecologist from JHA conducted fieldwork associated with the surface water determination within the proposed Project Corridor. The purpose of this surface water determination is to map the approximate location and extent of wetlands, streams and other potentially jurisdictional surface waters identified through a desktop analysis of readily available secondary source data, supplemented by a brief but thorough field investigation. Impacts to identified jurisdictional resources may be regulated under federal and state law.

The Project Corridor extends a total of approximately 4,435 feet in length and 30 feet in width and is comprised of three (3) separate corridor segments (Project Corridors A, B and C), as presented in Figure 1. Project Corridor A (Line W-26) begins on the northern side of Crooksville on the eastern side of China Street and extends to the southeast, crosses Moxahala Creek, and ends on the northwestern corner of Mohican Drive. Project Corridor B (Line E-27 and the Tank and Tank Line), located south of Project Corridor A, begins at the eastern end of Grant Street and extends to the east near the existing water tank. Project Corridor C (Line S-1), located south of Project Corridor B, begins on the northwestern side of the State Route 93/669 north of the railroad bridge and extends to the south along the western side of Tunnel Hill Road, and terminates on a private drive, southwest of the intersection of School Drive and Tunnel Hill Road. The approximate center points of the Project Corridors are located at the following latitude/longitude coordinates, Project Corridor A: 39.777144°N/-82.093671°, Project Corridor B: 39.767464°N/-82.088657°W, and Project Corridor C - 39.754234°N/-82.09383°W (Figure 1).

Methods

Prior to conducting the field investigation, JHA compiled and reviewed secondary source information that was used for screening and planning purposes. Secondary source information included, but was not limited to, the following: U.S. Geological Survey (USGS) topographic maps, recent aerial photography; National Wetlands Inventory (NWI) map, and the Natural Resources Conservation Service (NRCS) soils map (Figure 2). On April 3, 2017, a JHA Ecologist performed an on-Site determination of surface waters, including wetlands and streams.

The surface water determination survey consisted of walking the Project Corridors to verify areas where secondary source information and general field conditions suggested the possible presence of wetlands and streams. JHA preliminarily tested for the presence of field indicators of wetland hydrology, hydric soils, and wetland plant communities pursuant to the methods outlined in the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual (Manual) and the 2012 Regional Supplement to the Manual for the Eastern Mountains Piedmont; upland data forms are presented in Attachment B. JHA also visually inspected the periphery of the Project Corridor.

Professional judgment (without quantification) was used to determine the presence of surface waters within

59 Grant Street Newark, Ohio 43055 Tel: 740.344.5451 Fax: 740.344.8659
www.jobeshenderson.com

the Project Corridors. The locations of identified surface water features are presented in Figure 3; photographs are included in Attachment A.

Results

JHA's Ecologist identified the following surface water resources, NRCS Perry County, Ohio soil survey soil map units, and habitat features within each of the respective Project Corridors:

Project Corridor A

One wetland (Wetland JA) and Moxahala Creek were identified within Project Corridor A. Wetland JA is a potentially jurisdictional Palustrine Forested (PFO) wetland, dominated by pin oak (*Quercus palustris*, FACW) and American sycamore (*Platanus occidentalis*, FACW).

Moxahala Creek is located to the east of the railroad tracks and Project Corridor A and crosses the creek at a right angle. Moxahala Creek is a perennial Relatively Permanent Waterway that flows to the northeast with clay and silt substrates.

The three soil map units located within Project Corridor A include: Newark silt loam, frequently flooded (Ne); Nolin silt loam, occasionally flooded (No); and Wellston silt loam, 8 to 15% slopes (WhC). Soil units Ne and Na are classified as non-hydric soils with hydric inclusions and soil unit WhC is classified as non-hydric.

The terrain of Project Corridor A includes a floodplain terrace on the western side of the corridor and it extends up a hill on the east side of the corridor. Upland habitats were characterized by facultative upland (FACU) and upland (UPL) plant species, comprising a plant community atypical of wetlands. The park and yard habitat type is located in the western portion of Project Corridor A, west of Moxahala Creek and the railroad tracks, and is dominated by red fescue (*Festuca rubra*, FACU). The eastern side of Project Corridor A, adjacent to the eastern side of Moxahala Creek, is an upland riparian forested community dominated by black cherry (*Prunus serotina, FACU*) and silver maple (*Acer saccharinum*, FACW) in the overstory and multiflora rose (*Rosa multiflora*, FACU) in the understory. A riparian depressional area is located south of the existing Columbia Gas line, adjacent to Moxahala Creek and JHA observed standing water in this forested area. This portion of Project Corridor A has been identified as Wetland JA. The area east of Wetland JA exhibits a steep grade increase through an upland wooded area.

