

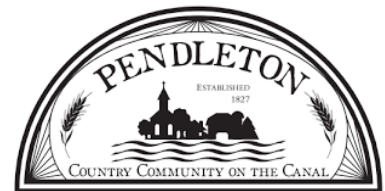
# FINAL

## TOWN OF PENDLETON CAMPBELL BOULEVARD WATER MAIN REPLACEMENT ENGINEERING REPORT

TOWN OF PENDLETON  
NIAGARA COUNTY, NEW YORK



Prepared for:



Town of Pendleton  
6570 Campbell Boulevard  
Lockport, New York 14094



22J1-0175

May 2023

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## 1.0 EXECUTIVE SUMMARY

The purpose of this report is to describe the Town of Pendleton's (herein referred to as "Town") plan for critical system upgrades to existing water infrastructure within the Town's water distribution system. Due to the poor condition of the system and extensive leak and repair history, the existing water main is nearing the end of its serviceable life and replacement is recommended.

Alternative 3, the recommended alternative, includes replacement of approximately 4,000 linear feet of aging watermain on Campbell Boulevard between Mapleton Road and Lockport Road, located within the Town of Pendleton's water distribution system. Alternative 3 solves the problems of aging infrastructure, poor condition, and leak history.

Several alternatives were evaluated to effectively address deficiencies in the Town owned water distribution system. Trenchless rehabilitation by either Cured-in-Place-Pipe Lining or slip-lining was considered for technical feasibility and cost. The recommended alternative is to pursue Alternative 3, which includes replacement of approximately 4,000 linear feet of watermain on Campbell Boulevard between Mapleton Road and Lockport Road within the project area.

The probable cost of construction of Alternative 3 yields a total estimate of approximately \$1.40 million. The total project cost, with 20% for engineering, legal, and administrative (ELA) and 15% material and labor contingency costs, is estimated to be \$1.89 million.

The Town is advised to pursue funding opportunities offered in the New York State Water Infrastructure Improvement Act (WIIA) call for applications and engage the community regarding the proposed projects.

## 2.0 PROJECT BACKGROUND & HISTORY

### 2.1 SITE INFORMATION

#### 2.1.1 Location

The project area is located on Campbell Boulevard (State Route 270) in the Town of Pendleton, Niagara County, New York. The project will consist of the replacement of approximately 4,000 linear feet of existing 8-inch water main on Campbell Boulevard between Mapleton Road and Lockport Road.

The project area is bordered by Lockport Road (County Road 6) to the north and Mapleton Road (County Road 32) to the south. The project location map is shown in **Figure 2-1** and a larger version is included in **Appendix A**.



Figure 2-1 Project Location Map

The Town is responsible for the operation, maintenance, and improvement of the water distribution facilities throughout the Town of Pendleton. The water system improvement area targeted for this project is shown in red on the water distribution system map in **Figure 2-2**. A larger version is included in **Appendix B**.

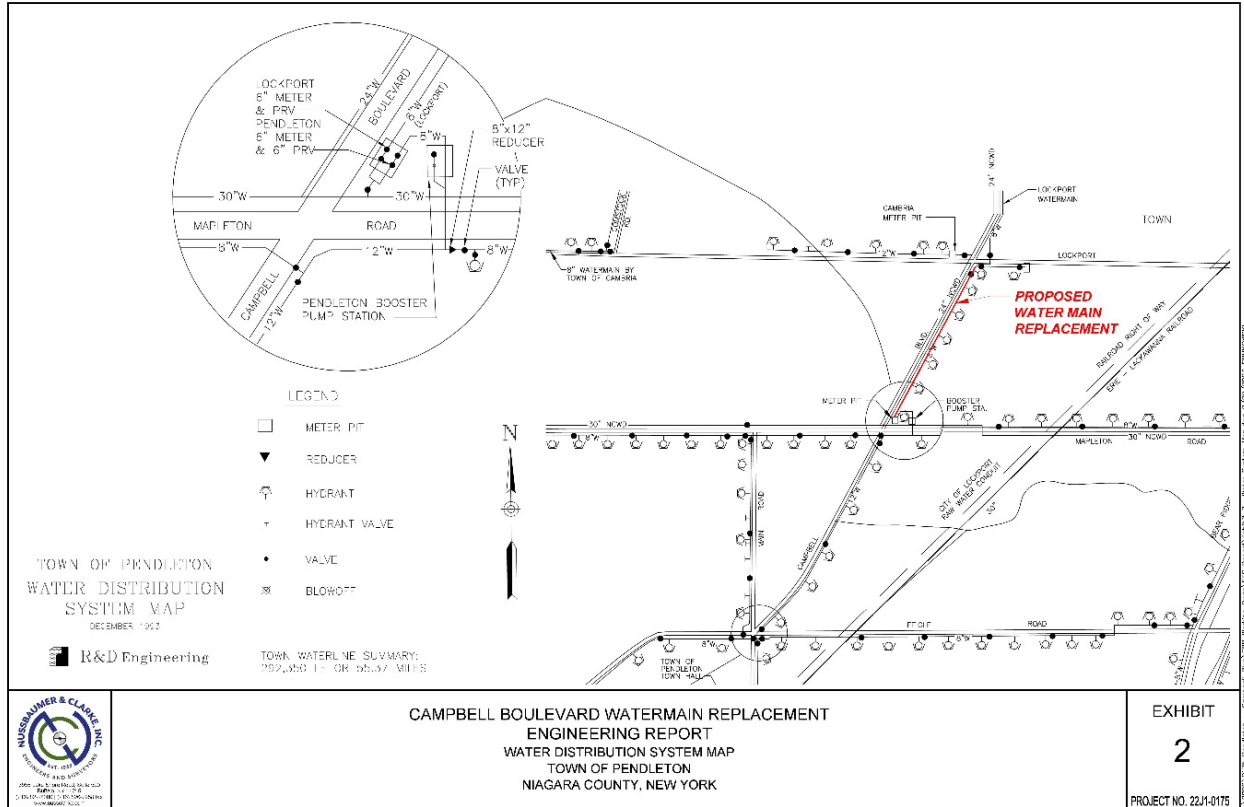


Figure 2-2 Water Distribution System Map

### 2.1.2 Geologic Conditions

The topography of the project area is generally flat with elevations ranging from 596 feet to 601 feet (USGS NAVD88 datum).

According to the United States Department of Agriculture (USDA) - National Resources Conservation Service's (NRCS) Web soil survey, site soils are generally characterized as approximately 60% Canandaigua silt loam (Ca) and approximately 40% Lakemont silt clay loam (Lc). Canandaigua silt loam consists of very poorly drained soils with 0 to 2 percent slopes and identified as hydrologic soil groups "C" and "D". Lakemont silt clay loam consists of poorly drained soils with 0 to 3 percent slopes and identified as hydrologic soil group "D". The complete list of soils within the study area can be found in the Custom Soil Resource Report included in **Appendix C**.

Based on leak and break repair documentation, depth to bedrock is typically 3 to 4 feet below grade for the project area. The recommended alternative proposes replacement of the existing watermain and installation of the new watermain in the existing trench.



SJB Services, Inc and Terracon completed historic subsurface investigations and geotechnical evaluations for the Town of Pendleton, Town of Lockport, and Niagara County Water District within and north of the project area in November 2009, June 2015, October 2017, and June 2020. For completion of this report, Nussbaumer & Clarke, Inc was provided with limited historic geotechnical data for five (5) test borings completed to a depth of 15 feet or refusal to characterize subsurface soil, bedrock, and groundwater conditions.

Limited historic subsurface investigation results indicated the presence of fill material with varying amounts of sand, silt, and clay from grade to depths ranging from 3.8 to 10.9 feet below ground surface (fbgs) and bedrock encountered at varying depths from 3.8 fbgs to borehole depth (15 fbgs) or refusal. Groundwater was encountered at 2 of the 5 soil boring locations at 5 and 7 fbgs. Soil boring logs provided by SJB Services, Inc. and Terracon are included in **Appendix C**.

### 2.1.3 Environmental Resources

According to the NYSDEC's online Environmental Resource Mapping Tool, none of the project area falls within any NYSDEC regulated wetlands, check zones, rare plants, or rare animals. The project area is located adjacent to a state regulated freshwater wetland; however, no permit is required because the project area is located more 100 feet from the wetland check zone. Wetland delineation and notification are not required for this project. According to the National Wetland Inventory, the project area bisects two (2) ravine habitats classified as R4SBCx; no permit is required. The ravine habitat bisects the roadway through two (2) underground 30-inch stormwater culverts, see Section 2.2.11. **Appendix D** includes the NYSDEC Environmental Resource Mapper results and National Wetland Inventory Map for the project area.

### 2.1.4 Environmental Justice Areas

While the project area is not located within a designated potential environmental justice (EJ) area, the project area is located adjacent to a potential EJ area community identified as Census Block Group Number 15000US360630234013 (north). A map of potential EJ areas adjacent to the project area, as established by NYSDEC in ArcGIS, is included in **Appendix E**.

### 2.1.5 Floodplain Considerations

According to FEMA Flood Insurance Rate Maps, 36063C0219E and 36063C0357E, the project area is not located within or adjacent to any flood plain boundary. A copy of the FEMA Flood Insurance Rate Map is included in **Appendix F**.

## 2.2 OWNERSHIP & SERVICE AREA

### 2.2.1 Publicly Owned

The Town of Pendleton Water District, Public Water Supply ID# NY3100574, is a bulk sales customer of the Niagara County Water District, Public Water Supply ID# NY3100567. The Town owns its own water storage and distribution system. The Niagara County Water District bills the Town of Pendleton Water District, and the Town of Pendleton bills the Town residence based upon monthly meter readings.

Due to metering configurations, water service to Town residence along the section of Campbell Boulevard between Mapleton Road to Lockport Road (approximately 4,000 feet) was owned and maintained by the Town of Lockport until recently (2022). The operation and maintenance of this

system was cumbersome with the Town addressing resident complaints and primary maintenance issues with billings handled through the Town of Lockport. Under the Town of Lockport ownership, the Town of Lockport was billing Pendleton residents through an out of district customer service agreement between Lockport and Pendleton, included in **Appendix G**. In 2022, the Towns of Pendleton and Lockport executed an Intermunicipal Agreement to transfer the ownership of the water system, included in **Appendix G**. The Town of Pendleton is now responsible for all customer service, billing, maintenance, and capital improvements for the project area.

**2.2.2 Water System Management**

The Town maintains all the water infrastructure in the project area within the right-of-way. All the Town's operations staff have Grade D certifications and have completed the necessary continuing education requirements to maintain their licenses.

**2.2.3 Water District Boundaries**

The project area is located in the Town of Pendleton Water District (NY3100574) and this project will not expand or change the district boundaries in any way. The Town of Pendleton Water District Map is provided below as **Figure 2-3**. A larger version is included in **Appendix B**.

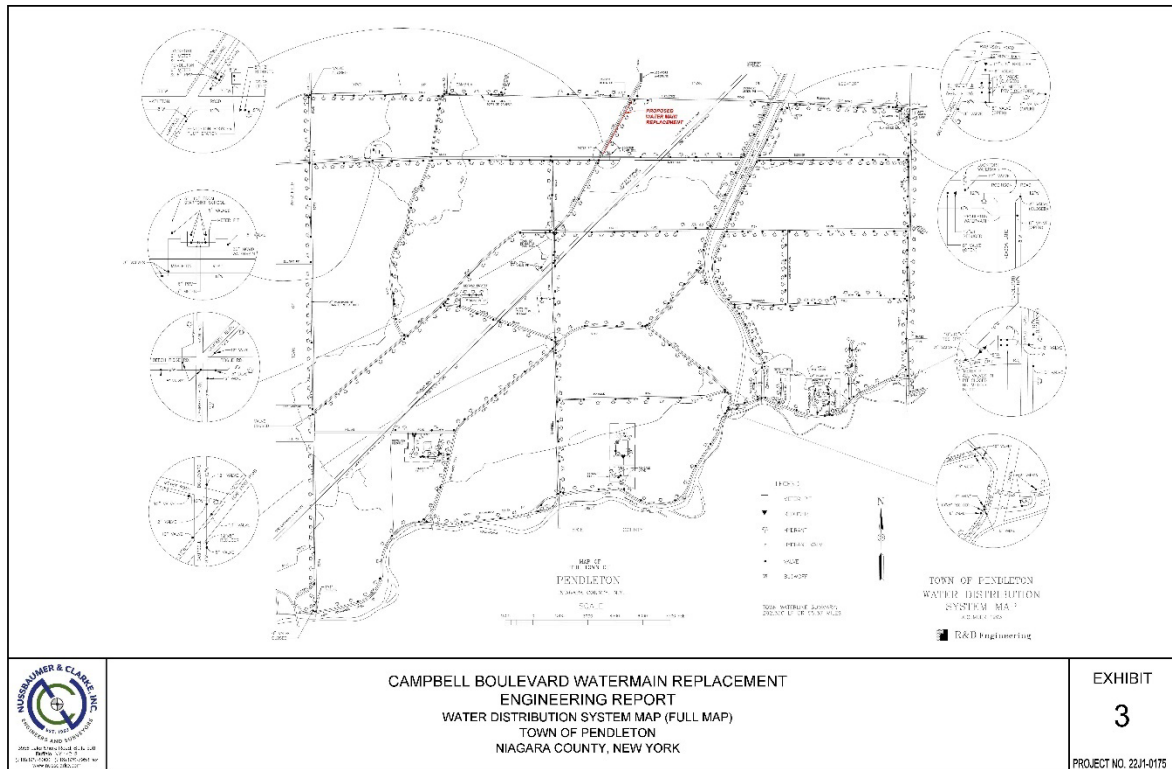


Figure 2-3 Water District Map

**2.2.4 Outside Users**

Each residential user within the Town of Pendleton Water District is billed quarterly based on their metered water usage. There are no outside users.

## 2.2.5 Agricultural and Industrial Land Use

The majority of lands within the project area are classified as residential. One (1) parcel is classified as commercial greenhouse, one (1) parcel is classified as vacant land, and one (1) parcel is classified as agricultural field crops. No industrial lands exist within the project area.

## 2.2.6 Population Trends and Growth

Residential population growth of vacant parcels in the Town of Pendleton is anticipated to gradually increase in the future. There is vacant land within the Town of Pendleton, including the proposed project area, available for further development. However, a significant increase in water demand is not anticipated during construction of this project or the immediate future.

The 1990, 2000, 2010, and 2020 U.S. Census also show that the populations in the Town of Pendleton have gradually increased in the last twenty years. Census population data and the projected population over the next 20 years in five-year intervals are included in **Table 1**.

**TABLE 1 – U.S. Census Population Data**

Year	Town of Pendleton Population
1990	5,010
2000	6,050
2010	6,397
2020	7,035
2025	7,427
2030	7,806
2035	8,204
2040	8,622

*Note: Projected population values highlighted in blue are based on historical population data from 1990 – 2020.*

The 2020 Town of Pendleton U.S. Census Population includes the total population for the Town of Pendleton Water District. According to the Town's 2021 Annual Water Quality Report, the Town's water system serves 7,035 people through 2,703 service connections.

## 2.2.7 Historical and Projected Water Use Data

All water use within the project area is residential or commercial. Based on the Town's 2021 Annual Water Quality Report, the current average water use is approximately 185 gallons per household per day. The project area, located within the Town of Pendleton's Water District, has an average daily water demand of approximately 5,700 gallons per day, a maximum daily water demand of approximately 11,400 gallons per day, peak hourly flow of approximately 22,800 gallons per day, and a fire flow demand of approximately 300 gallons per minute. Water use calculations are provided in **Appendix H**. Currently, the percent of unaccounted water for the Town of Pendleton Water District is estimated to be 20%. Water demand is not anticipated to significantly increase based on historical water usage data and population trends. Replacement of this watermain should greatly reduce the amount of unaccounted water due to main leaks.

## 2.2.8 Adjacent Water Systems

The Town owns, operates, and maintains the Town of Pendleton Water District (NY3100574) and is responsible for all capital improvements. Adjacent water systems are provided below.

