CMOM

CAPACITY, MANAGEMENT, OPERATIONS, & MAINTENANCE

for the

ALLEGANY COUNTY UTILITIES DIVISION

APRIL 2017

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Allegany County Utilities Division – CMOM
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Definitions and Terms

ABS – acrylonitrile butadiene styrene (thermoplastic pipe)

ACUD – Allegany County Utilities Division

ACDPW – Allegany County Department of Public Works

CCTV – Closed Circuit Television

CIP – Capital Improvement Program

CIP – Cast Iron Pipe

CMOM – Capacity, Management, Operation and Maintenance

CO – Consent Order

CSO – Combined Sewer Overflow

DIP – Ductile Iron Pipe

EPA – Environmental Protection Agency

GIS – Geographic Information System

GPS – Global Positioning Satellite System

I&I – Inflow and Infiltration

LPGS – Low-Pressure Grinder System

MDE – Maryland Department of Environment

MH – Manhole

MIS – Management Information System

NASSCO – National Association of Sanitary Sewer Companies

PACP – Pipeline Assessment and Certification Program

PVC – Polyvinyl Chloride (pipe)

RDII – Rainfall Derived Inflow and Infiltration

SSES – Sanitary Sewer Evaluation Study

SSO – Sanitary Sewer Overflow

SUO – Sewer Use Ordinance

VCP – Vitrified Clay Pipe

VCPX – Vitrified Clay Pipe (High Strength)

"County" – Allegany County

SECTION I - Introduction

Allegany County is currently under multiple Consent Orders/Judgments from the Maryland Department of the Environment (MDE) in several sanitary districts throughout Allegany County. Most of these Consent Orders deal with periodic Sanitary Sewer Overflows (SSO) and Combined Sewer Overflows (CSO). As such, the County has developed a Capacity, Management, Operation, and Maintenance (CMOM) Program to address requirements of the various Consent Orders throughout the County.

Details specific to each Consent Order will be covered in Section II under the appropriate sanitary district system description. The CMOM Program described in this document will include the following elements:

- Mapping of collection systems in each sanitary district
- Identification of trends in SSO
- Identification of routine preventative maintenance and operation activities
- Assessment of collection system capacity in each sanitary district
- Identification and prioritization of structural deficiencies
- Identification and implementation of rehabilitation actions to address deficiencies
- Appropriate staff training
- Identification of critical replacement parts via equipment inventory system

1. *CMOM Preparation*

This document was prepared internally by Allegany County Department of Public Works staff. Information was gathered from the following sources:

- Existing Geographic Information System (GIS) Data
- As-built drawings
- Discussion with County employees
- Financial Data
  - Capital Improvement Program data
  - Utilities Division budgetary information

SECTION II – System Description

Section II will describe each sanitary system in the County in detail. Allegany County has eight sanitary systems and thirteen sanitary districts within those eight systems. Each district is billed separately. In this section, a brief description of each system (including location, treatment plant location and ownership, and contributing service areas) precedes a system inventory table breaking down information on sewer pipes in the system by district, pipe type, pipe diameter, pipe material, and pipe length. Following the system inventory table, more specific discussions for each sanitary district include number of customers served, transmission pipe condition evaluations, and any planned improvement projects.

All information is up to date as of October 2014 and represents the best available data at the time this report was created.

Detailed system mapping for each District is available in the Appendices of this report.

I. Barton Business Park System

The Barton Business Park System is located southwest of Cumberland along U.S. Route 220. The wastewater treatment plant serving the system is the Barton Business Park WWTP and is operated by the Allegany County Department of Public Works - Utilities Division. The Barton Business Park WWTP is designed and permitted to treat an average of 0.05 million gallons per day (MGD). The average daily flow for calendar year 2014 was 0.006 MGD with a total cumulative flow of 2.080 MG for year 2014.

Currently, the Barton Business Park WWTP treats wastewater with a Sequencing Batch Reactor (SBR). There are no planned improvement projects.

The current location of discharge for the Barton Business Park WWTP is the North Branch of the Potomac River. There are no new proposed points of discharge. Sludge disposal is accomplished through a process of aerobic digestion, transport to the North Branch WWTP for dewatering by belt filter press, and transport to the Mountainview Landfill south of Frostburg along Route 36. The WWTP serves thirty-four (34) total customers (two (2) industrial, thirty-two (32) residential) with public sewer service. The only contributing service area is the Barton Business Park service area (which includes customers in the Biers Lane area).

A breakdown of pipe type, material, and size can be seen in Table II-1 Barton Business Park System Inventory.