Project Corridor B

No surface water features were identified within Project Corridor B.

The two soil map units located within Project Corridor B include: Guernsey-Westmoreland silt loams 10 to 25% slopes (GwD) and Guernsey-Westmoreland silt loams (GwE), 25 to 40% slopes. Soil units GwD and GwE are classified as non-hydric soils.

The terrain of Project Corridor B includes a steep grade on the east side of the corridor which levels-off at the top of the hill into an open park and yard habitat type near the existing municipal water tank on the western side. The open park and yard habitat type is dominated by red fescue. The upland forested community is located along an existing access path on a steep grade within the western portion of the Project Area and is dominated by American beech (*Fagus grandifolia*, FACU) in the overstory and multiflora rose in the understory.

Project Corridor C

One unnamed tributary of Moxahala Creek (Stream J1) was identified within Project Corridor C. Stream J1, located in the southern portion of Project Corridor C, crosses the corridor at a right angle and flows to the east, with gravel and artificial (concrete conglomerate and asphalt) substrates.

The five soil map units located within Project Corridor C include: Alford silt loam, 1 to 8% slopes (AfB), Alford silt loam, 8 to 15% slopes (AfC); Enoch shaly clay loam, 20 to 40% slopes (EnE); Euclid silt loam, rarely flooded (EuA); Glenford silt loam, 1 to 8% slopes (GnB); and Newark silt loam, frequently flooded (Ne). Soil units EnA, EuE, GnB and Ne are classified as non-hydric soils with hydric inclusions and soil units AfB, AfC are classified as non-hydric soils.

The terrain of Project Corridor C includes areas of low relief in the southern portion of the corridor and steep grades in the northern portion. The park and yard habitat type is located in the northern portion of Project Corridor C. This area is dominated by red fescue. The southern portion of Project Corridor C exhibits upland forested habitat dominated by oak and maple species.

Wetland and stream locations are presented in Figure 3 and soil map unit boundaries and are depicted in Figure 2.

Summary

One wetland (Wetland JA) and two streams (Moxahala Creek and Stream J1) are located within the Project Corridor and could be impacted by the development of these Project Corridors. Wetland JA and Moxahala Creek are located within Project Corridor A and Stream J1 is located within Project Corridor C. No surface water features were identified within Project Corridor B.

Thank you for the opportunity to provide this information. Please feel free to contact me with any questions.

Sincerely,

Jaclyn T. Haynal, WPIT, AWB®
Scientist II
Jobes Henderson & Associates, Inc.

CC: Hugh Crowell, PWS, Hull & Associates, Inc.

Attachments: Figures
Attachment A: Photo Log

FIGURES

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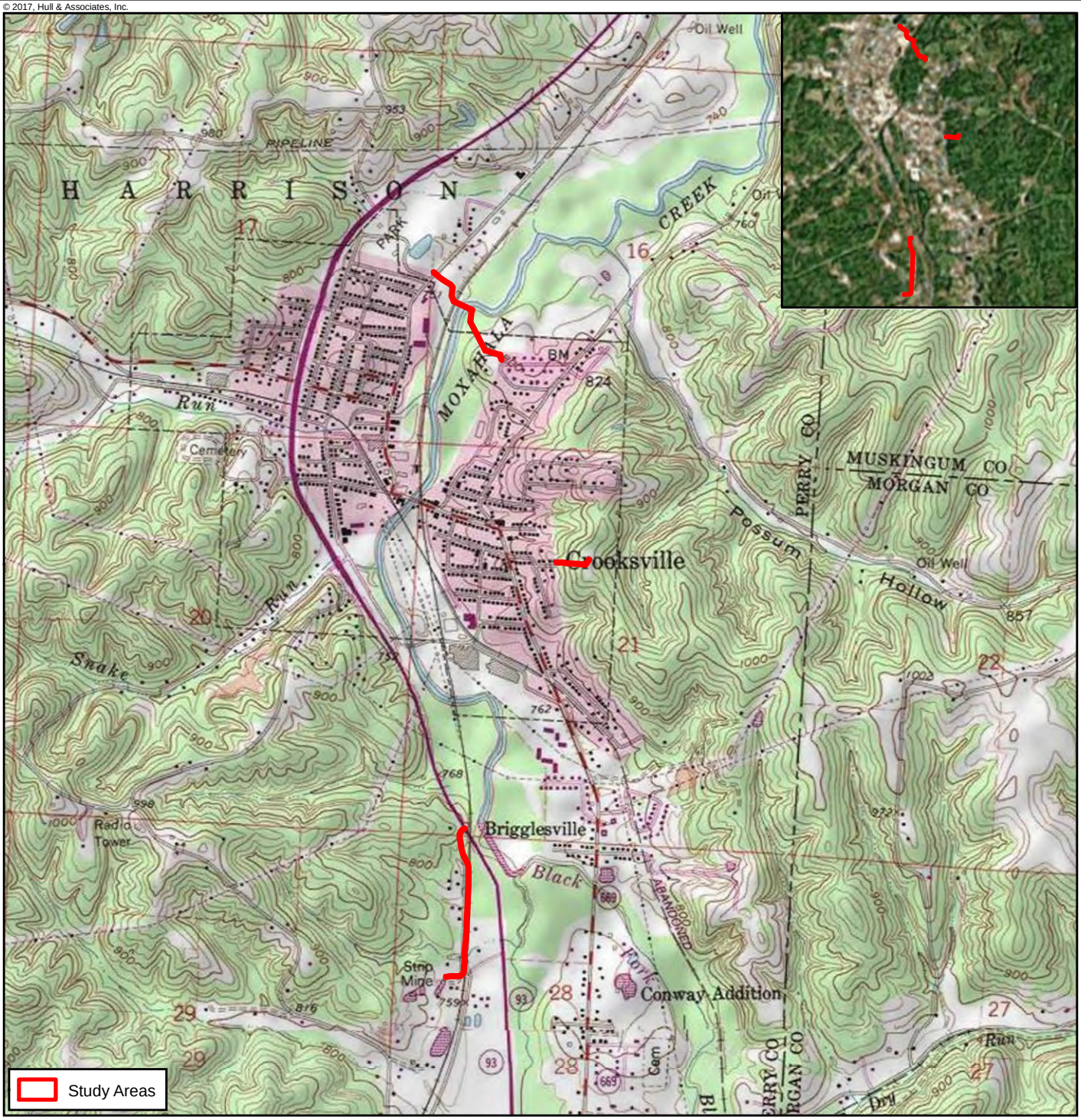