- North - Cambria Water District (NY3100557)
- North & East - Lockport Water Districts 2 & 3 (NY3100562 & NY3100563, respectively)
- South - Erie County Water Authority Town of Amherst Lease Managed Service Area (NY1400399)
- West - Wheatfield Water District (NY3100585)

## 2.2.9 Community Involvement

The Town plans to distribute a community outreach mailer to the community prior to the start of construction, including project description, proposed schedule, and contact information.

## 2.2.10 Location and History

The project area is located on Campbell Boulevard, between Lockport Road and Mapleton Road, in the Town of Pendleton Water District and is comprised of 8-inch, 10-inch, 24-inch, 30-inch, and 36-inch cast iron watermains that were installed in 1961. See **Table 2** for a breakdown of watermain install date, size, and material by road name. The project area includes a total of 31 water services, including 27 ¾-inch services, three (3) 1-inch services, and one (1) 1 ½-inch service. All known services are reported to be copper. Approximately 4,000 feet of watermains are recommended to be replaced. A map of the Town's water system is included as **Appendix B**.

**Table 2 – Location and History**

Road	Install Date	Size	Material	Replacement or Interconnection
Campbell Boulevard	1961	8, 24	CI	Replacement
Mapleton Road	1961	8, 30	CI	Interconnection
Lockport Road	1961	8, 10, 36	CI	Interconnection

## 2.2.11 Existing Facilities and Present Condition

The existing Campbell Boulevard watermain proposed to be replaced (8-inch) is aligned in a northeast and southwest direction and is constructed of cast iron pipe. The existing 8-inch watermain is located in the grass area on the east side of the roadway from Mapleton Road to Lockport Road. A second existing watermain to remain (24-inch) is aligned in a northeast and southwest direction and is constructed of cast iron pipe. The existing 24-inch watermain is located in the grass area on the west side of the roadway from Mapleton Road to Lockport Road. Stormwater drainage ditches run along the west and east side of the roadway and existing stormwater culverts bisect driveway aprons along the east side of the roadway at 6181, 6169, 6121, 6111, 6079, and 6021 Campbell Boulevard. Existing storm sewer segments are located within the grass area along Campbell Boulevard on the east side of the roadway along 6163 Campbell Boulevard, on the west side of the roadway from 6160 to 6148 Campbell Boulevard and bisecting the road at the catch basins in front of 6160 and 6151 Campbell Boulevard, and on

the east side of the roadway along 6061 Campbell Boulevard. Catch basins are located along the existing storm sewer segments. Four (4) catch basins run along the east side of the roadway, located at the intersection of Campbell Boulevard and Mapleton Road and at 6163, 6151, and 6061 Campbell Boulevard. One (1) catch basin is located on the west side of the roadway at 6160 Campbell Boulevard. Two (2) 30-inch stormwater culverts bisect the roadway at the north parcel boundary of 6141 Campbell Boulevard and near the north parcel boundary of 6061 Campbell Boulevard. The existing gas main is located within the grass area along the right-of-way boundary, on the west side of the roadway from Mapleton Road to Lockport Road. Overhead utilities supported by wood utility poles are located within the grass area on the west side of the roadway from Mapleton Road to 6068 Campbell Boulevard and transitions to the east side of the roadway from 6021 Campbell Boulevard to Lockport Road. There is no sanitary sewer or underground electric along Campbell Boulevard between Mapleton Road and Lockport Road. Seven (7) fire hydrants are located along Campbell Boulevard on the east side of the roadway, spaced approximately every 600 feet. Additional hydrants are available on adjacent streets.

### **2.3 NEED FOR THE PROJECT**

Historic water main maintenance and repair data for the project area, prior to the transfer of ownership from the Town of Lockport to the Town of Pendleton, is not available. Based on the age and material of the existing 8-inch water main, it is nearing/exceeded its useful life and the ability to provide reliable water service to residents may soon become compromised.

Based upon the age of the Town of Pendleton's water system, it is anticipated that there are a significant number of lead services in the project area as defined by the recent Lead and Copper Rule Revisions (LCRR). The LCRR requires all community and non-transient non-community water systems to develop and submit a lead service line inventory by October 16, 2024. The proposed watermain replacement project will aid in the upcoming lead service regulations, as it includes replacement of all 31 water service connections within the project area.

### **2.4 CAPACITY DEVELOPMENT**

The Capacity Development Program Evaluation is included in **Appendix I**.

### **3.0 ALTERNATIVES ANALYSIS**

#### **3.1 ALTERNATIVE 1 – NO ACTION**

The 8-inch watermain on Campbell Boulevard between Lockport Road and Mapleton Road, will continue to deteriorate and leak, and the available fire flow will continue to diminish as scale corrosion continues to reduce the cross-sectional area of the watermain. Both of these factors will limit the reliability of service to residents.

The no action alternative is not recommended.

#### **3.2 ALTERNATIVE 2 – TRENCHLESS REHABILITATION**

##### **3.2.1 Description**

There are several trenchless repair technologies available to repair existing watermains without requiring excavation. Cured-in-Place-Pipe Lining involves cleaning and inserting a flexible liner inside the existing watermain, inflating the liner, and exposing it to heat or ultraviolet light to dry and harden the liner inside the watermain. The liner essentially forms a smooth surface inside the existing watermain, restoring it to near-new condition. Slip-lining is another alternative that involves digging a sending and receiving pit to accommodate specialized equipment crews use to push or pull a new watermain into an existing, deteriorating watermain. Both of these methods reduce internal diameter of the main.

##### **3.2.2 Construction Cost Estimate**

The total construction cost of Alternative 2 is estimated to be \$830,000. The total project cost, with 20% for engineering, legal, and administrative (ELA) and 15% material and labor contingency costs, is estimated to be \$1,120,500.

##### **3.2.3 Non-Monetary Factors**

This alternative would limit the disturbance for local residents; however, temporary bypass piping will be required during construction.

The trenchless rehabilitation alternative is not feasible because the poor condition of the existing watermain would not support cured-in-place-pipe lining or slip-lining and would create challenges related to fitting, valve, and hydrant replacement. In conclusion, trenchless rehabilitation is not recommended.

#### **3.3 ALTERNATIVE 3 – REPLACEMENT**

##### **3.3.1 Description**

The project will consist of replacement of existing 8-inch cast-iron watermain with approximately 4,000 linear feet of new 8" PVC watermain on Campbell Boulevard between Mapleton Road and Lockport Road in the Town of Pendleton. The existing watermain will be removed and the new watermain will be installed in the same trench.

### 3.3.2 Construction Cost Estimate

The total construction cost of Alternative 3 is estimated to be \$1,397,000. The total project cost, with 20% for engineering, legal, and administrative (ELA) and 15% material and labor contingency costs, is estimated to be \$1,886,000.

An itemized cost estimate is included in **Appendix J**.

### 3.3.3 Non-Monetary Factors

This alternative would result in the largest amount of disturbance during construction; however, it is recommended due to long term hydraulic improvements. The construction impacts on residents can be mitigated by thoughtful design, proper traffic control, and community outreach.

#### **4.0 SUMMARY AND COMPARISON OF ALTERNATIVES**

Alternative 3 is the only viable option for construction as it solves both the problem of aging, and of leak history. Alternative 2 is not feasible due to the poor condition of the existing watermain. Future operations and maintenance for Alternative 3 is more desirable than Alternative 2, as liners can be a challenge to work with if service, valve, fitting, etc. replacement is needed.



## 5.0 RECOMMENDED AND SELECTED ALTERNATIVES

### 5.1 BASIS OF SELECTION

Alternative 3 is the recommended alternative for the Town to pursue. Alternative 3 addresses the priority issues facing the 8-inch watermain in the project area and is the only viable option for construction as it solves the problems of aging infrastructure, poor condition, and leaking history.

Alternative 2 is not recommended because the poor condition of the existing watermain is not strong enough to handle lining activities.

### 5.2 CONSTRUCTION COST ESTIMATE

A watermain replacement project is recommended under Alternative 3. The total construction cost of Alternative 3 is estimated to be \$1,397,000. The total project cost, including engineering, legal, and administrative and material and labor contingency costs, is estimated to be \$1,886,000. The total construction cost and total project cost of Alternative 2 and Alternative 3 are provided in Table 3 below and **Appendix J**.

**TABLE 3 – Alternative Cost Comparison**

Alternative	Estimated Construction Cost	Estimated Total Project Cost
2	\$830,000	\$1,120,500
3	\$1,397,000	\$1,886,000

The Town is advised to pursue funding opportunities offered in the New York State Water Infrastructure Improvement Act (WIIA) call for applications and engage the community regarding the proposed projects.

### 5.3 PROJECT SCHEDULE

The preliminary project schedule is as follows:

- Preliminary Design Development – February 2023 through May 2023
- Submit Funding Applications – May 2023
- Detailed Design – August 2023 – October 2023
- Construction Phase – May 2024 – August 2024

### 5.4 COMMUNITY ENGAGEMENT

The residents within the project area will be proactively informed about any project affecting the water system. The Town will make information easily accessible and engage the public throughout this project. A public outreach mailer will be distributed to the community prior to the start of construction.

### 5.5 ENGINEERING REPORT CERTIFICATION & SMART GROWTH ASSESSMENT

The Engineering Report Certification and Smart Growth Assessment Form are included in **Appendices L and M**, respectively.

## 6.0 REFERENCES

United States Department of Agriculture (USDA) Natural Resources Conservation Services (NRCS). *Web Soil Survey*. July 31, 2019.

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[https://www.arcgis.com/home/webmap/viewer.html?url=https://services6.arcgis.com/DZHaqZm9cxOD4CWM/ArcGIS/rest/services/Potential Environmental Justice Area PEJ A Communities/FeatureServer&source=sd](https://www.arcgis.com/home/webmap/viewer.html?url=https://services6.arcgis.com/DZHaqZm9cxOD4CWM/ArcGIS/rest/services/Potential_Environmental_Justice_Area_PEJ_A_Communities/FeatureServer&source=sd)

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[Insurance Service Office \(ISO\) Guide for Determination of Needed Fire Flow Edition 06-2014.](#)

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Recommended Standards for Water Works. 2018 Edition.

[https://www.health.ny.gov/environmental/water/drinking/regulations/docs/2018\\_recommended\\_standards.pdf](https://www.health.ny.gov/environmental/water/drinking/regulations/docs/2018_recommended_standards.pdf)



**APPENDIX A**  
**PROJECT LOCATION MAP**





NOT FOR CONSTRUCTION



CAMPBELL BOULEVARD WATER MAIN REPLACEMENT  
TOWN OF PENDLETON  
ENGINEERING REPORT  
PROJECT LOCATION MAP  
TOWN OF PENDLETON  
NIAGARA COUNTY, NEW YORK



EXHIBIT  
**1**  
PROJECT NO. 22J1-0175



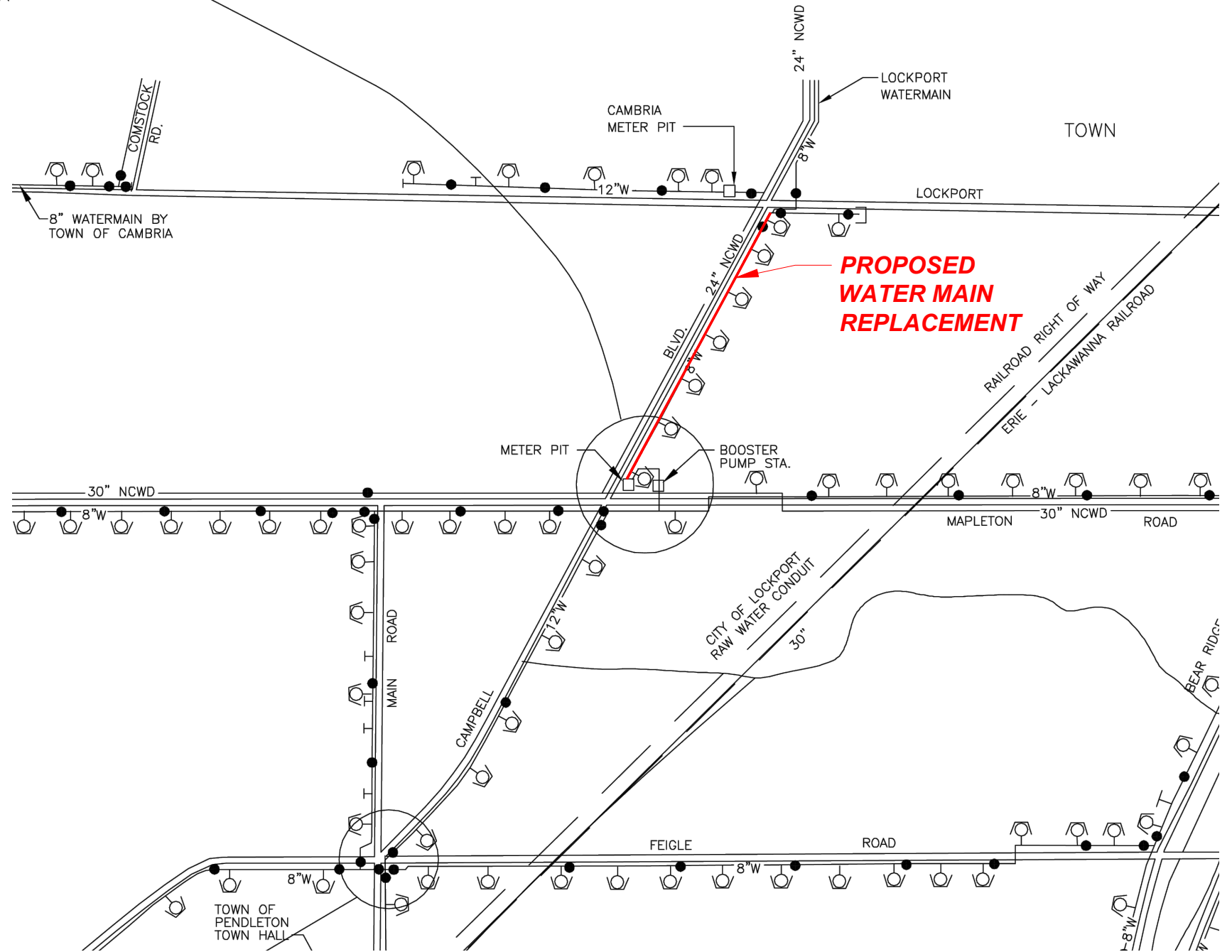
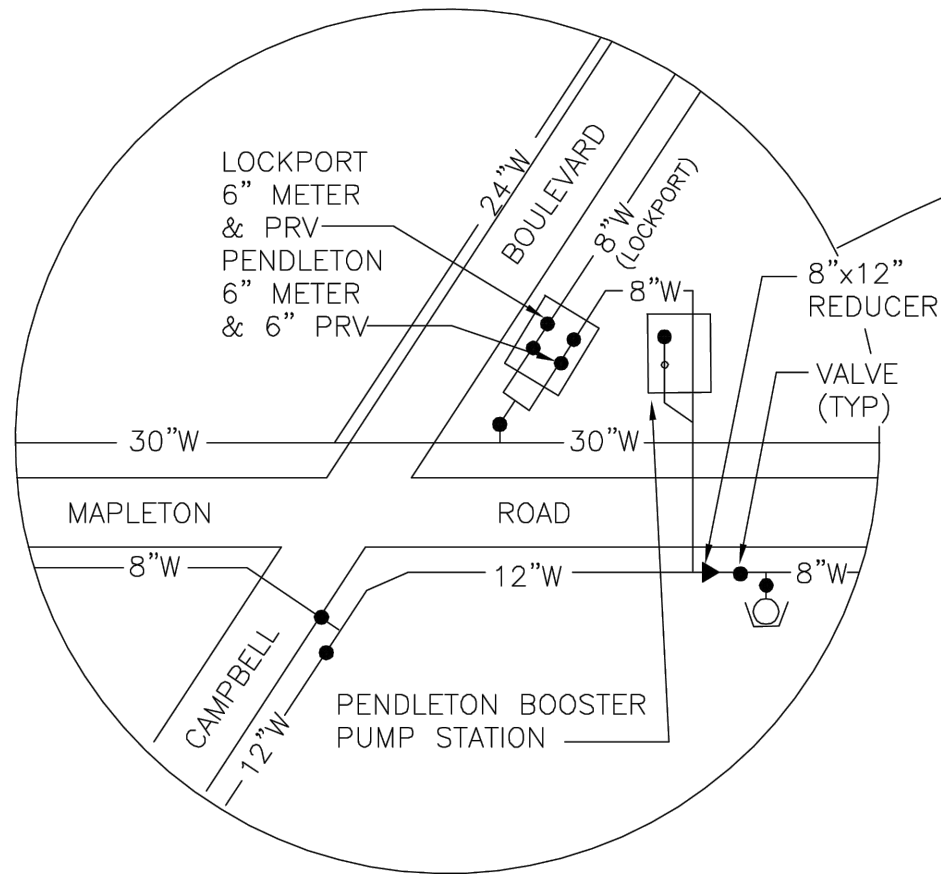