Table II-1 Barton Business Park System Inventory

District	Type	Dia (in)	Material	Length (ft)
Barton Business/Biers Lane	FORCE MAIN	3	PVC	4,914
	FORCE MAIN	4	PVC	12,486
	GRAVITY	8	PVC	70
	GRAVITY	10	PVC	1,285
TOTALS				**18,756**

A. Barton Business Park Sanitary System

The Barton Business Park sewer service area serves two (2) industrial customers and thirty-two (32) residential customers and is operated by the Allegany County Department of Public Works - Utilities Division. The service area is located immediately within and just southwest of the Barton Business Park along U.S. Route 220. Wastewater is treated at the Barton Business Park WWTP.

Residential customers in this service area were formerly treated at the Biers Lane WWTP (now out of service). Wastewater is now pumped from the location of the former Biers Lane WWTP and is treated at the Barton Business Park WWTP. Permitting for the Biers Lane WWTP has been kept current should a business or development need arise.

Residential customers on Biers Lane are served by a gravity line conveying septic tank effluent to the pump station. The system is atypical because it was an area originally served by septic tanks. However, the septic fields were failing and the septic tank effluent is now pumped to the Barton Business Park WWTP for treatment.

The Inflow & Infiltration (I&I) crew for the Allegany County Utilities Division (ACUD) has collected closed-circuit television (CCTV) data on approximately 4,500 linear feet of 4" diameter sewer. Smoke testing has been done for thirty-five (35) homes in the area. Fourteen (14) defects were discovered and all have been subsequently repaired. Eight (8) defects were repaired by the ACUD I&I crew and the remaining six (6) were repaired by homeowners.

System history can be seen below in Table II-2 Barton Business Park System History.

Table II-2 Barton Business Park System History

Cont. #	Project	As-Built Date	Engineer
S-57	Biers Lane Wastewater Collection System/Artificial Marsh Treatment Plant	1995	Allegany County
S-64	Barton Business Park – Pressure Sewer	2005	ARRO Consulting, Inc.

II. North Branch System (formerly Celanese)

The North Branch sewer system is served by the North Branch Wastewater Treatment Plant (WWTP) (formerly Celanese WWTP), which is owned and operated by the Allegany County Department of Public Works - Utilities Division. The North Branch WWTP is designed to treat a monthly maximum flow of 2.86 million gallons per day (MGD). The average daily flow for calendar year 2014 was 1.31 MGD with a total cumulative flow of 477.01 MG for the year 2014. The plant is currently permitted at 2.0 MGD. This will ultimately increase to the design flow of 2.86 MGD. Also the 2.0 MGD permit flow provides the Allegany County Department of Public Works - Utilities Division with the option of receiving additional flows from ongoing construction at the Cumberland Chase development. The Rawlings Sewer System is currently being studied by the Allegany County Department of Public Works - Utilities Division for potential system improvements in the future. Flow from Rawlings could be received at the North Branch WWTP and the increase in plant capacity could accommodate the improvements.

Currently, the North Branch WWTP is designed for Biological Nutrient Removal and Enhanced Nutrient Removal (BNR/ENR). The plant's only planned improvement project is for a clarifier replacement. A new concrete clarifier is needed to replace a poorly-performing 20-year-old steel clarifier. Funding assistance will be sought.

The current location of discharge for the North Branch WWTP is the Lower North Branch of the Potomac River. There are no new proposed points of discharge. Sludge disposal is accomplished through a process of aerobic digestion, dewatering by belt filter press, and transport to the Mountainview Landfill south of Frostburg on Maryland Route 36. The North Branch WWTP serves approximately 2,000 customers with public sewer service. Contributing service areas include Bowling Green, Cresaptown, and LaVale-Winchester Road. The North Branch WWTP also receives wastewater from the North Branch Correctional Institution and the Western Correctional Institution through a direct line from the facilities to the plant. There is an agreement to receive flows from the prisons at the North Branch WWTP not in excess of 450,000 gallons per day (gpd).

A. Bowling Green Sanitary District

The Bowling Green sewer service area serves approximately 930 customers and is operated by the Allegany County Department of Public Works - Utilities Division. The service area is located southwest of Cumberland along U.S. Route 220. Wastewater is treated by the Allegany County Department of Public Works - Utilities Division at the North Branch Wastewater Treatment Plant.

This collection system is under a Consent Order with MDE to reduce system SSO. System investigations and rehabilitation/replacement projects will continue as necessary.

The Inflow & Infiltration (I&I) crew for the Allegany County Utilities Division (ACUD) has collected closed-circuit television (CCTV) data for the entire collection system in the Bowling Green area (approximately 80,000 linear feet of pipe).

System history is outlined below in Table II-3 Bowling Green System History. A breakdown of pipe type, material, and size can be seen in Table II-4 Bowling Green System Inventory.