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0 500 1,000 2,000 Feet

1:24,000

Quad: Crooksville

Source: The topographic map was acquired through the USGS Topographic Map web service.

The aerial photo in the inset was acquired through the ESRI Imagery web service. Aerial photography dated 2015.

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Surface Water Determination

Site Location Map

Village of Crooksville, Perry County, Ohio

Date:

April 2017

File Name:
VCR003_01_Fig01_SLM.mxd

Edited: 4/7/2017 By: jhaynal

Figure

1

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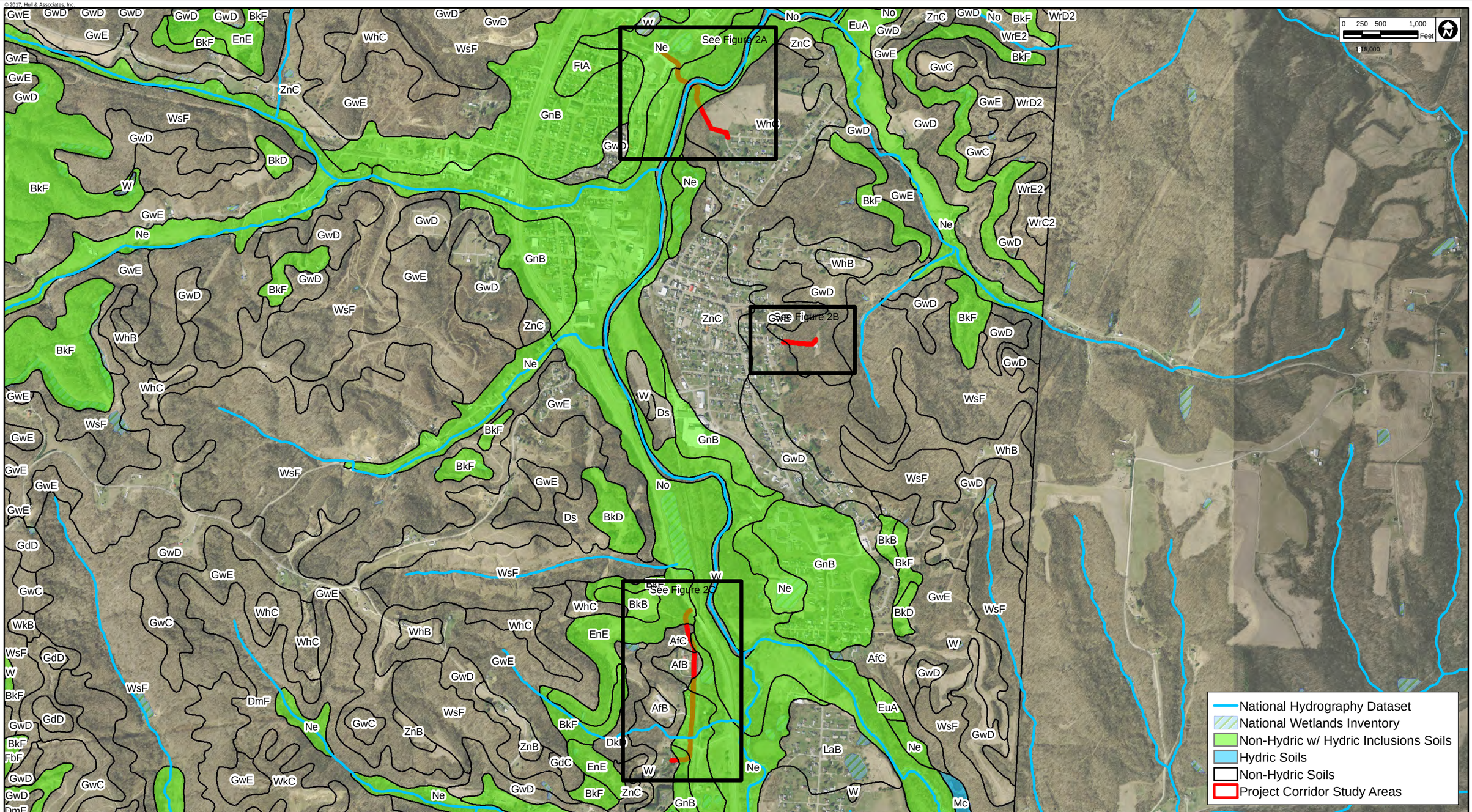