**APPENDIX B**

**WATER DISTRIBUTION SYSTEM MAP**







LEGEND

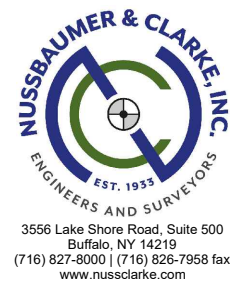
- METER PIT
- ▼ REDUCER
- ⊕ HYDRANT
- ⊕ HYDRANT VALVE
- VALVE
- ⊗ BLOWOFF

TOWN OF PENDLETON  
WATER DISTRIBUTION  
SYSTEM MAP

DECEMBER 1993

R&D Engineering

TOWN WATERLINE SUMMARY:  
292,350 LF OR 55.37 MILES



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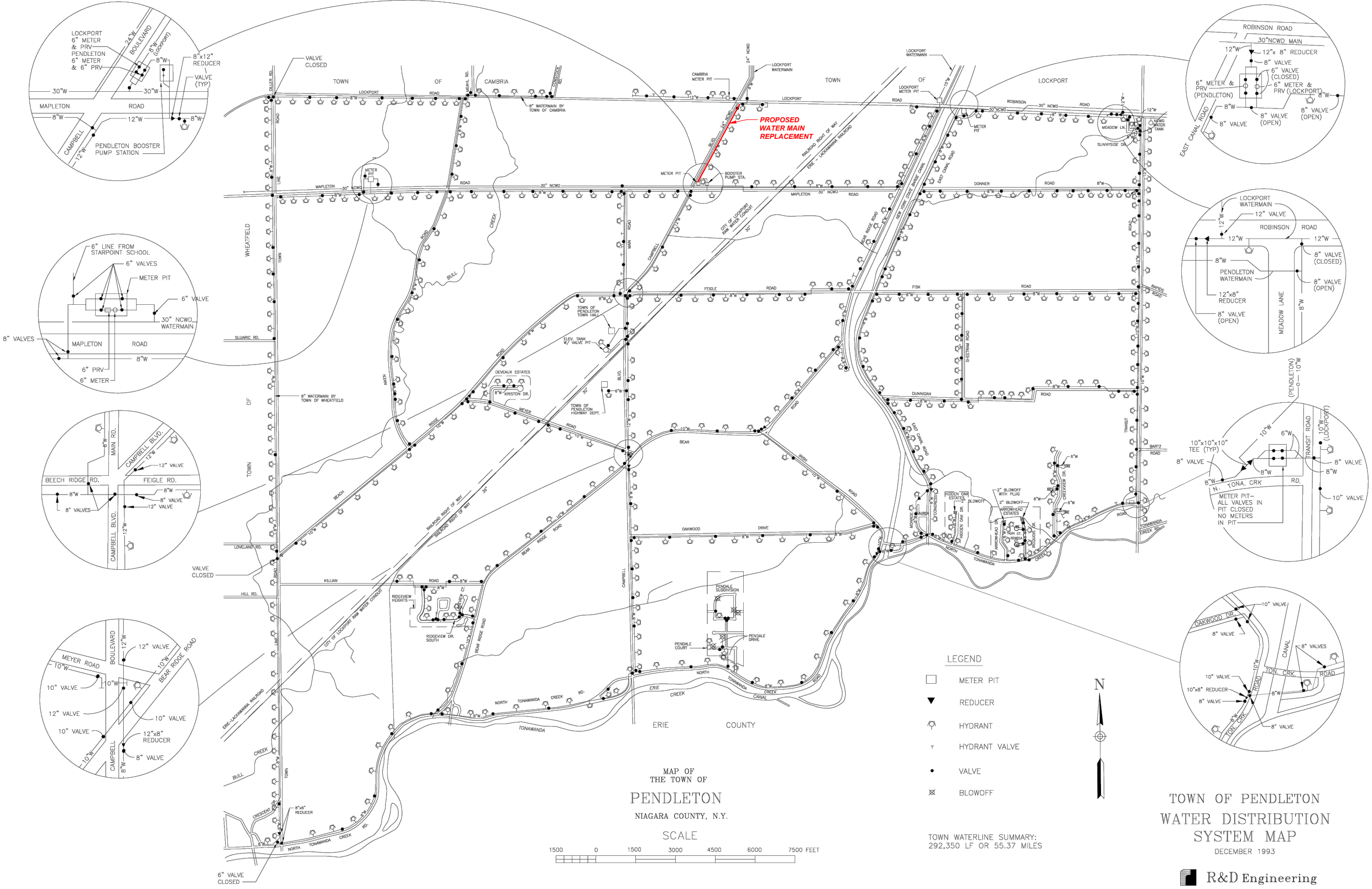
CAMPBELL BOULEVARD WATERMAIN REPLACEMENT  
ENGINEERING REPORT  
WATER DISTRIBUTION SYSTEM MAP  
TOWN OF PENDLETON  
NIAGARA COUNTY, NEW YORK

EXHIBIT

2

PROJECT NO. 22J1-0175





**CAMPBELL BOULEVARD WATERMAIN REPLACEMENT  
ENGINEERING REPORT  
WATER DISTRIBUTION SYSTEM MAP (FULL MAP)  
TOWN OF PENDLETON  
NIAGARA COUNTY, NEW YORK**

**EXHIBIT  
3**

PROJECT NO. 22J1-0175





## **APPENDIX C**

# **USDA SOIL REPORT & HISTORIC GEOTECHNICAL DATA**





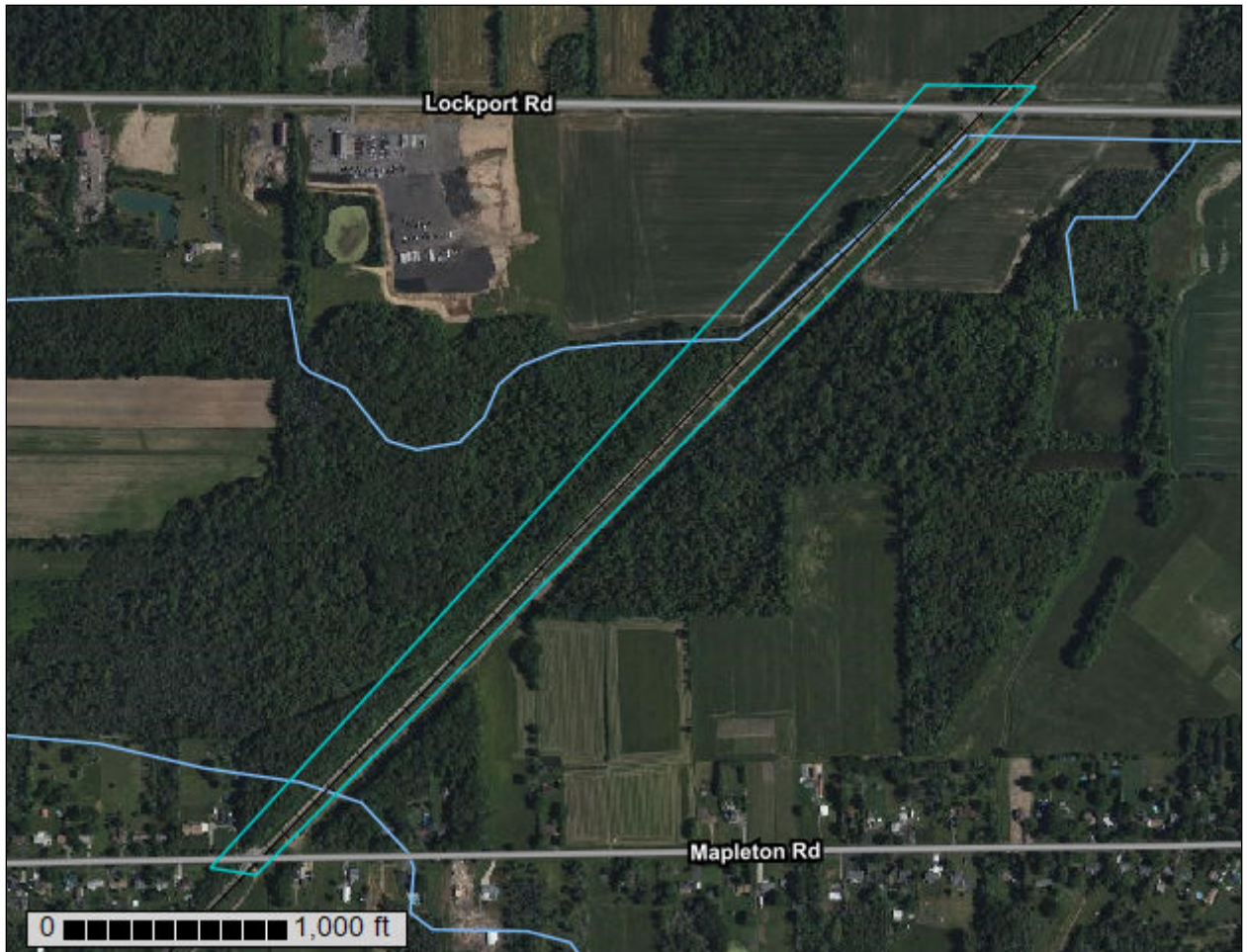
United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for **Niagara County Area, New York**



# Preface

---

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

## Custom Soil Resource Report

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

## Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

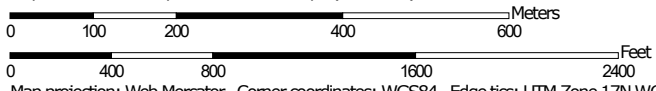
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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report Soil Map



Map Scale: 1:9,090 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

### MAP LEGEND

**Area of Interest (AOI)**

 Area of Interest (AOI)




















**Soils**

 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

**Special Point Features**

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


**Water Features**

 Streams and Canals

**Transportation**

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

**Background**

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Niagara County Area, New York  
 Survey Area Data: Version 21, Sep 14, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 28, 2020—Jul 4, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ca	Canandaigua silt loam	17.9	60.7%
Lc	Lakemont silty clay loam, 0 to 3 percent slopes	11.6	39.2%
<b>Totals for Area of Interest</b>		<b>29.5</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

## Custom Soil Resource Report

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Niagara County Area, New York

### Ca—Canandaigua silt loam

#### Map Unit Setting

*National map unit symbol:* 9tvn  
*Elevation:* 100 to 1,000 feet  
*Mean annual precipitation:* 31 to 37 inches  
*Mean annual air temperature:* 46 to 50 degrees F  
*Frost-free period:* 145 to 190 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Canandaigua and similar soils:* 75 percent  
*Minor components:* 11 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Canandaigua

##### Setting

*Landform:* Depressions  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Parent material:* Silty and clayey glaciolacustrine deposits

##### Typical profile

*H1 - 0 to 7 inches:* silt loam  
*H2 - 7 to 24 inches:* silty clay loam  
*H3 - 24 to 60 inches:* stratified loamy fine sand to silt to clay

##### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Very poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.20 to 0.57 in/hr)  
*Depth to water table:* About 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Calcium carbonate, maximum content:* 15 percent  
*Available water supply, 0 to 60 inches:* High (about 12.0 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 5w  
*Hydrologic Soil Group:* C/D  
*Ecological site:* F101XY010NY - Wet Lake Plain Depression  
*Hydric soil rating:* Yes

#### Minor Components

##### Lakemont

*Percent of map unit:* 4 percent  
*Landform:* Depressions

## Custom Soil Resource Report

*Hydric soil rating:* Yes

### **Madalin**

*Percent of map unit:* 4 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

### **Sun**

*Percent of map unit:* 3 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

## **Lc—Lakemont silty clay loam, 0 to 3 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2spjw

*Elevation:* 260 to 1,800 feet

*Mean annual precipitation:* 31 to 57 inches

*Mean annual air temperature:* 41 to 50 degrees F

*Frost-free period:* 100 to 190 days

*Farmland classification:* Farmland of statewide importance

### **Map Unit Composition**

*Lakemont and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Lakemont**

#### **Setting**

*Landform:* Depressions

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Parent material:* Red clayey glaciolacustrine deposits derived from calcareous shale

#### **Typical profile**

*Ap - 0 to 6 inches:* silty clay loam

*Eg - 6 to 10 inches:* silty clay loam

*Btg1 - 10 to 15 inches:* silty clay

*Btg2 - 15 to 31 inches:* silty clay

*C - 31 to 79 inches:* silty clay

#### **Properties and qualities**

*Slope:* 0 to 3 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Poorly drained

*Runoff class:* Very low

## Custom Soil Resource Report

*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.14 in/hr)

*Depth to water table:* About 0 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 25 percent

*Available water supply, 0 to 60 inches:* Moderate (about 8.9 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4w

*Hydrologic Soil Group:* D

*Ecological site:* F101XY010NY - Wet Lake Plain Depression

*Hydric soil rating:* Yes

### Minor Components

#### Odessa

*Percent of map unit:* 5 percent

*Landform:* Lake terraces

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Ecological site:* F101XY009NY - Moist Lake Plain

*Hydric soil rating:* No

#### Fonda

*Percent of map unit:* 4 percent

*Landform:* Depressions

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

#### Canandaigua

*Percent of map unit:* 4 percent

*Landform:* Depressions

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

#### Barre

*Percent of map unit:* 2 percent

*Landform:* Depressions

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope, tread

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

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DATE  
 START 11/20/2009  
 FINISH 11/20/2009  
 SHEET 1 OF 1

**SJB SERVICES, INC.**  
**SUBSURFACE LOG**



HOLE NO. B-64  
 SURF. ELEV. \_\_\_\_\_  
 G.W. DEPTH See Notes

PROJECT: PROPOSED TRANSMISSION MAIN LOCATION: LOCKPORT RD. AT CAMPBELL  
 PROJ. NO.: BD-09-120 W. SIDE OF INTERSECTION

DEPTH FT.	SMPL NO.	BLOWS ON SAMPLER				SOIL OR ROCK CLASSIFICATION	NOTES
		0/6	6/12	12/18	N		
5	1	5	8			Red- Brown and Black Clayey SILT, tr. sand (moist, FILL)	
		6	5		14		
5	2	7	18			Red- Brown f-c SAND, some Silt, tr. gravel, tr. dolostone (moist, compact, SM)	
		19	19		37		
5	3	14	50			(v. compact)	
		17	9		67		
10	4	13	50	50/0.2	REF	Brown Weathered DOLOSTONE Rock (moist)	REF= Sample Spoon Refusal
		5	50/0.2		REF		
15						Becomes Brown- Grey	NQ '2' Size Rock Core
15						Grey DOLOSTONE Rock, medium- hard, sound, thinly bedded to bedded	Run #1 10.3'- 15.3' REC= 68% RQD= 40%
20						Boring Complete at 15.3'	No Free Standing Water Recorded at Boring Completion
25							
30							
35							
40							