Table II-3 Bowling Green System History

Cont. #	Project	As-Built Date	Engineer
1	Collecting Sewers	9/2/1966	Matz, Childs and Associates, Inc.
1A	Clayton Addition Collectors & Force Main	2/8/1972	Allegany County
RH-1	Sewer System Rehabilitation	2/15/1984	Baker-Wibberley & Associates, Inc.
2	Interceptors & Sewage Treatment Plant	11/19/1965	Matz, Childs and Associates, Inc.
20	Sewage Treatment Plant Additions	12/19/1977	Matz, Childs and Associates, Inc.
S-47	Pumping Station Modifications & Force Main	4/1991	Beavin Company
S-47A	Bowling Green Sewer System (UPIP)	1995	Allegany County
S-61	Cresaptown/Bowling Green Sanitary Sewer Rehabilitation Project	8/2008	RJN Group, Inc.

Table II-4 Bowling Green System Inventory

District	Type	Dia (in)	Material	Length (ft)
Bowling Green	FORCE MAIN	4	DIP	632
	FORCE MAIN	6	CIP	682
	FORCE MAIN	6	DIP	1,042
	FORCE MAIN	10	DIP	9,829
	GRAVITY	4	VCP	173
	GRAVITY	6	CIP	291
	GRAVITY	6	Concrete	6,568
	GRAVITY	6	PVC	714
	GRAVITY	6	VCP	16,412
	GRAVITY	8	Concrete	4,911
	GRAVITY	8	PVC	3088
	GRAVITY	8	VCP	24,358
	GRAVITY	10	VCP	694
	GRAVITY	14	VCP	82
	GRAVITY	15	VCP	2,770
	GRAVITY	18	VCP	5,938
TOTALS				**78,182**

B. Cresaptown System

The Cresaptown sewer service area serves approximately 860 customers and is operated by the Allegany County Department of Public Works - Utilities Division. The service area is located in Cresaptown in an area surrounding the intersection of Winchester Road and McMullen Highway (U.S. Route 220). Wastewater is treated by the Allegany County Department of Public Works - Utilities Division at the North Branch Wastewater Treatment Plant.

This collection system is under a Consent Order with MDE to reduce system SSO. System investigations and rehabilitation/replacement projects will continue as necessary. System history is outlined below in Table II-5 Cresaptown System History. A breakdown of pipe type, material, and size can be seen in Table II-6 Cresaptown System Inventory.

Table II-5 Cresaptown System History

Cont. #	Project	As-Built Date	Engineer
RH-2	Sewer System Rehabilitation	2/15/1984	Baker-Wibberley & Associates, Inc.
3	Collecting Sewers	11/18/1968	Matz, Childs & Associates, Inc.
4	Interceptors & Sewage Treatment	1/5/1967	Matz, Childs & Associates, Inc.
4A	Interceptor, Pump Station, Force Main, & Treatment Plant Units	4/17/1964	Matz, Childs & Associates, Inc.
16	Collecting Sewers	5/9/1969	Matz, Childs & Associates, Inc.
19	Sewage Treatment Plant Addition	12/19/1977	Matz, Childs & Associates, Inc.
S-48	Pumping Station Modifications & Force Main	4/1991	Beavin Company
S-61	Cresaptown/Bowling Green Sanitary Sewer Rehabilitation Project	8/2008	RJN Group, Inc.
	Celanese Wastewater Treatment Plant Expansion Project	5/2001	Hazen & Sawyer

Table II-6 Cresaptown System Inventory

District	Type	Dia (in)	Material	Length (ft)
Cresaptown	FORCE MAIN	2	PVC	1,941
	FORCE MAIN	4	DIP	787
	FORCE MAIN	10	DIP	5,728
	GRAVITY	4	VCP	292
	GRAVITY	6	VCP	19,102
	GRAVITY	8	VCP	21,977
	GRAVITY	10	VCP	2,908
	GRAVITY	12	PVC	1,177
	GRAVITY	12	VCP	1,574
	GRAVITY	15	PVC	274
	GRAVITY	15	VCP	230
TOTALS				**55,992**
# Grinder Pumps in District		**20**		

3. City of Cumberland System

A. Bedford Road Sanitary District

The Bedford Road sewer service area serves approximately 1,300 customers and is operated by the Allegany County Department of Public Works - Utilities Division. It is located north of Cumberland along Bedford Road (Old U.S. Route 220). There are two smaller, additional portions located to the west and south of the larger sewer service area. Wastewater is treated by the City of Cumberland at the Cumberland Wastewater Treatment Plant (WWTP).

This area is under Consent Order from the Maryland Department of the Environment to undertake studies to make repairs to transmission mains to reduce Sanitary Sewer Overflows (SSO) into Evitts Creek. The Allegany County Department of Public Works - Utilities Division has received grant and loan funding from United States Department of Agriculture – Rural Development for sewer rehabilitation throughout the District. Funding has also been obtained from Maryland Department of the Environment via loan (at times with principal forgiveness) and grant to perform sewer rehabilitation projects. Additional funding will be pursued to develop a multi-year, multi-phase project to finish rehabilitation of the Bedford Road Sanitary District.