Notes:
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Surface Water Determination

National Wetlands Inventory, National Hydrography Dataset and Perry County Soil Survey Map

Village of Crooksville, Perry County, Ohio

Figure 2

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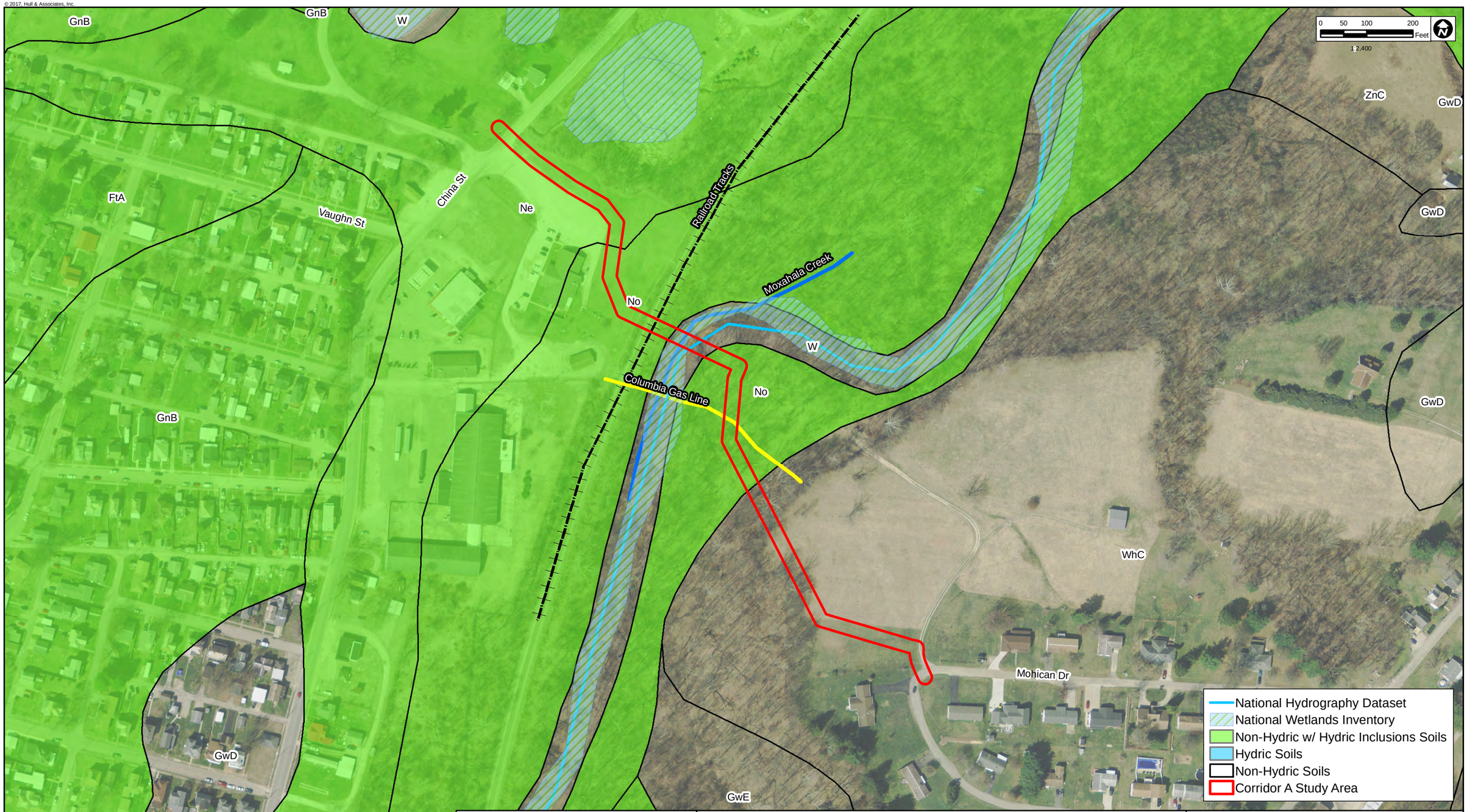