N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW CLASSIFIED BY: Geologist  
 DRILLER: K. FULLER DRILL RIG TYPE: CME-550X  
 METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS

DATE  
 START 11/20/2009  
 FINISH 11/20/2009  
 SHEET 1 OF 1

**SJB SERVICES, INC.**  
**SUBSURFACE LOG**



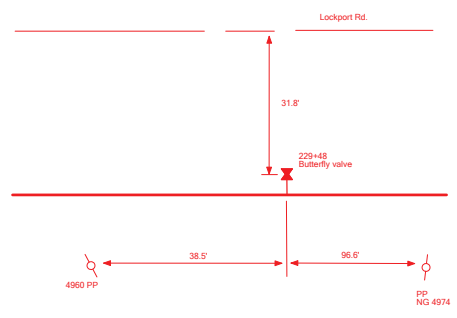
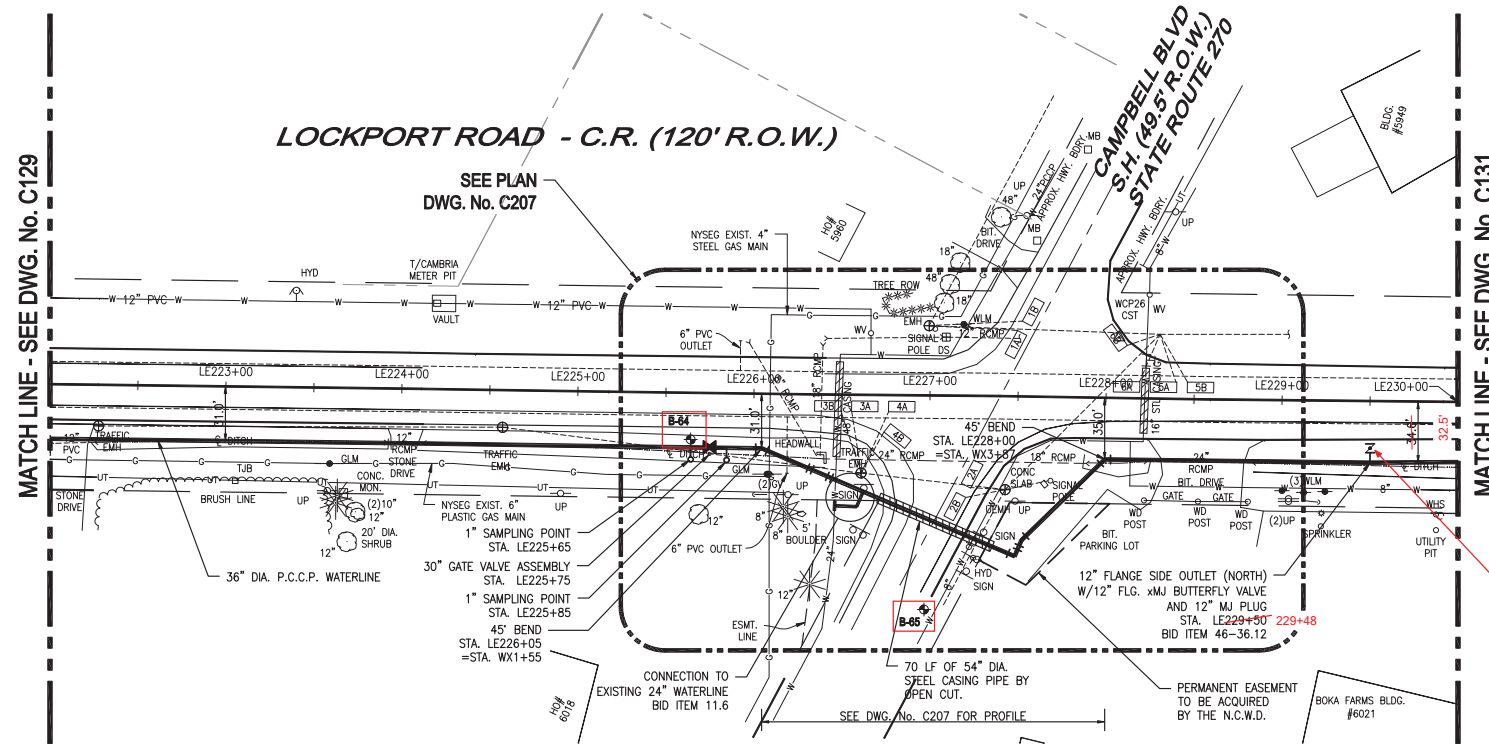
HOLE NO. B-65  
 SURF. ELEV. \_\_\_\_\_  
 G.W. DEPTH See Notes

PROJECT: PROPOSED TRANSMISSION MAIN LOCATION: CAMPBELL AT LOCKPORT RD.  
 PROJ. NO.: BD-09-120 S. SIDE OF INTERSECTION

DEPTH FT.	SMPL NO.	BLOWS ON SAMPLER				SOIL OR ROCK CLASSIFICATION	NOTES
		0/6	6/12	12/18	N		
1	1	16	12			Red- Brown and Black f-c SAND, some Silt, tr. gravel (moist, FILL)	
		9	9		21		
2	2	8	7				
		7	4		14		
5	3	1	1			Contains tr. clay (moist- wet)	
		2	13		3		
4	4	8	4			Contains numerous Dolostone fragments	
		6	50/0.1		10		
10						Boring Complete with Sample Spoon Refusal at 7.6' and Auger Refusal at 7.7'	No Free Standing Water Reading Obtained at Boring Completion
15							
20							
25							
30							
35							
40							

N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW CLASSIFIED BY: Geologist  
 DRILLER: K. FULLER DRILL RIG TYPE: CME-550X  
 METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS

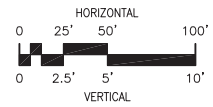
FILENAME: E:\31460703\TRANSLINE\DWG\CIVIL\COMPOSITE\N\COMPTL-C1008.DWG LAYOUT: C130X DATE: 5/16/2011 9:38:09 AM



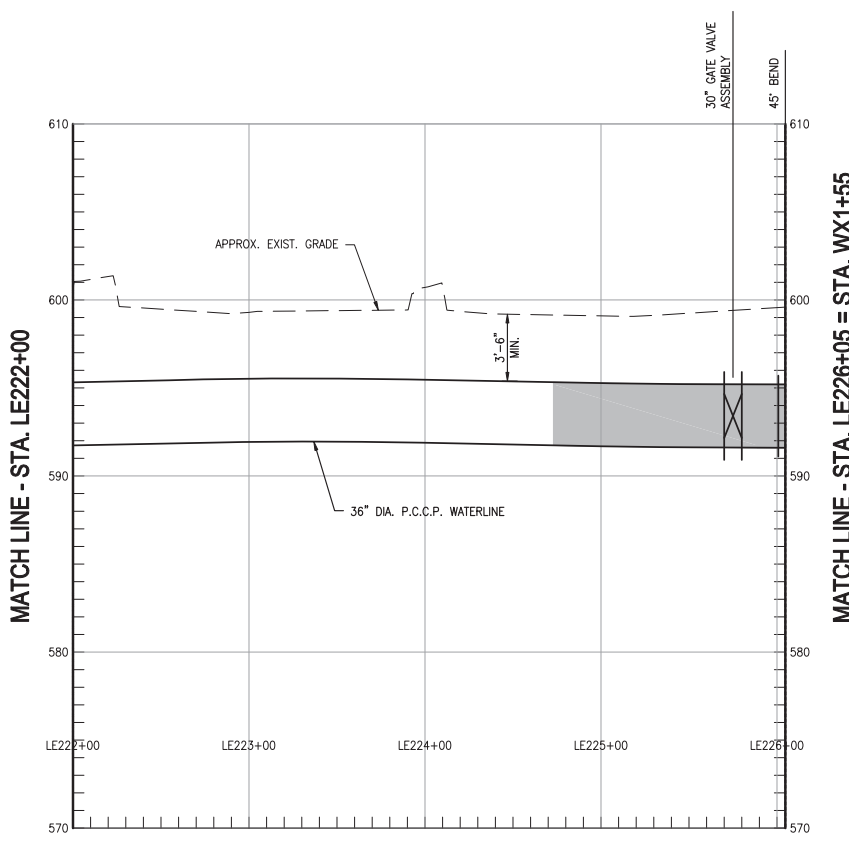
SEE DETAIL 1

DETAIL 1

PLAN SCALE: 1"=50'

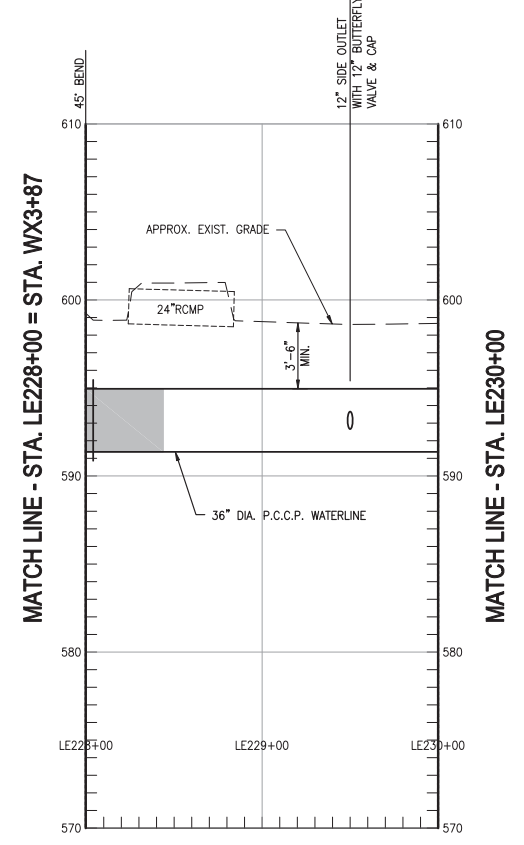


**NOTE:**  
SEE DWG. No. C207 & C208  
FOR DETAIL PLAN AND PROFILES



**PROFILE**  
SCALE: HORIZ. 1"=50'  
VERT. 1"=5'

MATCH LINE - STA. LE226+05 = STA. WX1+55



**PROFILE**  
SCALE: HORIZ. 1"=50'  
VERT. 1"=5'

MATCH LINE - STA. LE230+00



**NIAGARA COUNTY  
WATER DISTRICT**

**TRANSMISSION MAIN**

LOCKPORT ROAD,  
MAPLETON ROAD, AND  
SHAWNEE ROAD

CONTRACT No. 10-5G  
CONTRACT No. 10-5M  
CONTRACT No. 10-5E

2011



NOTES  
THIS DOCUMENT, AND THE DEGS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE IS THE PROPERTY OF WENDEL ENGINEERS AND IS NOT TO BE USED IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF WENDEL ENGINEERS.  
UNAUTHORIZED ALTERATION OR ADDITION TO ANY SURVEY DRAWING, DESIGN, SPECIFICATION, PLAN OR REPORT IS A VIOLATION OF SECTION 2020, PROVISION 2 OF THE NEW YORK STATE EDUCATION LAW.

NO.	BY	REVISIONS	DATE
5	DJY	RECORD DRAWING	10/11/12
4	SNW	ISSUED FOR REBID	2/24/11
3	DJY	ISSUED FOR BID	10/21/10
2	SNW	ISSUED FOR AGENCY APPROVAL	9/28/10
1	SNW	ISSUED FOR AGENCY REVIEW	8/2/10
0	DJY	ISSUED FOR AGENCY REVIEW	7/16/10

DWG. TITLE  
**LOCKPORT ROAD  
PLAN & PROFILE**

DATE	7/16/10
SCALE	AS NOTED
DWN.	DJY
CHK.	RDK
PROJ. No.	31460703
DWG. No.	

RECORDED CONSTRUCTION REVISIONS INCLUDED.  
ALL DIMENSIONS ARE SUBJECT TO VERIFICATION.  
DATE: OCTOBER 1, 2012

**C130**



DATE  
 START 6/1/2015  
 FINISH 6/1/2015  
 SHEET 1 OF 1

**SJB SERVICES, INC.**  
**SUBSURFACE LOG**



HOLE NO. B-169  
 SURF. ELEV 601.63  
 G.W. DEPTH See Notes

PROJECT: NIAGARA COUNTY WATER - ADDITIONAL BORINGS LOCATION: LOCKPORT ROAD AT CAMPBELL  
 PROJ. NO.: BD-14-163-A LOCKPORT, NEW YORK

DEPTH FT.	SMPL NO.	BLOWS ON SAMPLER				SOIL OR ROCK CLASSIFICATION	NOTES
		0/6	6/12	12/18	N		
5	1	10	16			Brown and Black f-c SAND, little f-c Gravel (moist, FILL)	Organics Present in Sample #2 and #3
		6	4		22		
	2	4	9				
		19	28		28		
	3	8	4				
		15	15		19		
10	4	9	8			Light Brown f-c SAND, tr.gravel, tr.silt (moist-wet, firm, SW)	Contains "and" f-c Gravel (wet, v.compact)
		13	24		21		
	5	17	29				
	32	50/0.3		61	Contains tr.dolostone fragments	REF = Sample Spoon Refusal	
	6	38	50/0.4	REF			
15						Boring Complete with Sample Spoon Refusal at 10.9'	Free Standing Water recorded at 5.1' at Boring Completion
20							

N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW CLASSIFIED BY: Geologist  
 DRILLER: J. FRIDMAN DRILL RIG TYPE: CME-75  
 METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS

DATE  
 START 10/11/2017  
 FINISH 10/11/2017  
 SHEET 1 OF 1

**SJB SERVICES, INC.**  
**SUBSURFACE LOG**



HOLE NO. B-1  
 SURF. ELEV. \_\_\_\_\_  
 G.W. DEPTH See Notes

PROJECT: PROPOSED WATER LINE LOCATION: PHASE II  
 PROJ. NO.: BD-17-096 LOCKPORT, NY

DEPTH FT.	SMPL NO.	BLOWS ON SAMPLER				SOIL OR ROCK CLASSIFICATION	NOTES
		0/6	6/12	12/18	N		
0	1	1	3			TOPSOIL Dark Brown Silty CLAY, little f-c Sand, tr.organics (moist, FILL) Brown Silty CLAY and f-c Sand, little fine Gravel (moist, medium, CL) (moist-wet)	Driller noted Topsoil at the ground surface  REF = Sample Spoon Refusal
		4	4		7		
1	2	7	9			Boring Complete with Auger Refusal at 3.8'	No Free Standing Water encountered at Boring Completion
		50/0.3			REF		
5							
10							
15							
20							

N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW CLASSIFIED BY: Geologist  
 DRILLER: S. WOLKIEWICZ DRILL RIG TYPE: CME-550X  
 METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS

**EXPLORATION PLAN**

Hinman Road Waterline Replacement ■ Lockport, NY

July 6, 2020 ■ Terracon Project No. BU205010

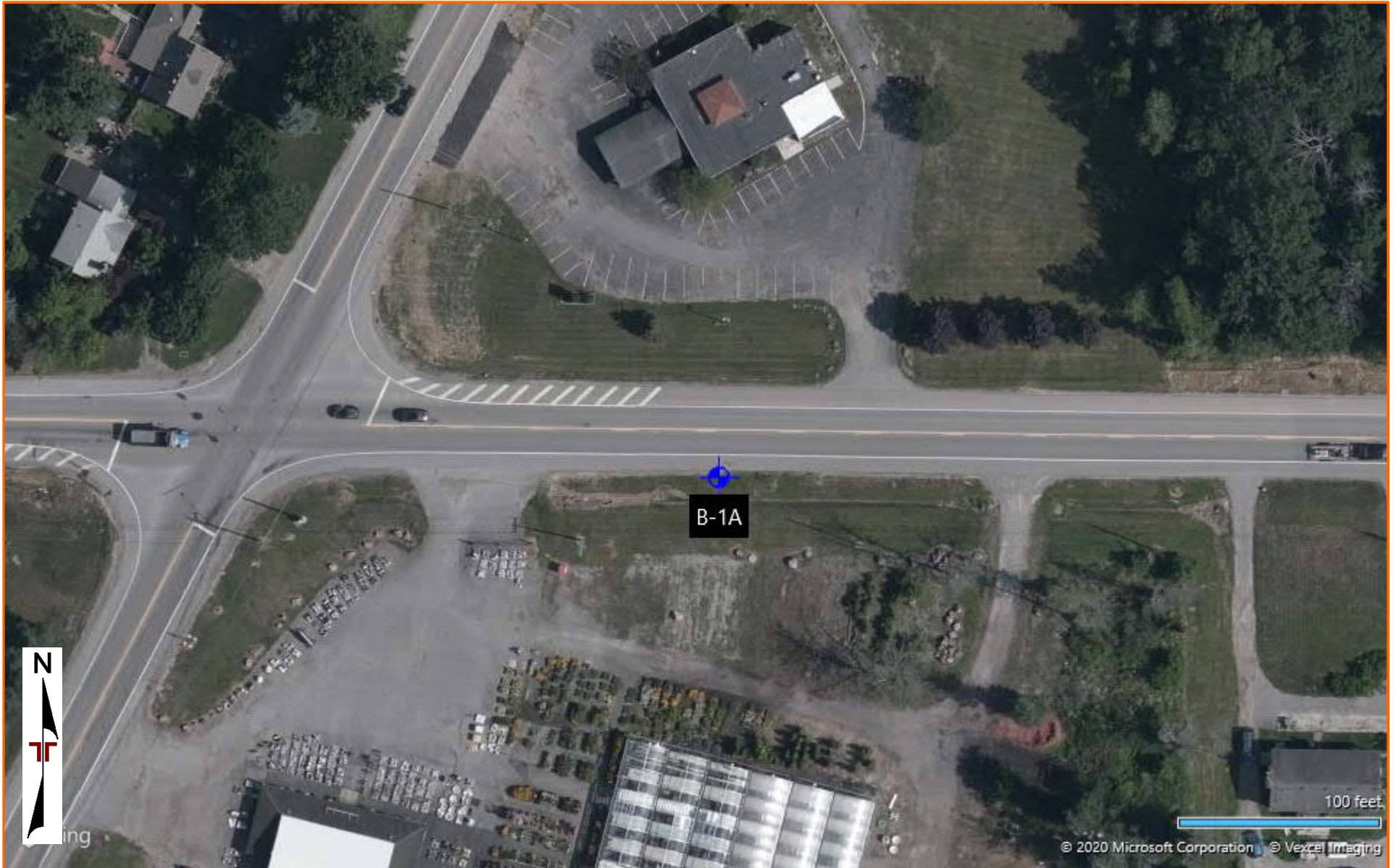


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

# BORING LOG NO. B-1A

**PROJECT:** Hinman Road Waterline Replacement

**CLIENT:** Town of Lockport NY  
Lockport, NY

**SITE:** Various locations - Lockport & Hinman Rds.  
Lockport, NY

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL\_BU205010 HINMAN ROAD WATER.GPJ MODELLAYER.GPJ 7/16/20

GRAPHIC LOG	LOCATION See <a href="#">Exploration Plan</a> Front of Boka Farms Latitude: 43.1332° Longitude: -78.7557°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (in.)	FIELD TEST RESULTS	RQD (%)
	Approximate Surface Elev.: 601.0 (Ft.) +/- ELEVATION (Ft.)						
DEPTH							
2.0	<b>FILL - SANDY SILT</b> , trace gravel, trace asphalt fragments, brown and black	599+/-			12	11-10-7-5 N=17	
4.0	<b>SILT WITH SAND (ML)</b> , trace gravel, red brown, very stiff	597+/-			14	8-12-14-14 N=26	
6.0	<b>SILTY SAND (SM)</b> , trace gravel, red brown, medium dense	595+/-			20	6-6-9-12 N=15	
8.0	<b>SILTY SAND (SM)</b> , fine grained, brown, dense	593+/-	▽		11	21-26-24-22 N=50	
9.5	<b>WEATHERED DOLOSTONE</b> , brown gray	591.5+/-			10	48-44-50/2"	
14.5	<b>DOLOSTONE</b> , brown gray, fine-grained, slightly fractured to sound, close fracture spacing, thin to medium bedded, unweathered, strong rock	586.5+/-			56	RUN # 1 9.5' - 14.5'	78
	<b>Boring Terminated at 14.5 Feet</b>						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Rope and Cathead

**Advancement Method:**  
4.25 inch ID Hollow Stem Augers and 2 inch OD Split Barrel Sampler to 9.5' BGS  
NQ-2 size core barrel 9.5' - 14.5'

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

**Abandonment Method:**  
Boring backfilled with auger cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

Elevations were provided by others.

**WATER LEVEL OBSERVATIONS**

▽ 7' BGS prior to coring



Boring Started: 06-16-2020

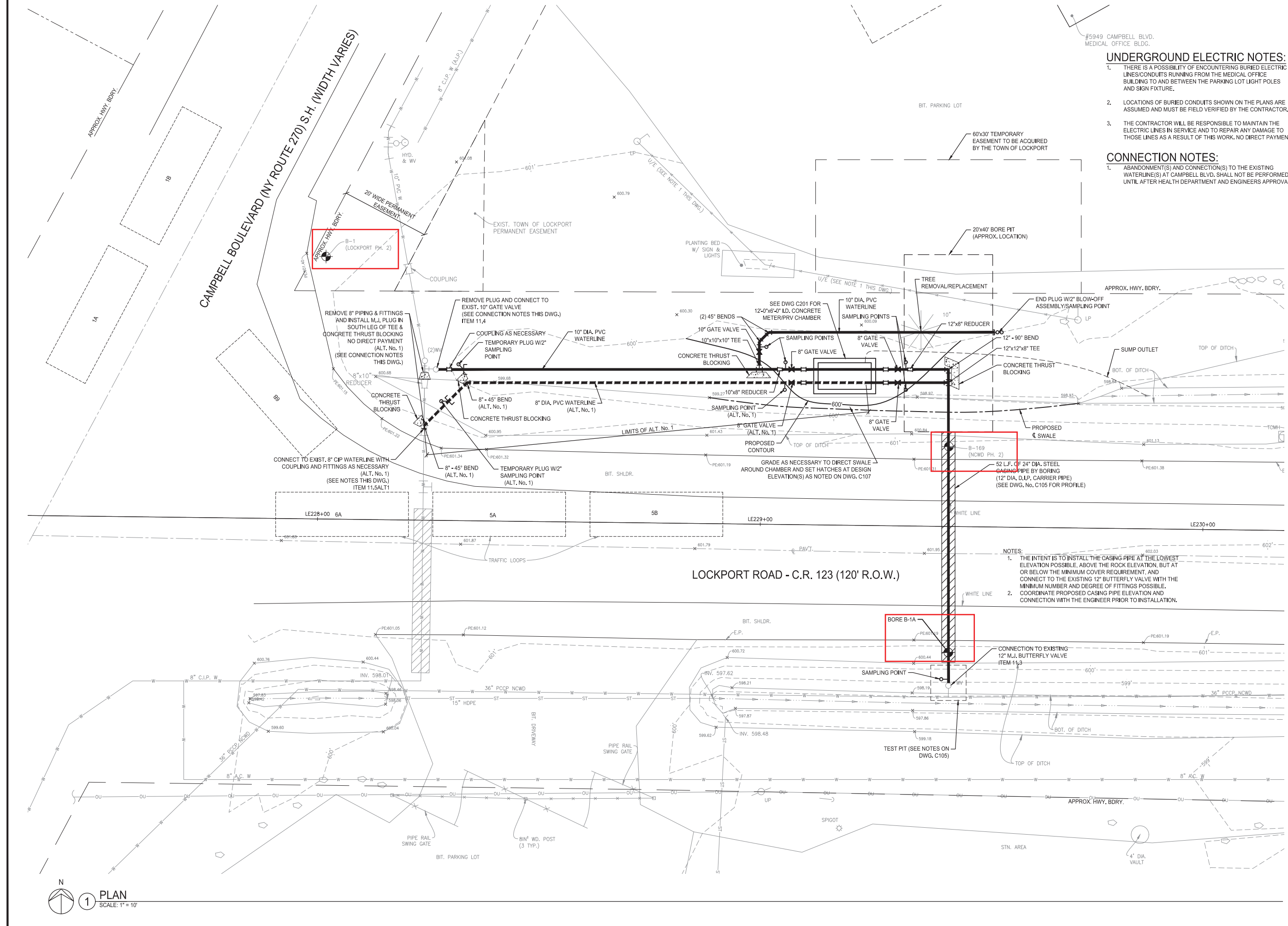
Boring Completed: 06-16-2020

Drill Rig: CME-75

Driller: J. Loomis

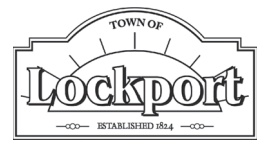
Project No.: BU205010





- UNDERGROUND ELECTRIC NOTES:**
1. THERE IS A POSSIBILITY OF ENCOUNTERING BURIED ELECTRIC LINES/CONDUITS RUNNING FROM THE MEDICAL OFFICE BUILDING TO AND BETWEEN THE PARKING LOT LIGHT POLES AND SIGN FIXTURE.
  2. LOCATIONS OF BURIED CONDUITS SHOWN ON THE PLANS ARE ASSUMED AND MUST BE FIELD VERIFIED BY THE CONTRACTOR.
  3. THE CONTRACTOR WILL BE RESPONSIBLE TO MAINTAIN THE ELECTRIC LINES IN SERVICE AND TO REPAIR ANY DAMAGE TO THOSE LINES AS A RESULT OF THIS WORK. NO DIRECT PAYMENT.
- CONNECTION NOTES:**
1. ABANDONMENT(S) AND CONNECTION(S) TO THE EXISTING WATERLINE(S) AT CAMPBELL BLVD. SHALL NOT BE PERFORMED UNTIL AFTER HEALTH DEPARTMENT AND ENGINEERS APPROVAL.

- NOTES:**
1. THE INTENT IS TO INSTALL THE CASING PIPE AT THE LOWEST ELEVATION POSSIBLE, ABOVE THE ROCK ELEVATION, BUT AT OR BELOW THE MINIMUM COVER REQUIREMENT, AND CONNECT TO THE EXISTING 12" BUTTERFLY VALVE WITH THE MINIMUM NUMBER AND DEGREE OF FITTINGS POSSIBLE.
  2. COORDINATE PROPOSED CASING PIPE ELEVATION AND CONNECTION WITH THE ENGINEER PRIOR TO INSTALLATION.



**TOWN OF LOCKPORT**  
 TOWN HALL  
 6560 DYSINGER ROAD  
 LOCKPORT, NEW YORK

**HINMAN ROAD WATERLINE REPLACEMENT AND LOCKPORT/PENDLETON METER PIT**

**CONTRACT No. 160W**



NOTE:  
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NO.	REVISIONS	DATE
C	ISSUED FOR BID	11-20-2020
B	ISSUED FOR HEALTH DEPARTMENT REVIEW	06-19-2020
A	ISSUED FOR AGENCY REVIEW	02-09-2020

**LOCKPORT/PENDLETON METER/PRV PIT SITE PLAN**



DATE: 11-20-2020  
 SCALE: AS NOTED  
 DWN: KSK CHK: MCR  
 PROJ. No. 0949179  
 DWG. No.

**C106**





## **APPENDIX D**

# **NYSDEC ENVIRONMENTAL RESOURCES MAP AND NATIONAL WETLAND INVENTORY MAP**



# Campbell Boulevard



February 20, 2023

Legend:

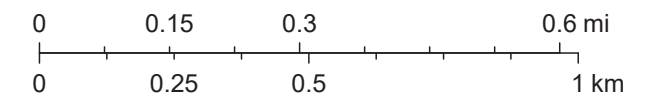
Rare Plants & Animals



State Regulated Freshwater  
Wetland/Check Zone

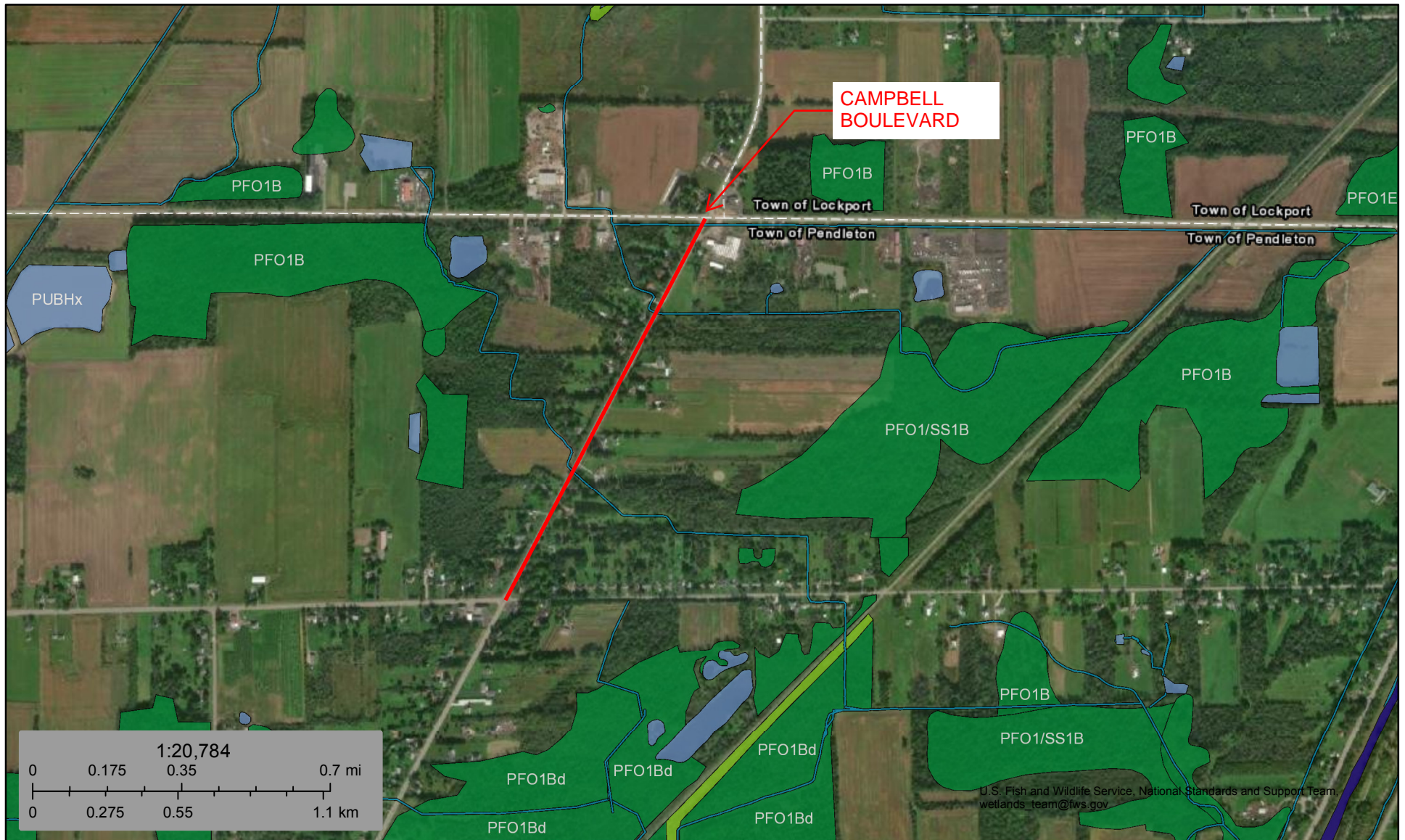


1:18,056




Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community





February 20, 2023

### Wetlands

- |  |   |  |
|--|---|--|
|  Estuarine and Marine Deepwater |  Freshwater Emergent Wetland       |  Lake     |
|  Estuarine and Marine Wetland   |  Freshwater Forested/Shrub Wetland |  Other    |
|  |  Freshwater Pond                   |  Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.