The Inflow & Infiltration (I&I) crew for the Allegany County Utilities Division (ACUD) has collected closed-circuit television (CCTV) data on approximately 50% of the sewer lines in the system (approximately 85,000 linear feet). 100% of the manholes in the system have been inspected. The work done by the ACUD I&I crew supplements comprehensive data collection efforts made in 2008 by Stearns and Wheler (now GHD) as part of the Bedford Road Sanitary District Sanitary Sewer Evaluation Study (SSES).

In 2012, as part of Contract S-68: Bedford Road Sewer Rehab – Phase I: Ioka LPGS, the ACUD I&I crew performed smoke testing and home inspections at seventy-five (75) homes. Thirty-one (31) defects were found and repaired (seventeen (17) repaired by contractor, six (6) by homeowners, and eight (8) by ACUD I&I crew).

Also in 2012, as part of Contract S-72: Bedford Road Sewer Rehab – Phase II: Shades La approximately 4,000 linear feet of 8" diameter sewer pipe was rehabilitated via cured-in-place pipe methods.160 vertical feet of manhole rehabilitation was performed.

Other smaller projects have been completed in recent years, too. 1,500 linear feet of sewer main was replaced in the Baltimore Pike area. Additionally, thirty (30) manholes throughout the system have been rehabilitated with epoxy spray coatings.

System history is outlined below in Table II-7 Bedford Road System History. A breakdown of pipe type, material, and size can be seen in Table II-8 Bedford Road System Inventory.

Table II-7 Bedford Road System History

Cont. #	Project	As-Built Date	Engineer
8	Evitts Creek & Naves Cross Road	11/8/1968	Matz, Childs & Associates, Inc.
9	Interceptor Sewers and Force Main	11/4/1968	Matz, Childs & Associates, Inc.
10	Pumping Stations – Mill Rd & Ioka St	11/19/1968	Matz, Childs & Associates, Inc.
11	Collecting Sewers	1968	Matz, Childs & Associates, Inc.
17	Williams & Messick Rd Collectors	9/28/1971	Allegany County
21	Christie-Neal-Sunrise-Creek Rds & Hillcrest Area Collector Sewers	10/16/1975	Allegany County
S-68	Bedford Rd Rehab – Phase I: Ioka LPGS	10/3/2012	Allegany County
S-72	Bedford Rd Rehab – Phase II: Shades Lane	3/26/2013	Allegany County
S-76	Bedford Rd Rehab – Phase III: Highland Estates	2014	Allegany County
S-81	Bedford Rd Rehab – Phase IV: Mill Run	4/2015	Allegany County
S-87	Bedford Rd Rehab – Naves Crossroads	8/2017	Allegany County

Table II-8 Bedford Road System Inventory

District	Type	Dia (in)	Material	Length (ft)
Bedford Road	FORCE MAIN	2	PVC	5,993
	FORCE MAIN	4	CIP	556
	FORCE MAIN	4	DIP	1,184
	FORCE MAIN	6	VCP	1,384
	FORCE MAIN	8	VCP	3,798
	GRAVITY	6	Concrete	148
	GRAVITY	6	VCP	21,540
	GRAVITY	8	CIP	28
	GRAVITY	8	DIP	2,202
	GRAVITY	8	PVC	3,508
	GRAVITY	8	VCP	97,605
	GRAVITY	10	DIP	273
	GRAVITY	10	VCP	8,322
	GRAVITY	12	VCP	2,209
	GRAVITY	15	VCP	21,885
	GRAVITY	24	VCP	5,722
TOTALS				**176,359**
# Grinder Pumps in District		**105**		

B. Braddock Run Sanitary System

The Braddock Run sewer service area serves approximately 1,000 customers and is operated by the Allegany County Department of Public Works - Utilities Division. The service area is located east of Frostburg in Eckhart and follows MD Route 40 through Clarysville toward LaVale. There are additional portions of the service area south of Frostburg (Grahamtown) and west of Frostburg (Consol) which are eventually pumped to the larger Braddock Run service area. Wastewater is treated by the City of Cumberland at the Cumberland WWTP.

Closed-circuit television (CCTV) monitoring was recently completed for three areas within the Braddock Run service area. Grahamtown, Consol, and Eckhart sewer systems were inspected for defects. Repairs have been prioritized by Allegany County Department of Public Works - Utilities Division staff. Please refer to Appendix G: Summary Defect Tables for more information.

There are additional improvement projects both currently ongoing and planned for the future. Complete rehabilitation of this district will be a multi-year, multi-phase effort that will be completed as funding is available.

Please refer to Table II-9 Braddock Run System History on the next page for more information on previously completed projects. Additionally, please refer to Table II-10 Braddock Run System Inventory for more information about the pipes in the system.