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Surface Water Determination

National Wetlands Inventory, National Hydrography Dataset and Perry County Soil Survey Map

Village of Crooksville, Perry County, Ohio

Figure 2A

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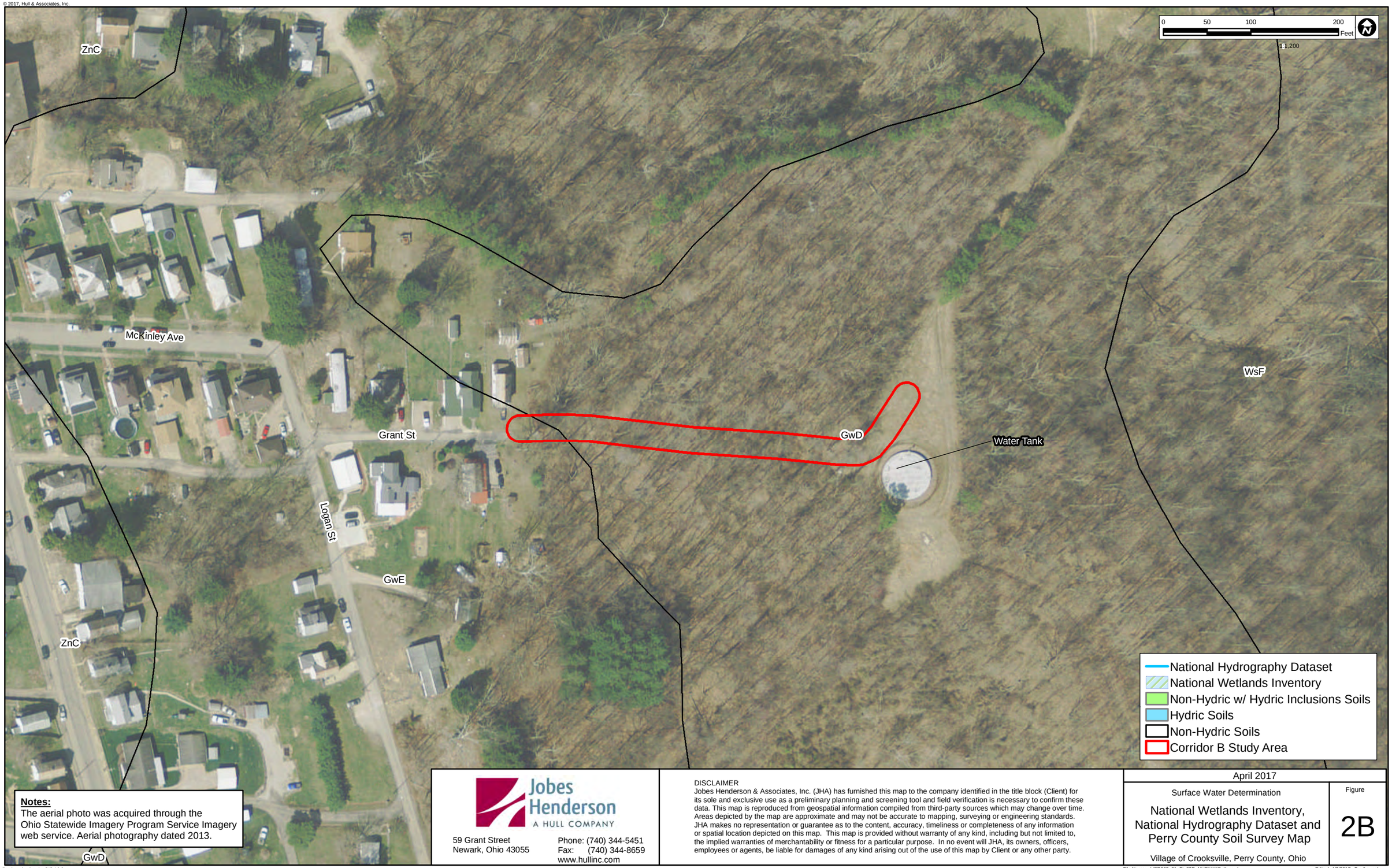