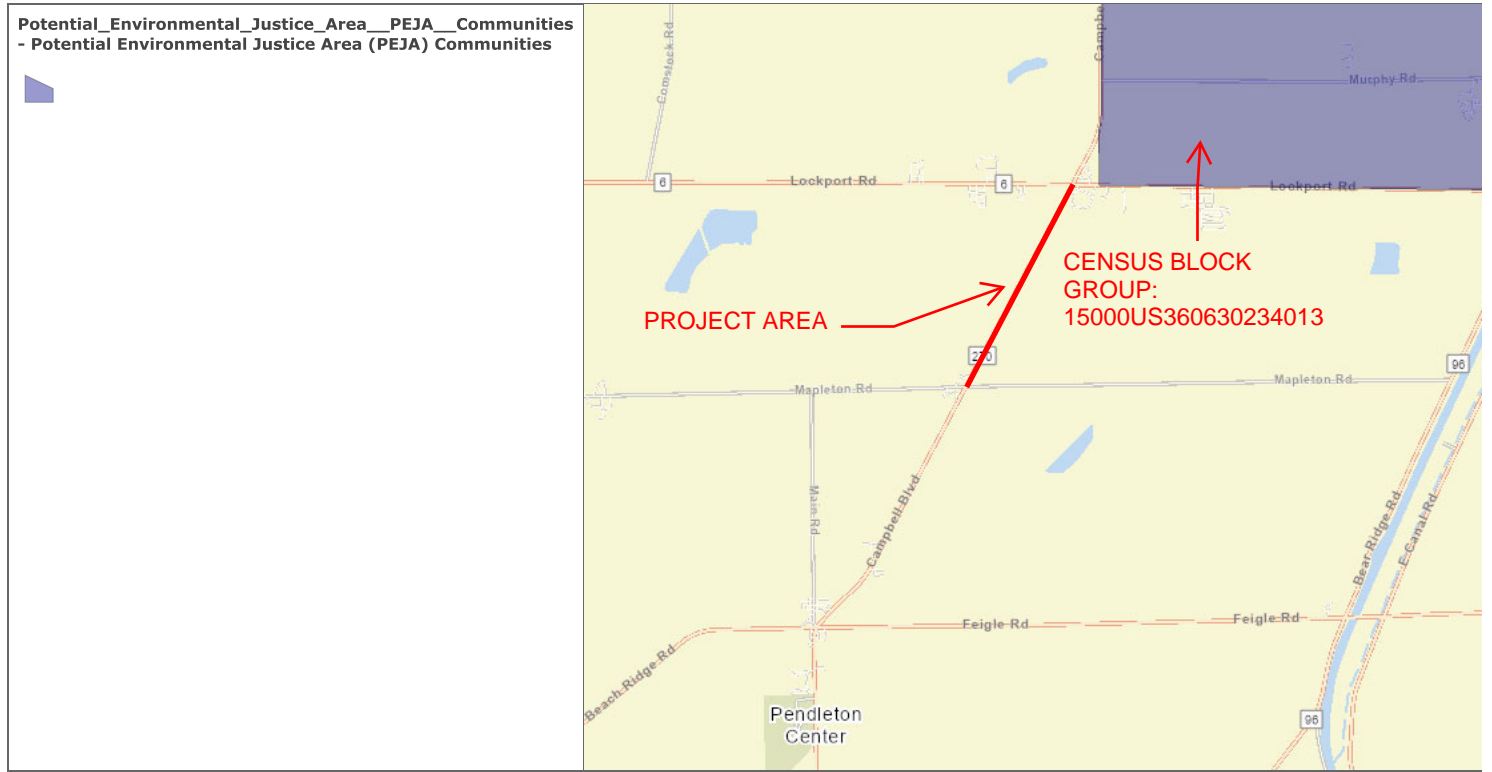
**APPENDIX E**

**ENVIRONMENTAL JUSTICE AREAS**



# My Map

Potential Environmental Justice Area (PEJA) Communities  
- Potential Environmental Justice Area (PEJA) Communities



Data collection: US Census Bureau Data analysis: David E. Witt, New York State Department of Environmental Conservation, Office of Environmental Justice (OEJ) Funding: NYS Taxpayers Community Maps Contributors, Province of Ontario, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau





**APPENDIX F**

**FEMA FLOOD INSURANCE RATE MAP**



**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 0.7 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 tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables 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.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 18. The **horizontal datum** was NAD 83, GRS1980. 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, NNGS12  
National Geodetic Survey  
SSMC-3, #9202  
1315 East-West Highway  
Silver Spring, Maryland 20910-3282

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 in digital format by the New York State Office of Cyber Security & Critical Infrastructure Coordination. This information was provided as 30-centimeter and 60-centimeter resolution natural color and 30-centimeter resolution color infrared orthoimagery from photography dated April 2005.

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 in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. Also, the road to floodplain relationships for unreviewed 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.

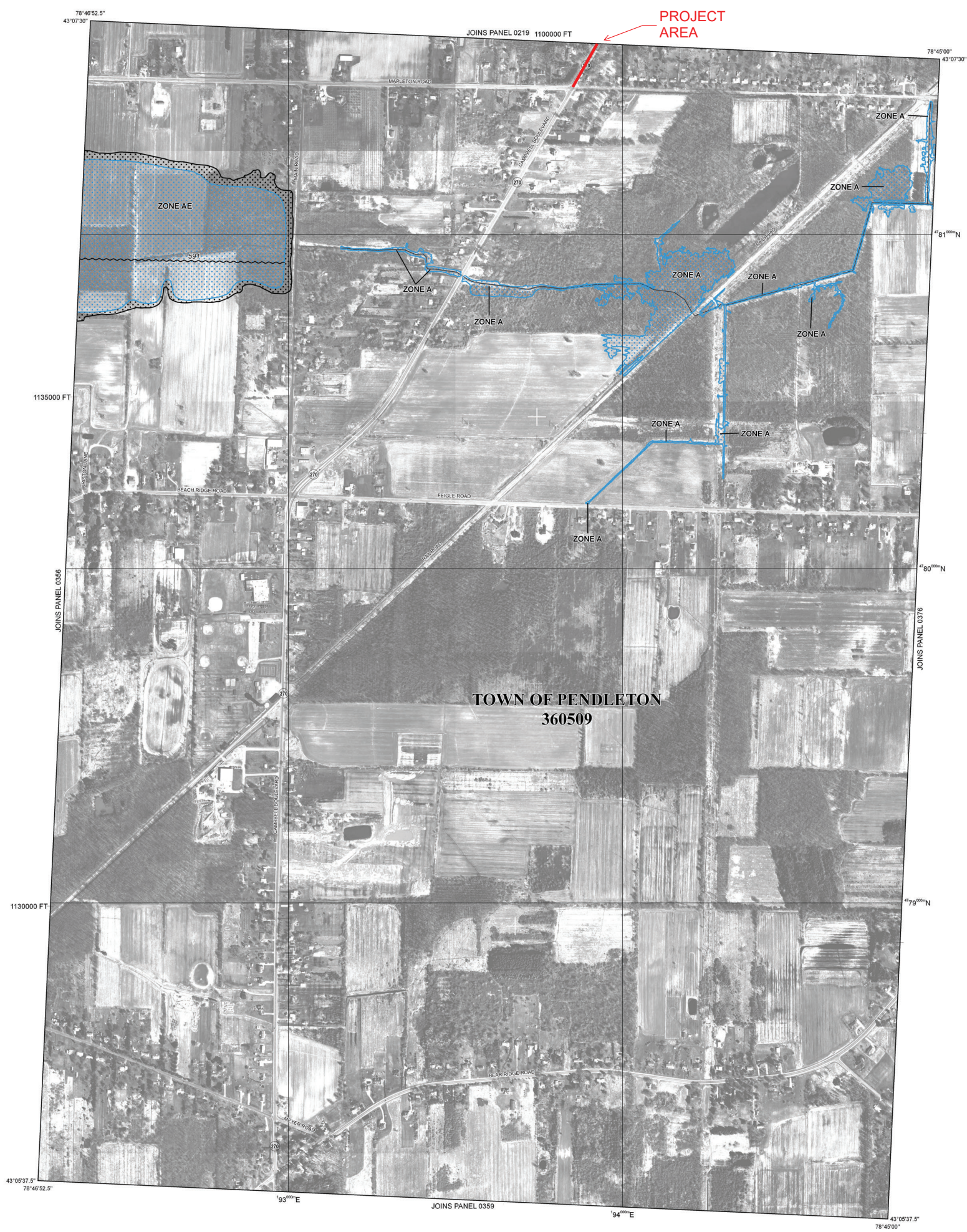
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which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

Contact the **FEMA Map Service Center** at 1-800-358-9616 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 FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at <http://mssc.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>.



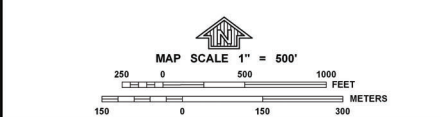
This digital FIRM was produced through a unique cooperative partnership between the New York State Department of Environmental Conservation (NYSDEC) and FEMA. As part of the effort, NYSDEC has joined in a Cooperative Technical Partnership agreement to produce and maintain FEMA's digital FIRM.



**PROJECT AREA**

**LEGEND**

- SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD
- The 1% annual 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 Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently derelict. 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 Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 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 (NAVD 88)
- Cross section line
- Transect line
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 1000-meter Universal Transverse Mercator grid values, zone 18
- 600000 FT 5000-foot ticks: New York State Plane coordinate system, west zone (FPZ3ZONE 3103), Transverse Mercator
- DX5510 x Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M 1.5 River Mile
- MAP REPOSITORY
- Refer to listing of Map Repositories on Map Index
- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP  
September 17, 2010
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL



**NATIONAL FLOOD INSURANCE PROGRAM**

PANEL 0357E

**FIRM**

FLOOD INSURANCE RATE MAP

for NIAGARA COUNTY, NEW YORK  
(ALL JURISDICTIONS)

CONTAINS:

COMMUNITY	NUMBER
PENDELTON, TOWN OF	360509

PANEL 357 OF 430  
MAP SUFFIX: E  
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

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**  
36063C0357E

**EFFECTIVE DATE**  
SEPTEMBER 17, 2010

Federal Emergency Management Agency





**NOTES TO USERS**

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NGS Information Services  
NOAA, NNGS-12  
National Geodetic Survey  
SSMC-3, #6202  
1315 East-West Highway  
Silver Spring, Maryland 20910-3282

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 in digital format by the New York State Office of Cyber Security & Critical Infrastructure Coordination. This information was provided as 30-centimeter and 60-centimeter resolution natural color and 30-centimeter resolution color infrared orthomage from photography dated April 2005.

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 in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. Also, the road to floodplain relationships for unreviewed 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.

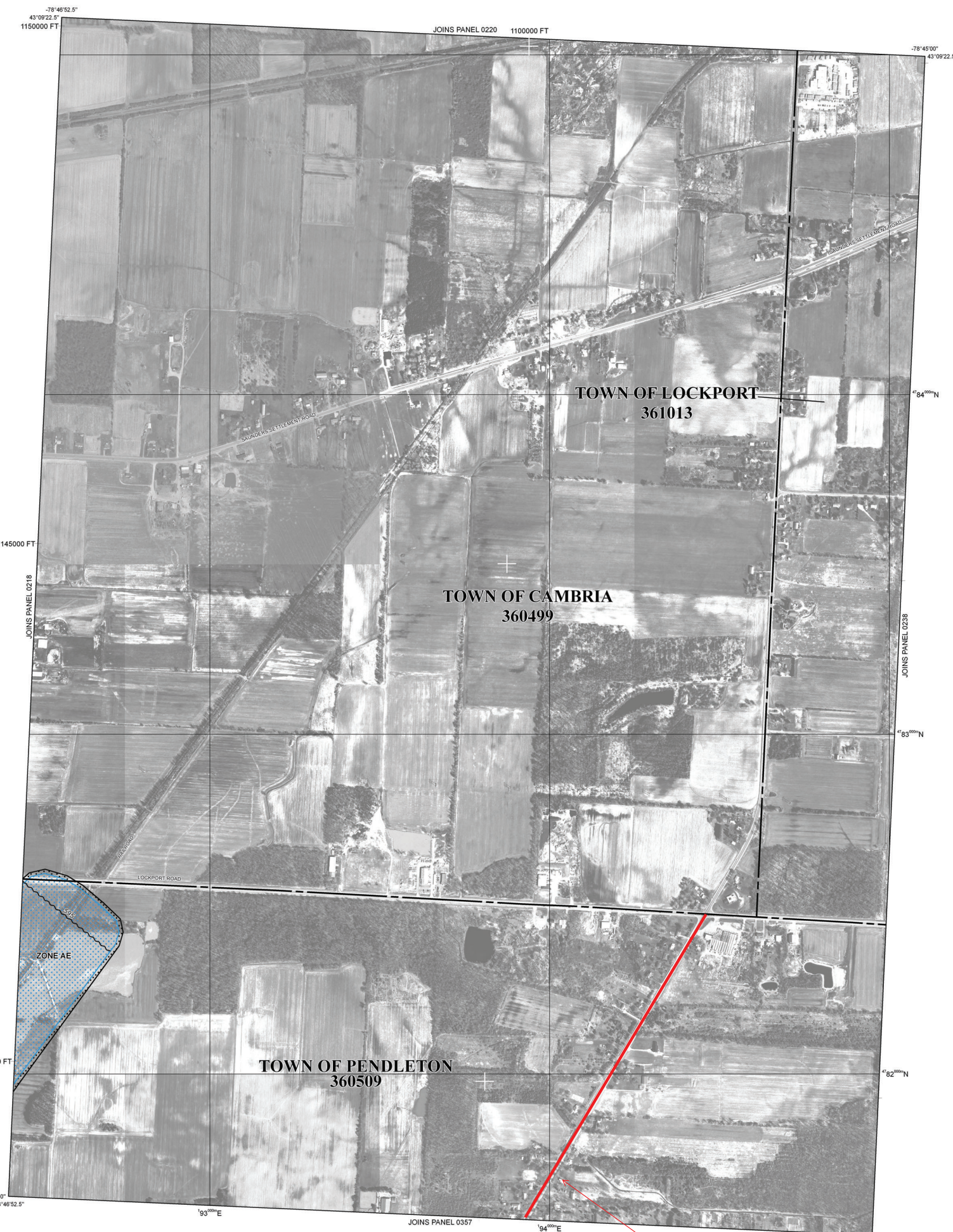
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which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

Contact the **FEMA Map Service Center** at 1-800-358-9616 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 FEMA Map Service Center 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/>.

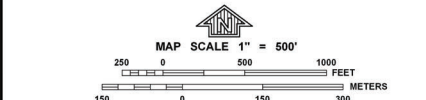


This digital FIRM was produced through a unique cooperative partnership between the New York State Department of Environmental Conservation (NYSDEC) and FEMA. As part of the effort, NYSDEC has joined in a Cooperative Technical Partnership agreement to produce and maintain FEMA's digital FIRM.



**LEGEND**

- SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY 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 Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently deteriorated. 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 Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- Base Flood Elevation line and value; elevation in feet\*
- Base Flood Elevation value where uniform within zone; elevation in feet\*
- \* Referenced to the North American Vertical Datum of 1988 (NAVD 88)
- Cross section line
- Transect line
- 87°07'45", 32°22'23" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 76°N 1000-meter Universal Transverse Mercator grid values, zone 18
- 600000 FT 5000-foot ticks: New York State Plane coordinate system, west zone (PPSZONE 3103), Transverse Mercator
- DX5510 x Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 River Mile
- MAP REPOSITORY Refer to listing of Map Repositories on Map Index
- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP September 17, 2010
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL



**NATIONAL FLOOD INSURANCE PROGRAM**

**PANEL 0219E**

**FIRM**

**FLOOD INSURANCE RATE MAP**

for NIAGARA COUNTY, NEW YORK (ALL JURISDICTIONS)

CONTAINS:	COMMUNITY	NUMBER
	CAMBRIA, TOWN OF	360499
	LOCKPORT, TOWN OF	361013
	PENDLETON, TOWN OF	360509

**PANEL 219 OF 430**

**MAP SUFFIX: E**

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

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**  
36063C0219E

**EFFECTIVE DATE**  
SEPTEMBER 17, 2010

Federal Emergency Management Agency





## **APPENDIX G**

# **TOWN OF LOCKPORT & TOWN OF PENDLETON INTERMUNICIPAL AGREEMENT DOCUMENTATION**



## **AGREEMENT**

**THIS AGREEMENT** made this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_, between the TOWN OF PENDLETON, Niagara County, New York and the PENDLETON WATER DISTRICT ("PENDLETON"), and the TOWN OF LOCKPORT, Niagara County, New York, and the TOWN OF LOCKPORT WATER DISTRICT NO. 3 ("Lockport").