Table II-9 Braddock Run System History

Cont. #	Project	As-Built Date	Engineer
5	Interceptor – Sand Spring Run & Georges Creek Outfall Sewer Extensions	11/5/1965	Rummel, Klepper & Kahl
6	Georges Creek Force Main	2/8/1966	Rummel, Klepper & Kahl
7	Georges Creek Sewage Pumping Station	1965	Rummel, Klepper & Kahl
12	Centennial Hill (Frostburg-maintained except Catherine & Tisdale Streets)	1/1987	Rummel, Klepper & Kahl
12A	Shaw St Interceptor	1/1987	Rummel, Klepper & Kahl
13	Wrights Crossing-Grahamtown Collection Sewers	4/29/1982	Rummel, Klepper & Kahl
13A	Georges Creek Interceptor/Braddock Estates Interceptor	4/9/1969	Rummel, Klepper & Kahl
14	Eckhart Mines – Clarysville Collector Sewers	6/19/1974	Rummel, Klepper & Kahl
15	Frostburg & Grahamown Sewage Metering Structures	9/1/1967	Rummel, Klepper & Kahl
18	Upper & Lower Consol & Midlothian Rd Collectors	12/1975	Allegany County
95060	Sanitary Sewer Line – Harwood Subdivision	11/1995	Geographics
S-67	Braddock Run Interceptor	9/19/2011	Allegany County
S-71	Braddock Run Rehab – Phase I	1/10/2013	Allegany County
S-73	Braddock Run Rehab – Phase II: Collector Sewer Repairs	2014	Allegany County
S-78	Braddock Run Rehab – Phase III: Grahamtown/Sand Spring Run Interceptor Repair	2015	Allegany County

S-79	Braddock Run Rehab – Phase IV: Wrights Crossing Pump Station Improvements	2016	Allegany County
S-83	Braddock Run Rehab – Phase V: Grahamtown/ Eckart/Clarysville	2017	Allegany County
S-84	Braddock Run Rehab – Phase VI: Grahamtown	2017	Allegany County

Table II-10 Braddock Run System Inventory

District	Type	Dia (in)	Material	Length (ft)
Braddock Run	FORCE MAIN	2	PVC	8,496
	FORCE MAIN	16	VCP	7,922
	GRAVITY	4	VCP	300
	GRAVITY	6	PVC	440
	GRAVITY	6	VCP	368
	GRAVITY	8	VCP	68,198
	GRAVITY	12	VCP	2,981
	GRAVITY	15	PVC	13,208
	GRAVITY	15	VCP	2,879
	GRAVITY	18	VCP	4,764
	GRAVITY	24	VCP	71
TOTALS				**109,628**
# Grinder Pumps in District		**25**		

C. Jennings Run/Wills Creek Sanitary District

The Jennings Run/Wills Creek sewer service area serves approximately 1,230 customers and is operated by the Allegany County Department of Public Works - Utilities Division. The Jennings Run section of the area is located along Jennings Run, which roughly parallels MD Route 36 from Mount Savage to Corriganville where it confluences with Wills Creek. The Wills Creek section of the service area is located along Wills Creek, which roughly parallels MD Route 35 and runs from Ellerslie south towards Cumberland. The service area terminates where it meets the Cumberland service area. Wastewater is treated by the Cumberland WWTP.

This area is under Consent Order from the Maryland Department of the Environment to undertake studies to make repairs to transmission mains to reduce Sanitary Sewer Overflows (SSO) into Jennings Run and Wills Creek. The Allegany County Department of Public Works - Utilities Division has received grant and loan funding from United States Department of Agriculture – Rural Development and Maryland Department of the Environment for sewer rehabilitation and initial phases of a District-wide rehabilitation effort have begun.

The Inflow & Infiltration (I&I) crew for the Allegany County Utilities Division (ACUD) has collected closed-circuit television (CCTV) data for approximately 65% of the sewer lines in the Jennings Run/Wills Creek District. Manhole inspections, smoke testing, and home inspections have been completed for 100% of the system.

Recently completed projects include the rehabilitation of the Corriganville Pump Station and various repairs throughout the District accomplished through cured-in-place-pipe (CIPP) lining, manhole rehabilitation, and point repairs.

In the future, rehabilitation efforts throughout the entire Jennings Run/Wills Creek Sanitary District will be part of a multi-year, multi-phase effort. Projects will be designed and constructed as funding is available.

Please refer to Table II-11 Jennings Run/Wills Creek System History below for more information on previously completed projects. Additionally, please refer to Table II-12 Jennings Run/Wills Creek System Inventory for more information about the pipes in the system.