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Surface Water Determination

National Wetlands Inventory, National Hydrography Dataset and Perry County Soil Survey Map

Village of Crooksville, Perry County, Ohio

Figure

2B

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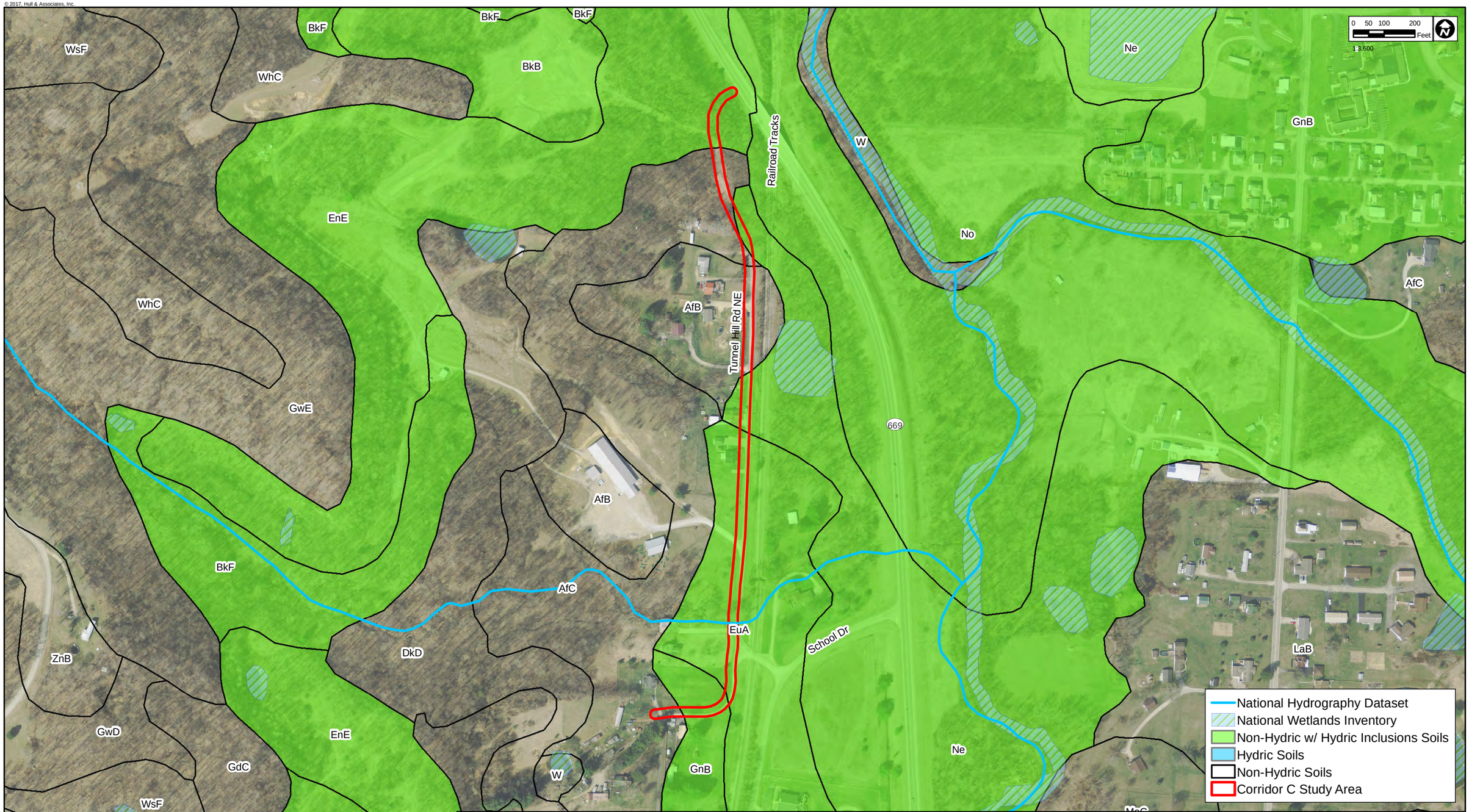

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Surface Water Determination

National Wetlands Inventory, National Hydrography Dataset and Perry County Soil Survey Map