**WHEREAS**, Pendleton and Lockport entered into an Indenture dated May 1, 1962 concerning certain water distribution facilities (the "1962 Indenture") and

**WHEREAS**, pursuant to the 1962 Indenture Pendleton and Lockport jointly owned and were jointly responsible for the maintenance of 1) a 10 inch cast iron water line, hydrants, and service connections on the east side of Transit Road in Lockport between Tonawanda Creek Road and Robinson Road, (the "Transit Road Line"), and 2) an eight inch cast iron water line, hydrants, and meter pit on Campbell Boulevard between Mapleton Road and Pendleton's northern border (the "Campbell Boulevard Line"), and

**WHEREAS**, Pendleton and Lockport entered into a further Indenture in 1968 concerning additional water distribution facilities (the "1968 Indenture"), and

**WHEREAS**, pursuant to the 1968 Indenture, Pendleton and Lockport jointly owned and maintained an asbestos cement water line of varying diameter located on the south side of Robinson Road in Pendleton, extending from the intersection of Robinson

Road and Transit Road westerly to East Canal Road (the "Robinson Road Line"), and

**WHEREAS,** the Transit Road Line has been completely abandoned/replaced by both Pendleton and Lockport, and each now owns and maintains its own line servicing this area, and

**WHEREAS,** a portion of the Robinson Road Line has been abandoned/replaced, and the Town of Lockport does not currently use and has no need to use the remaining portion of the Robinson Road Line, and

**WHEREAS,** Lockport intends to construct an improvement to its water distribution system in 2020 whereby it will install an inter-connection with a Niagara County Water District water main at the intersection of Campbell Boulevard and Lockport Road (the "2020 Project"). Pendleton may also wish to inter-connect its water system to the NCWD line at this same point, which would benefit its water system, and

**WHEREAS,** upon completion of the 2020 Project, Lockport will have no further use or need of the Campbell Boulevard Line,

**NOW THEREFORE,** in consideration of the above premises and the mutual obligations stated below, the parties hereby agree:

1) That Lockport hereby relinquishes, gives, abandons and quit claims all of its interest, rights and responsibilities concerning the Robinson Road Line, including any easements, licenses, or property rights which it has pertaining thereto, to Pendleton.

2) That Lockport will design the 2020 Project to include the ability for Pendleton to also inter-connect with the Niagara County Water District Line at Campbell Boulevard and Lockport Road, and Pendleton will bear the cost of inter-connecting Pendleton's water system at that point.

3) Upon completion of the 2020 Project, all of Lockport's interest, rights and responsibilities concerning the Campbell Boulevard Line, including any easements, licenses, and property rights pertaining thereto, shall be relinquished, given, abandoned and quit claimed to Pendleton without the need for any further action.

4) That the parties shall request that metering and billing of water from the Niagara County Water District to Lockport and Pendleton affected by this Agreement be adjusted to reflect the above, i.e., water from the Niagara County Water District supplying the Campbell Boulevard Line shall be billed to Pendleton instead of Lockport.

[Signature page follows]

IN WITNESS THEREOF, the parties have set their signatures

below:

TOWN OF LOCKPORT and  
LOCKPORT WATER DISTRICT NO. 3

*Mark Crocker*

Mark C. Crocker  
Town Supervisor

*2 Dec 19*

Date

TOWN OF PENDLETON and  
PENDLETON WATER DISTRICT

Joel Maerten  
Town Supervisor

Date

STATE OF NEW YORK )  
COUNTY OF NIAGARA ) ss.:

On the *2nd* day of *December* in the year 2019, before me, the undersigned, a notary public in and for said state, personally appeared **MARK C. CROCKER** personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within Instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the Instrument, the individual(s) or the person upon behalf of which the individual(s) acted, executed the Instrument.

**BRIAN D. SEAMAN**  
Reg. No. 02SE6165824  
Notary Public, State of New York  
Qualified in Niagara County  
My Commission Expires 05/14/20 *23*

*Brian D. Seaman*

Notary Public

STATE OF NEW YORK )  
COUNTY OF NIAGARA ) ss.:

On the \_\_\_\_\_ day of \_\_\_\_\_ in the year 2019, before me, the undersigned, a notary public in and for said state, personally appeared **JOEL MAERTEN** personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within Instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the Instrument, the individual(s) or the person upon behalf of which the individual(s) acted, executed the Instrument.

\_\_\_\_\_  
Notary Public



## AGREEMENT

THIS AGREEMENT, made this \_\_\_\_\_ day of \_\_\_\_\_, 2021, by and between the Town of Lockport, in the County of Niagara, a municipal corporation formed and existing pursuant to the laws of the State of New York, hereinafter referred to as "Lockport", party of the first part, and the Town of Pendleton, in the County of Niagara, a municipal corporation formed and existing under the laws of the State of New York, hereinafter referred to as "Pendleton", party of the second part, and the Niagara County Water District, a municipal corporation formed and existing under the laws of the State of New York, hereinafter referred to as the "District".

### WITNESSETH:

WHEREAS, Lockport and Pendleton entered into an intermunicipal agreement, dated December 23, 2019, whereby the Towns contemplated the installation of an interconnection with a Niagara County Water District water main, located at the intersection of Campbell Boulevard and Lockport Road, and

WHEREAS, Lockport and Pendleton wish to have the ability to tie into said water main for purposes of supplementing and improving their respective distribution systems, and

WHEREAS, Lockport and Pendleton are member Towns of the Niagara County Water District, and

WHEREAS, both Towns have finished preparations for said project and are scheduled to begin installation of their respective interconnections, and

WHEREAS, Lockport, Pendleton, and the Niagara County Water District wish to establish their respective responsibilities and costs,

NOW, THEREFORE, it is hereby agreed by and between the parties as follows:

1. This is an inter-municipal contract, pursuant to Article 5G of the General Municipal Law.
2. The Towns have previously agreed on the terms to fully fund the construction of said connection including the meter pit and lines, connections, meters and all appurtenances.
3. The Towns shall bear equal responsibility for the repair, maintenance and replacement of the meter pit to be installed pursuant to this agreement, and for all their respective lines and appurtenances downstream from said meter pit.

4. The Towns shall pay the Niagara County Water District for all metered water received through each respective interconnection at the Niagara County Water District member rate, as established from time to time.

5. After installation, the Niagara County Water District shall have control of the meter pit and be responsible for the reading, maintaining and replacement of the meters and operating systems in the meter pit. The District shall further be responsible for any line(s) extending to the District water main from the pit installed thereto.

6. This contract shall continue for a period of 40 years, and shall thereafter renew automatically from year to year unless terminated by the parties hereto upon one year's notice in writing.

IN WITNESS WHEREOF, the parties have hereunto executed this agreement and caused the same to be signed by their respective authorized officers who have caused their respective seals to be affixed the day and year set opposite their respective signatures.

TOWN OF LOCKPORT

By: 

Mark Crocker, Supervisor

TOWN OF PENDLETON

By: \_\_\_\_\_

Joel Maerten, Supervisor

NIAGARA COUNTY WATER DISTRICT

By: 

W. Ross Annable, Chairman



## **APPENDIX H**

# **WATER DEMAND CALCULATIONS**



### Project Area Information

	Value	Units	Ref. #
Population	<b>7,035</b>	People	1
Service Connections	<b>2,703</b>	Connections	1
Town of Pendleton Average Population Per Household	2.6	People/House	1
Total Number of Houses in Project Area	<b>31</b>	Houses	2
Total Water Used By Customers 2021	<b>180,859,500</b>	Gallons	1
Average Water Use Per Household	183	Gallons/Household/Day	1
Peak Daily Flow	<b>802,553</b>	Gallons/Day	1
Average Daily Flow	495,505	Gallons/Day	1
Maximum Water Demand Factor	<b>2</b>	--	
Peak Flow Factor	<b>4</b>	--	
Needed Fire Flow	<b>500</b>	Gallons/Minute	3

### Calculations

	Value	Units
Project Area Population	81	People
Average Daily Water Demand	<b>5,683</b>	<b>Gallons/Day</b>
Average Daily Water Demand	4	Gallons/Minute
Maximum Daily Water Demand	<b>11,366</b>	<b>Gallons/Day</b>
Maximum Daily Water Demand	8	Gallons/Minute
Peak Flow	<b>22,731</b>	<b>Gallons/Day</b>
Peak Flow	16	Gallons/Minute
Fire Flow	416,023	Gallons/Day
Fire Flow	<b>289</b>	<b>Gallons/Minute</b>

### Notes

- Blue text indicates values given from references. Black text indicates calculated values.

### References

1	<a href="https://pendletonny.us/wp-content/uploads/2022/04/AWQR-2021-NCWD-Town-of-Pendleton.pdf">https://pendletonny.us/wp-content/uploads/2022/04/AWQR-2021-NCWD-Town-of-Pendleton.pdf</a>
2	Niagara County Tax Map
3	<a href="https://www.isomitigation.com/siteassets/downloads/guide-determinerequiredfireflow.pdf">https://www.isomitigation.com/siteassets/downloads/guide-determinerequiredfireflow.pdf</a>





**APPENDIX I**

**CAPACITY DEVELOPMENT PROGRAM EVALUATION**





# **CAPACITY DEVELOPMENT PROGRAM**

## **TECHNICAL, MANAGERIAL, AND FINANCIAL EVALUATION CRITERIA FOR: COMMUNITY PUBLIC WATER SYSTEMS**

---

SYSTEM NAME: \_\_\_\_\_

COUNTY: \_\_\_\_\_ PWSID #: \_\_\_\_\_

COMPLETED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

Updated May 16, 2023

---

### **Technical Capacity**

#### **A. System Infrastructure**

1. Does the system have as-built plans, drawings, or maps of its facilities including source, treatment, storage, and distribution?

Yes       No       Not Applicable

If the system lacks certain plans, please specify:

\_\_\_\_\_  
\_\_\_\_\_

2. Does the system have exact location measurements of all main valves and service shut-offs?

Yes       No       Not Applicable

3. Can the system's pumping, storage and distribution facilities meet current normal and peak demands and required distribution pressures?

Yes       No       Not Applicable

4. Does the system have a water conservation plan?

Yes       No       Not Applicable

5. Are all customers on the water system metered?

Yes       No       Not Applicable

6. Is the system equipped with "master" meters that measure the amount of water the system produces or purchases for each source of water?

Yes       No       Not Applicable

Note: Treated drinking water provided by NCWD under a bulk service agreement.

## B. Source Water Evaluation

1. Does the system have a copy of its Source Water Assessment?  
 Yes       No       Not Applicable
2. Has a yield analysis been done for the system's source?  
 Yes       No       Not Applicable
3. Does the system have a description of the existing source-pumping capacity and the system's raw and finished water storage capacity?  
 Yes       No       Not Applicable
4. For groundwater systems, does your system have a wellhead protection program in place?  
 Yes       No       Not Applicable

## C. Technical Knowledge

1. Has an evaluation of the water system facilities been conducted with respect to its ability to reliably meet current and proposed State and Federal drinking water regulations?  
 Yes       No       Not Applicable

If system can't meet regulations, please specify:

---

---

2. Does the system have monthly water production records or treatment records that show daily and monthly water production for each source used by the system?  
 Yes       No       Not Applicable
3. Has an evaluation been conducted to document the condition and remaining service life of existing facilities?  
 Yes       No       Not Applicable
4. Has the system been cited within the past two years for failing to sample and report test results?  
 Yes       No       Not Applicable
5. Has the system been cited within the past two years for operating deficiencies as a result of a sanitary survey or other inspection conducted by the DOH?  
 Yes       No       Not Applicable

6. If you answered "Yes" to Questions 4 or 5, has corrective action been taken to correct all deficiencies?

Yes       No       Not Applicable

**D. Certified Operators**

1. Does the water system have a certified water operator(s) and designated an operator in responsible charge?

Yes       No

2. If the water system does not have a state-certified water treatment operator, or lacks the necessary number of operators to safely and reliably operate the system, does the system have a plan to acquire the services of a (additional) state-certified operator?

Yes       No       Not Applicable

**Managerial Capacity**

**A. Staffing and Organization**

1. What type of training/continuing education did system personnel attend within the last two years (please specify)?

---

---

---

2. Who is responsible for policy and operational decisions for the water system (*name and title*)?

---

3. Who is responsible for ensuring compliance with state regulatory requirements (*name and title*)?

---

4. Who is responsible for approving expenditures (*name and title*)?

---

5. *For systems that contract for system operation or management:* Does the system have a valid (signed) contract that summarizes the duties and responsibilities the contractor must provide to the system?

Yes       No       Not Applicable

## B. Ownership

1. *If the system is under temporary ownership*, has a future owner been found for the water system?

Yes       No       Not Applicable

If "Yes", who will the future owner be?

---

2. *For systems that use, but do not own, land or facilities that are essential to water system operation*: Is there a valid long-term contract (i.e., lease) between the water system and the owner of the land or facilities essential to the operation of the system?

Yes       No       Not Applicable

3. *For systems with a single proprietor*: Does the system have a contingency plan for continuing system operation in the event the owner becomes incapable of carrying out his/her responsibilities?

Yes       No       Not Applicable

## C. Consolidation/Restructuring

Note: In 2019, Pendleton, by resolution, agreed to enter into an agreement with the Town of Lockport to take ownership.

1. Has the system examined the feasibility of:  
a) Incorporating with an existing water system in the immediate proximity?

Yes       No       Not Applicable

- b) Selling ownership to an existing water system?

Yes       No       Not Applicable

- c) Contracting for the management or operation of the system with an existing system or satellite management/operations agency?

Yes       No       Not Applicable

Currently under bulk service agreement with NCWD.

## D. Emergency/Disaster Response Plans

1. Has the system developed an Emergency Response Plan?

Yes       No       Not Applicable

2. Does the Emergency Response Plan:

- a) Designate responsible personnel in the event of an emergency?

Yes       No       Not Applicable

b) Provide for emergency phone and radio capabilities?

Yes       No       Not Applicable

c) Describe public and health department notification procedures?

Yes       No       Not Applicable

3. Does the system have any emergency contract agreements under which it operates (e.g., emergency water interconnections and alternative sources)?

Yes       No       Not Applicable

**E. Water System Policies**

1. Does the system have a *written* System Operations Manual or Policy?

Yes       No       Not Applicable

**F. Record Keeping**

1. Does the system keep water utility records including: financial, regulatory, facility, operations and maintenance, data quality, Annual Water Quality Reports, and correspondence with the NYS Department of Health and/or local Health Departments (and where appropriate, the NYSPSC)?

Yes       No       Not Applicable

in coordination with  
NCWD



**Financial Capacity**

**A. Budget Projection – Revenues and Expenses**

1. Does the system have a water budget?

Yes       No       Not Applicable

2. Are the system's annual water revenues sufficient to cover the annual water expenses as well as anticipated capital improvements?

Yes       No       Not Applicable

3. Are the system's water rates, when combined with other revenue sources, sufficient to cover all listed expenditures for the water system?

Yes       No       Not Applicable

4. Does the system retain budget information for at least two years?

Yes

No

Not Applicable

## B. Reserves

1. Does the system have a reserve account (or funds within a reserve account) dedicated to:

a) Financing the emergency replacement of critical facilities in the event of their failure?