Table II-11 Jennings Run/Wills Creek System History

Cont. #	Project	As-Built Date	Engineer
S-23	Sewerage System: Eckhart Junction to Corriganville	11/17/1977	MCA Engineering Corporation
S-24	Sewerage System: Corriganville to Ellerslie	11/9/1977	MCA Engineering Corporation
S-25	Sewerage System: Corriganville to Mount Savage	10/25/1977	MCA Engineering Corporation
S-25A	Barrelville Sewerage System	11/4/1980	Kidde Consultants, Inc.
S-26	Sewerage System: Town of Mount Savage	8/24/1977	MCA Engineering Corporation
S-53	Cash Valley Road Collector Sewers	4/1997	Allegany County
S-69	Corriganville Pumping Station Upgrade	9/27/2013	GHD, Inc.
S-70	Mount Savage Sewer Rehab – Phase I	2011	Allegany County
S-74	Jennings Run Sewer Rehab – Phase II	2014	Allegany County
N/A	Rolling Oaks Subdivision (Sections A-E)	2008	Coughenour Surveying

Table II-12 Jennings Run/Wills Creek System Inventory

District	Type	Dia (in)	Material	Length (ft)
Jennings Run/Wills Creek	FORCE MAIN	10	DIP	621
	GRAVITY	6	DIP	102
	GRAVITY	6	VCP	6,930
	GRAVITY	8	Concrete	118
	GRAVITY	8	DIP	2,172
	GRAVITY	8	PVC	3,376
	GRAVITY	8	VCP	74,872
	GRAVITY	10	DIP	240
	GRAVITY	10	VCP	26,604
	GRAVITY	12	VCP	1,901
	GRAVITY	15	VCP	9,641
	GRAVITY	16	DIP	245
	GRAVITY	18	DIP	386
	GRAVITY	18	VCP	10,406
TOTALS				**137,616**

# Grinder Pumps in District	**9**

D. Mexico Farms Sanitary District

The Mexico Farms sewer service area serves approximately 160 residential customers in addition to the businesses and Federal Correctional Institution located within the North Branch Industrial Park. The service area is located southeast of Cumberland along Mexico Farms Road and is operated by the Allegany County Department of Public Works - Utilities Division. Wastewater is treated by the City of Cumberland at the Cumberland WWTP.

No improvement projects are currently planned for this service area.

Please refer to Table II-13 Mexico Farms System History below for more information on previously completed projects. Additionally, please refer to Table II-14 Mexico Farms System Inventory for more information about the pipes in the system.

Table II-13 Mexico Farms System History

Cont. #	Project	As-Built Date	Engineer
S-75-1	Mexico Farms Industrial Park Waste Stabilization Lagoons	1/16/1979	Rummel, Klepper & Kahl
S-51	North Branch Sewage Pumping Station and Force Main	1/1993	Gannett Fleming, Inc.
S/W-52	Mexico Farms Water Distribution and LPGP Sewage Collection System	1/1994	Gannett Fleming, Inc.

Table II-14 Mexico Farms System Inventory

District	Type	Dia (in)	Material	Length (ft)
Mexico Farms	FORCE MAIN	2	PVC	9,277
	FORCE MAIN	3	PVC	8,106
	FORCE MAIN	4	PVC	1,921
	FORCE MAIN	6	DIP	1,082
	FORCE MAIN	6	PVC	874
	FORCE MAIN	16	DIP	21,580
	GRAVITY	8	VCP	862
	GRAVITY	8	DIP	3,491
	GRAVITY	8	PVC	703
	GRAVITY	12	DIP	100
	GRAVITY	12	PVC	2,159
	GRAVITY	15	PVC	2,104
TOTALS				**52,259**
# Grinder Pumps in District		**160**		

E. Oldtown Road Sanitary District

The Oldtown Road sewer service area serves approximately 300 customers and is operated by the Allegany County Department of Public Works - Utilities Division. The service area is located southeast of Cumberland along MD Route 51. Wastewater is treated by the City of Cumberland at the Cumberland WWTP.

No improvement projects are currently planned for this service area.

Please refer to Table II-15 Oldtown Road System History below for more information on previously completed projects. Additionally, please refer to Table II-16 Oldtown Road System Inventory for more information about the pipes in the system.

Table II-15 Oldtown Road System History

Cont. #	Project	As-Built Date	Engineer
S-55	Oldtown Road Sewage Collection System	3/1997	BCM Engineers
S-55A	Oldtown Road Sewage Collection System Phase II	9/1999	BCM Engineers

Table II-16 Oldtown Road System Inventory

District	Type	Dia (in)	Material	Length (ft)
Oldtown Road	FORCE MAIN	2	PVC	9,057
	FORCE MAIN	3	PVC	12,870
	FORCE MAIN	4	PVC	736
	FORCE MAIN	6	DIP	245
	GRAVITY	2	PVC	476
	GRAVITY	4	PVC	174
	GRAVITY	8	DIP	821
	GRAVITY	8	PVC	10,035
TOTALS				**34,414**
# Grinder Pumps in District		**200**		

4. Flintstone System

A. Flintstone Sanitary District

The Flintstone Sewer System is located in the northeastern part of Allegany County along Interstate 68 in the community of Flintstone. The Flintstone WWTP serves approximately 80 customers and is operated by the Allegany County Department of Public Works - Utilities Division and serves the community of Flintstone. The Flintstone WWTP is designed to treat an average of 0.045 million gallons per day (MGD). The average daily flow for calendar year 2014 was 0.036 MGD with a total cumulative flow of 13.10 MG for 2014. The only contributing service area is the Flintstone service area.