Village of Crooksville, Perry County, Ohio

Figure

2C

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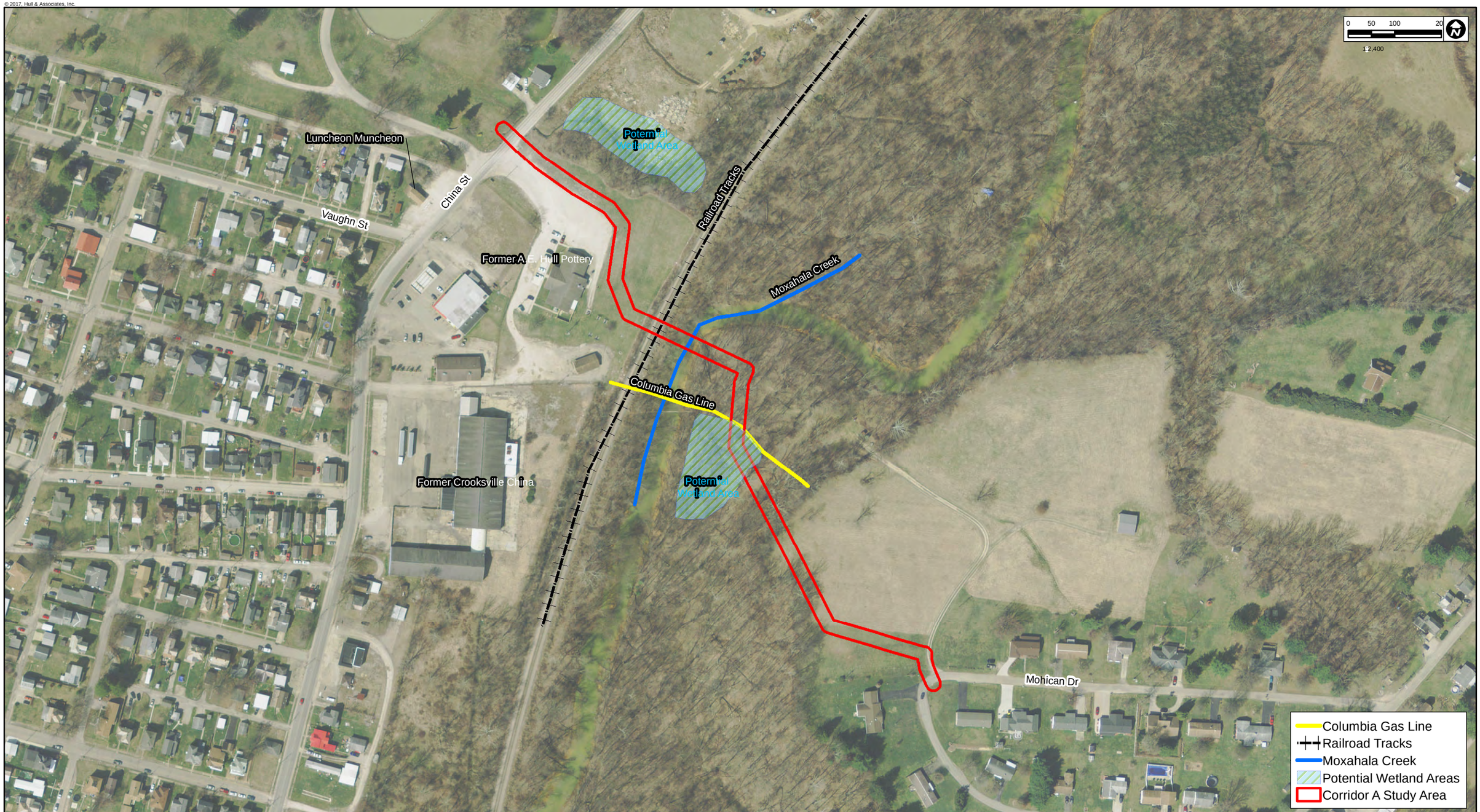