Yes

No

Not Applicable

b) The maintenance of cash flow in the event of an unexpected funding shortfall?

Yes

No

Not Applicable

2. If the system has a reserve account, how does it determine the amount to put into the account?

\_\_\_\_ Fixed Amount \_\_\_\_ Percentage of Revenues \_\_\_\_ Percentage of Expenses

\_\_\_\_ Other (please specify) \_\_\_\_\_

3. If the system has a reserve account, what type(s) of reserve account(s) does it have?

\_\_\_\_ Operation and Maintenance \_\_\_\_ Capital Projects \_\_\_\_ Debt Service

\_\_\_\_ Other (please specify) \_\_\_\_\_

## C. Capital Improvement Plan

1. How do you finance operation and maintenance costs (Check all that apply)?

\_\_\_\_ Rates collected from ratepayers

\_\_\_\_ Rental fees

\_\_\_\_ Other business revenue

\_\_\_\_ Personal capital

\_\_\_\_ Surcharges

\_\_\_\_ Reserve account

\_\_\_\_ Other (Please specify) \_\_\_\_\_

2. How did you finance your LAST major repair or improvement?

\_\_\_\_ Commercial bank loan

\_\_\_\_ Bonds

\_\_\_\_ DWSRF

\_\_\_\_ Other State or federal loan/grant program

\_\_\_\_ Surcharge

\_\_\_\_ Personal Capital

\_\_\_\_ Reserve Account

\_\_\_\_ Revenue from other business

\_\_\_\_ Other (Please specify) \_\_\_\_\_

3. What options do you have for financing your NEXT major repair or improvement?

- |                                    |   |
|------------------------------------|---|
| _____ Commercial bank loan         | _____ Bonds                                     |
| _____ DWSRF                        | _____ Other State or federal loan/grant program |
| _____ Surcharge                    | _____ Personal Capital                          |
| _____ Reserve Account              | _____ Revenue from other business               |
| _____ Other (Please specify) _____ |   |

**D. Water System Rates**

1. Does the water system management review user fee, user charge, or rate system at least once every two years?

- Yes       No       Not Applicable

2. What is the frequency of billing (e.g., 12, 6, or 4 times per/year)? \_\_\_\_\_ times/year

3. Where applicable, what are the system's water rates?

\_\_\_\_\_

4. What are rates based on?

- \_\_\_\_\_ Capital Improvement Plan and Annual Budget
- \_\_\_\_\_ Annual Budget Only
- \_\_\_\_\_ Cash on Hand
- \_\_\_\_\_ Last year's expenses
- \_\_\_\_\_ Not sure
- \_\_\_\_\_ Other (Please specify \_\_\_\_\_)

5. What was the date of the last rate increase? -

\_\_\_\_\_

**END OF DOCUMENT**







**APPENDIX J  
COST ESTIMATE**



Town of Amherst Water System Improvements ECWA Contract NC-044				ALTERNATIVE 2 WATERLINE LINING		ALTERNATIVE 3 WATERLINE REPLACEMENT	
Item Number	Description	Unit	Unit Price	Total QTY	Total Price	Total QTY	Total Price
<b>Ductile Iron Watermain Pipe</b>							
1A2	6-inch Ductile Iron Watermain	LF	\$70.00	0	\$0.00	75	\$5,250.00
<b>Polyvinyl Chloride (PVC) Watermain Pipe</b>							
1B2	8-inch PVC Watermain	LF	\$85.00	0	\$0.00	4,150	\$352,750.00
<b>Valves</b>							
2A2	8-inch Gate Valve	EA	\$3,700.00	0	\$0.00	7	\$25,900.00
2A3	8-inch Gate Valve (Existing Water Main)	EA	\$4,000.00	0	\$0.00	2	\$8,000.00
2E1	Permanent Blow Off	EA	\$2,200.00	0	\$0.00	2	\$4,400.00
<b>Fire Hydrants</b>							
3A	New Fire Hydrant Assembly	EA	\$8,500.00	0	\$0.00	8	\$68,000.00
3C	Fire Hydrant Abandonment	EA	\$1,000.00	0	\$0.00	7	\$7,000.00
<b>Test Pit Excavation and Backfill</b>							
4A	Test Pit Excavation and Backfill	EA	\$800.00	0	\$0.00	15	\$12,000.00
<b>Rock Excavation</b>							
5A	Rock Excavation	CY	\$300.00	0	\$0.00	220	\$66,000.00
<b>Select Backfill</b>							
6A	Select Backfill	CY	\$40.00	0	\$0.00	3,650	\$146,000.00
<b>Interconnections</b>							
7A	Interconnections	LS	\$15,000.00	0	\$0.00	2	\$30,000.00
<b>Water Service Connections</b>							
8A1	3/4" to 1" Service Installation	EA	\$2,000.00	0	\$0.00	30	\$60,000.00
8A2	1-1/2" and Larger Service Installation	EA	\$4,500.00	0	\$0.00	1	\$4,500.00
8C1	Additional 3/4" to 1" Copper Tubing	LF	\$11.00	0	\$0.00	1,100	\$12,100.00
8C2	Additional 1-1/2" and Larger Copper Tubing	LF	\$27.00	0	\$0.00	5	\$135.00
<b>Casing Pipe</b>							
9F	18-inch Diameter (for 8-inch pipe)	LF	\$540.00	0	\$0.00	80	\$43,200.00
<b>Restoration</b>							
11A2	Concrete Restoration - Driveway	SY	\$97.00	0	\$0.00	10	\$970.00
11A3	Gravel Restoration - Driveway	SY	\$65.00	0	\$0.00	30	\$1,950.00
11B2	Asphalt Restoration - Driveway	SY	\$65.00	0	\$0.00	150	\$9,750.00
11B3A	Asphalt Restoration - Pavement Top Course (County, Town, State 1.5-inch)	SY	\$15.00	0	\$0.00	140	\$2,100.00
11B4A	Asphalt Restoration - Pavement Binder Course (County, Town, State 2.5-inch)	SY	\$45.00	0	\$0.00	140	\$6,300.00
11B5A	Asphalt Restoration - Pavement Base Course (County/Town 4-inch)	SY	\$35.00	0	\$0.00	140	\$4,900.00
11B6	Asphalt Restoration - Cold Milling/Pavement of Asphalt Pavement	SY	\$16.00	0	\$0.00	140	\$2,240.00
11C1	Landscape Restoration - Landscaping	EA	\$11.00	0	\$0.00	4,235	\$46,585.00
11C2	Landscape Restoration - Tree Planting	EA	\$400.00	0	\$0.00	12	\$4,840.00
11C3	Landscape Restoration - Tree Removal - Less than 12-inch diameter	EA	\$130.00	0	\$0.00	1	\$143.00
11C4	Landscape Restoration - Tree Removal - Greater than 12-inch diameter	EA	\$800.00	0	\$0.00	11	\$8,800.00
<b>Testing and Disinfection</b>							
12A	Testing and Disinfection	LF	\$5.00	0	\$0.00	4,150	\$20,750.00
<b>Waterline Lining</b>							
13B	8" Waterline Lining	LF	\$175.00	4,150	\$726,250.00	0	\$0.00
<b>Extra work Items</b>							
14A	Extra Excavation (8 to 10 feet deep)	LF	\$15.00	0	\$0.00	50	\$750.00
14D	Extra Ductile Iron Fittings	LBS	\$5.00	0	\$0.00	1,325	\$6,625.00
14F	Extra Concrete	CY	\$200.00	0	\$0.00	50	\$10,000.00
14G	Flowable Fill	CY	\$200.00	0	\$0.00	100	\$20,000.00
<b>Temporary Watermain</b>							
15A	Temporary Water Main	LF	\$50.00	0	\$0.00	4,560	\$228,000.00
15B	Temporary Water Service	EA	\$1,200.00	0	\$0.00	31	\$37,200.00
<b>Repair Crew Labor and Equipment</b>							
16A	Repair Crew Labor and Equipment	HRS	\$375.00	0	\$0.00	96	\$36,000.00
<b>Construction Allowance</b>							
17A	Construction Allowance	LS	\$50,000.00	1	\$50,000.00	1	\$50,000.00
<b>Mobilization /Demobilization</b>							
18A	Mobilization/Demobilization (4%)	4%	--	--	\$53,577.20	--	\$53,580.00
<b>TOTAL ESTIMATE OF PROBABLE CONSTRUCTION COST</b>					<b>\$830,000.00</b>		<b>\$1,397,000.00</b>
<b>Engineering, Legal, Administrative</b>							
20A	Engineering, Legal, Administrative	20%	--		\$166,000.00		\$279,400.00
<b>Material and Labor Contingency</b>							
21A	Material and Labor Contingency	15%	--		\$124,500.00		\$209,600.00
<b>TOTAL ESTIMATE OF PROBABLE PROJECT COST</b>					<b>\$1,120,500.00</b>		<b>\$1,886,000.00</b>





**APPENDIX K  
ENGINEERING REPORT CERTIFICATION**



**Engineering Report Certification  
To Be Provided by the Professional Engineer Preparing the Report**

During the preparation of this Engineering Report, I have studied and evaluated the cost and effectiveness of the processes, materials, techniques, and technologies for carrying out the proposed project or activity for which assistance is being sought from the New York State Clean Water State Revolving Fund. I have selected as the recommended alternative, to the maximum extent practicable, a project or activity that maximizes the potential for efficient water use, reuse, recapture, and conservation, and energy conservation, taking into account the cost of constructing the project or activity, the cost of operating and maintaining the project or activity over the life of the project or activity, and the cost of replacing the project and activity.

Title of Engineering Report: **TOWN OF PENDLETON CAMPBELL BOULEVARD WATER MAIN REPLACEMENT  
ENGINEERING REPORT**

Date of Report: May 2023

Professional Engineer's Name: Nussbaumer & Clarke, Inc.



Signature: \_\_\_\_\_

Date: June 8, 2023







**APPENDIX L**  
**SMART GROWTH ASSESSMENT FORM**





# Smart Growth Assessment Form

This form should be completed by an authorized representative of the applicant, preferably the project engineer or other design professional.<sup>1</sup>

## Section 1 – General Applicant and Project Information

Applicant: Town of Pendleton, NY

Project No.:

Project Name: Town of Pendleton Campbell Boulevard Water Main Replacement

Is project construction complete?  Yes, date:  No

Please provide a brief project summary in plain language including the location of the area the project serves:

The project is to replace approx. 4,000 linear feet of aging 8-inch cast iron watermain on Campbell Blvd between Mapleton Rd and Lockport Rd located within the Town of Pendleton's water distribution system (NY3100574). Based upon the age of the Town of Pendleton's water system, it is anticipated that there are a significant number of lead services in the project area as defined by the recent Lead and Copper Rule Revisions (LCRR). The LCRR requires all community and non-transient non-community water systems to develop and submit a lead service line inventory by October 16, 2024. The proposed watermain replacement project will aid in the upcoming lead service regulations, as it includes replacement of all 31 water service connections within the project area.

## Section 2 – Screening Questions

### A. Prior Approvals

1. Has the project been previously approved for Environmental Facilities Corporation (EFC) financial assistance?  Yes  No
2. If yes to A(1), what is the project number(s) for the prior approval(s)? Project No.:
3. If yes to A(1), is the scope of the previously-approved project substantially the same as the current project?  Yes  No

**If your responses to A(1) and A(3) are both yes, please proceed to Section 5, Signature.**

### B. New or Expanded Infrastructure

1. Does the project involve the construction or reconstruction of new or expanded infrastructure?  Yes  No

Examples of new or expanded infrastructure include, but are not limited to:

- (i) The addition of new wastewater collection/new water mains or a new wastewater treatment system/water treatment plant where none existed previously;
- (ii) An increase of the State Pollutant Discharge Elimination System (SPDES) permitted flow capacity for an existing wastewater treatment system; and OR

<sup>1</sup> If project construction is complete and the project was not previously financed through EFC, an authorized municipal representative may complete and sign this assessment.

- (iii) An increase of the permitted water withdrawal or the permitted flow capacity for the water treatment system such that a Department of Environmental Conservation (DEC) water withdrawal permit will need to be obtained or modified, or result in the Department of Health (DOH) approving an increase in the capacity of the water treatment plant.

**If your response to B(1) is no, please proceed to Section 5, Signature.**

### **Section 3 –Smart Growth Criteria**

Your project must be consistent with all relevant Smart Growth criteria. For each question below please provide a response and explanation.

1. Does the project use, maintain, or improve existing infrastructure?  
 Yes     No

Explain your response:

2. Is the project located in a (1) municipal center, (2) area adjacent to a municipal center, or (3) area designated as a future municipal center, as such terms are defined herein (please select one response)?

- Yes, my project is located in a municipal center, which is an area of concentrated and mixed land uses that serves as a center for various activities, including but not limited to: central business districts, main streets, downtown areas, brownfield opportunity areas (see [www.dos.ny.gov](http://www.dos.ny.gov) for more information), downtown areas of local waterfront revitalization program areas (see [www.dos.ny.gov](http://www.dos.ny.gov) for more information), areas of transit-oriented development, environmental justice areas (see [www.dec.ny.gov/public/899.html](http://www.dec.ny.gov/public/899.html) for more information), and hardship areas (projects that primarily serve census tracts or block numbering areas with a poverty rate of at least twenty percent according to the latest census data).
- Yes, my project is located in an area adjacent to a municipal center which has clearly defined borders, is designated for concentrated development in the future in a municipal or regional comprehensive plan, and exhibits strong land use, transportation, infrastructure, and economic connections to an existing municipal center.
- Yes, my project is located in an area designated as a future municipal center in a municipal or comprehensive plan and is appropriately zoned in a municipal zoning ordinance
- No, my project is not located in a (1) municipal center, (2) area adjacent to a municipal center, or (3) area designated as a future municipal center.

Explain your response and reference any applicable plans:

3. Is the project located in a developed area or an area designated for concentrated infill development in a municipally-approved comprehensive land use plan, local waterfront revitalization plan, and/or brownfield opportunity area plan?

Yes No

Explain your response and reference any applicable plans:

4. Does the project protect, preserve, and enhance the State's resources, including surface and groundwater, agricultural land, forests, air quality, recreation and open space, scenic areas, and significant historic and archaeological resources?

Yes No

Explain your response:

5. Does the project foster mixed land uses and compact development, downtown revitalization, brownfield redevelopment, the enhancement of beauty in public spaces, the diversity and affordability of housing in proximity to places of employment, recreation and commercial development, and the integration of all income and age groups?

Yes No

Explain your response:

6. Does the project provide mobility through transportation choices including improved public transportation and reduced automobile dependency?

Yes No N/A

Explain your response:

7. Does the project involve coordination between State and local government, intermunicipal planning, or regional planning?

Yes No

Explain your response and reference any applicable plans:

8. Does the project involve community-based planning and collaboration?

Yes No

Explain your response and reference any applicable plans:

9. Does the project support predictability in building and land use codes?

Yes No N/A

Explain your response:

10. Does the project promote sustainability by adopting measures such as green infrastructure techniques, decentralized infrastructure techniques, or energy efficiency measures?

Yes No

Explain your response and reference any applicable plans:

11. Does the project mitigate future physical climate risk due to sea-level rise, storm surges, and/or flooding, based on available data predicting the likelihood of future extreme weather events, including hazard risk analysis data, if applicable?

Yes No

Explain your response and reference any applicable plans:


#### Section 4 – Miscellaneous

1. Is the project expressly required by a court or administrative consent order?  Yes  No

If yes, and you have not previously provided the applicable order to EFC/DOH, please submit it with this form.

#### Section 5 – Signature

By signing below, you agree that you are authorized to act on behalf of the applicant and that the information contained in this Smart Growth Assessment is true, correct and complete to the best of your knowledge and belief.

Applicant: Town of Pendleton, NY	Phone Number: 716-625-8833 X113
Name and Title of Signatory: Joel Maerten, Town Supervisor	
Signature: 	Date: 4/6/2023