Allegany County has submitted Wastewater Capacity Management Plans (WWCMP) on annual basis for the past several years. These reports are required by the Maryland Department of the Environment (MDE) when flows at a WWTP approach or exceed 80% of permitted capacity.

Currently, the Flintstone WWTP treats wastewater by Extended Aeration. The current location of discharge for the Flintstone WWTP is Town Creek. There are no new proposed points of discharge. Sludge disposal is accomplished through a process of aerobic digestion, transport to the North Branch WWTP for dewatering by belt filter press, and transport to the Mountainview Landfill south of Frostburg along Route 36. The Flintstone WWTP has reached the end of its designed life expectancy. One solution is to install a new treatment facility identical to the current facility. The current facility could then undergo rehabilitation and be placed back online as a backup for periods of heavy flow and to allow for improved reliability and redundancy. To give the current WWTP extended life, the existing tank has been drained and repainted.

MDE currently has a building moratorium on the Flintstone System. An inflow and infiltration reduction project has recently been finished by the Allegany County Utilities Division I&I crew. 1,150' of 8" diameter pipe was replaced and twelve (12) manholes were rehabilitated through spray epoxy application. Additionally, five (5) manholes were replaced. All homes in the service area have been inspected for illicit connections. Out of 83 homes in the area, 29 defects were observed. 17 were repaired by the County I&I crew and the remaining 12 were repaired by homeowners.

Smoke testing, CCTV data collection, and manhole inspection has been completed for the entire district. The County plans to monitor flows in this area to check the degree of success achieved by the project.

Please refer to Table II-17 Flintstone System History on the next page for more information on previously completed projects. Additionally, please refer to Table II-18 Flintstone System Inventory for more information about the pipes in the system.

Table II-17 Flintstone System History

Cont. #	Project	As-Built Date	Engineer
S-32; S-33	Sewerage System – Flintstone/Gilpin	12/18/1980 – S-32; 2/1/1982 – S-33	Allegany County
	Mallow Cabin Rentals	4/10/2006	Bennett, Brewer & Associates, LLC
N/A	2013 I&I Investigation & System Repairs	N/A	Allegany County

Table II-18 Flintstone System Inventory

District	Type	Dia (in)	Material	Length (ft)
Flintstone	FORCE MAIN	3	PVC	3,660
	GRAVITY	6	ABS	305
	GRAVITY	8	ABS	10,115
TOTALS				**14,080**
# Grinder Pumps in District		**5**		

5. Georges Creek System

A. Georges Creek Sanitary District

The Georges Creek Sewer System is located in the western part of Allegany County along MD Route 36. The wastewater treatment plant serving the system is operated by the Allegany County Department of Public Works - Utilities Division. The system serves the small communities of Midlothian, Shaft, Carlos, Midland, Lonaconing, and Barton. Receiving wastewater from these communities is the Georges Creek Wastewater Treatment Plant (WWTP). The Georges Creek WWTP is designed to treat an average of 0.70 million gallons per day (MGD). The average daily flow for calendar year 2014 was 0.776 MGD with a total cumulative flow of 283.20 MG in 2014.

Allegany County has submitted Wastewater Capacity Management Plans (WWCMP) for the Georges Creek WWTP in 2010, 2011, and 2014. These reports are required by the Maryland Department of the Environment (MDE) when flows at a WWTP approach or exceed 80% of permitted capacity.

The plant's permitted and design capacity was increased from 0.60 MGD to 0.70 MGD following completion of the upgrade to the WWTP in 2010. The increase came as a result of the State of Maryland requiring a $28.4 million dollar upgrade for Biological Nutrient Removal and Enhanced Nutrient Removal (BNR/ENR) in an effort to reduce total phosphorus loading and total nitrogen loading into waters that eventually discharge into the Chesapeake Bay. Cold weather ENR is problematic at the WWTP. The Georges Creek WWTP experiences the coldest temperatures of all ENR plants in Maryland.

The current location of discharge for the Georges Creek WWTP is Georges Creek, which is adjacent to the WWTP. There are no new proposed points of discharge. Sludge disposal is accomplished through a process of aerobic digestion and dewatering by belt filter press, and transport to the Mountainview Landfill south of Frostburg along Route 36. The Georges Creek WWTP currently receives leachate from the Mountainview Landfill. The only contributing service area is the Georges Creek service area.