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Surface Water Determination

Surface Water Determination Map

Village of Crooksville, Perry County, Ohio

Figure

3A

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Surface Water Determination

Surface Water Determination Map

Village of Crooksville, Perry County, Ohio

Figure

3B

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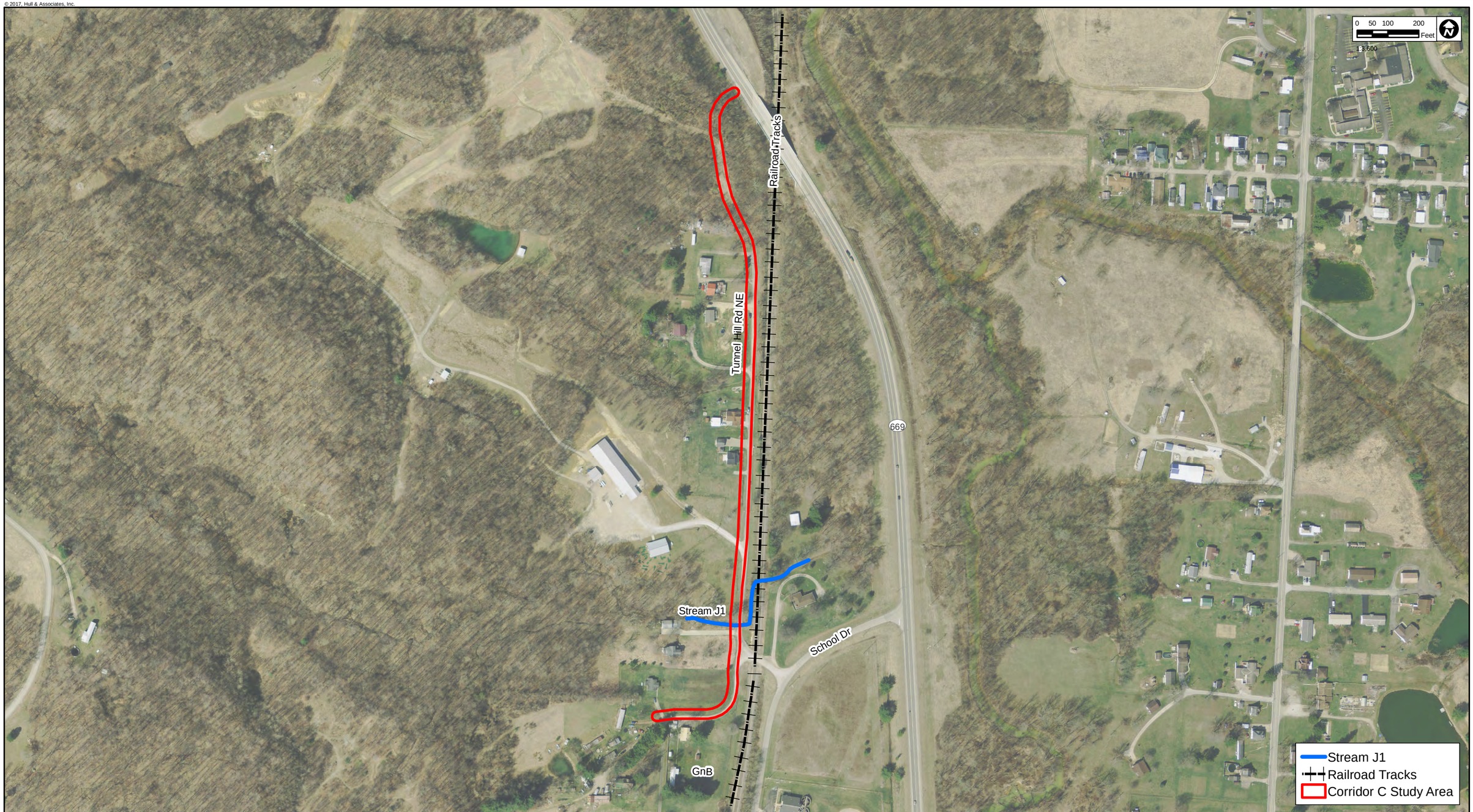

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Surface Water Determination

Surface Water Delineation Map

Village of Crooksville, Perry County, Ohio

Figure 3C

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Edited: 4/7/2017 By: jhaynal

ATTACHMENT A

PHOTO LOG

PHOTO 1: Representative view of the park habitat in the western portion of Project Corridor A.

PHOTO 2: Representative view of the upland forested area east of Moxahala Creek, facing west, within Project Corridor A.

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Water Line Replacement Project

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Village of Crooksville
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Date Taken:
April 2017

Project Number: VCR003
File Name:
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PHOTO 3: View of Wetland JA, facing southwest, showing the forested wetland habitat within Project Corridor A.

PHOTO 4: View of Wetland JA, facing west, showing the forested wetland habitat within Project Corridor A.

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PHOTO 5: Moxahala Creek from the western side of Project Corridor A.

PHOTO 6: Upland forested habitat and grass path within Project Corridor B.

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PHOTO 7: Mowed lawn habitat within the eastern portion of Project Corridor B.

PHOTO 8: Mowed lawn habitat along Project Corridor C.

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PHOTO 9: View of Stream J1, facing upstream.

PHOTO 10: View of Stream J1, facing downstream.

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PHOTO 11: View of Stream J1, substrate.

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Appendix D

Mailing List