The Georges Creek sewer service area serves approximately 2,200 customers and is operated by the Allegany County Department of Public Works - Utilities Division. This system is under Consent Order with MDE to reduce system SSO. System investigations and rehabilitation/replacement projects will continue as necessary.

The Allegany County Utilities Division I&I crew has completed closed-circuit television (CCTV) monitoring of all stream crossings in the District (approximately 30,000 ft). Some repairs have been made in an effort to decrease total wastewater flow received at the Georges Creek WWTP.

Please refer to Table II-19 Georges Creek System History on the next page for more information on previously completed projects. Additionally, please refer to Table II-20 Georges Creek System Inventory for more information about the pipes in the system.

Table II-19 Georges Creek System History

Cont. #	Project	As-Built Date	Engineer
S-36	Georges Creek Interceptor & Sewers (Kyle Hill/Mill Run/Reynolds)	1/1/1984	Rummel, Klepper & Kahl
S-37	Georges Creek Sewage Treatment Facility	10/11/1982	Rummel, Klepper & Kahl
S-38	Georges Creek Interceptor & Sewers (Lower Barton/Dogwood Flats)	4/13/1984	Rummel, Klepper & Kahl
S-39	Barton Collector Sewers	1/10/1984	Rummel, Klepper & Kahl
S-40	Georges Creek Interceptor & Sewers (Detmold/Nikep/Moscow)	2/25/1984	Rummel, Klepper & Kahl
S-41	Lonaconing Collector Sewers	11/1984	Rummel, Klepper & Kahl
S-42	Georges Creek Interceptor & Sewers (Gilmore to Lonaconing)	10/1984	Rummel, Klepper & Kahl
S-43	Midland Collector Sewers	11/1984	Rummel, Klepper & Kahl
S-44	Georges Creek Interceptor & Sewers (Midlothian/Shaft/National)	1/12/1984	Rummel, Klepper & Kahl
S-45	Georges Creek Interceptor & Sewers (Carlos/Klondike/Woodland)	12/8/1983	Rummel, Klepper & Kahl
S-60	Georges Creek Sanitary Sewer Rehabilitation Project	12/7/2005	URS Corporation
S-65	Georges Creek Wastewater Treatment Plant ENR	12/2010	Stearns & Wheler, LLC

Table II-20 Georges Creek System Inventory

District	Type	Dia (in)	Material	Length (ft)
Georges Creek	FORCE MAIN	2	PVC	330
	GRAVITY	6	DIP	146
	GRAVITY	6	PVC	13,473
	GRAVITY	6	Truss	1,239
	GRAVITY	8	DIP	7,301
	GRAVITY	8	PVC	117,558
	GRAVITY	8	Steel	382
	GRAVITY	8	Truss	69,351
	GRAVITY	8	VCP	1,288
	GRAVITY	10	DIP	3,390
	GRAVITY	10	PVC	12,391
	GRAVITY	12	DIP	13,545
	GRAVITY	12	PVC	17,262
	GRAVITY	12	Truss	2,994
	GRAVITY	12	VCP	2,370
	GRAVITY	15	PVC	445
	GRAVITY	15	VCP	747
	GRAVITY	18	VCP	1,347
TOTALS				**265,558**
# Grinder Pumps in District		**30**		

6. McCoole System

A. McCoole Sanitary District

The McCoole System is located is southwestern Allegany County, across the North Branch Potomac River from Keyser, West Virginia. The McCoole sewer service area serves approximately 225 customers in Allegany County and is operated by the Allegany County Department of Public Works - Utilities Division.

The wastewater from the McCoole system is pumped to the Keyser WWTP for treatment. The Keyser WWTP is operated by the City of Keyser and is designed for an average flow of 2.1 MGD and a peak flow of 8.0 MGD. The collection system used by the City of Keyser is a combined system, and it serves a total 2,017 people. The sewage treated per day varies from 1.2 to 2.0 MGD; the treatment used is a Class 2 Lagoon System. The current demand for the system is 2.4 MGD. The outfall is located in the North Branch Potomac River. To finance improvements, the City of Keyser will likely use grants, loans, and/or increase sewer rates.

A problem currently facing the Keyser WWTP is that the lagoons are exceeding life expectancy. Funding is being sought for design and construction of a rehabilitated WWTP.

There is another wastewater treatment plant in the vicinity of the McCoole service area that is currently not in operation. However, permitting has been kept current at the plant should future development in the area of the Tri-Towns Plaza warrant its use. The Tri-Towns Wastewater Treatment Plant serves the now-vacant Tri-Towns Industrial Plaza, located along MD Route 135 between Westernport and McCoole. This plant treats by extended aeration and its discharge point is the North Branch of the Potomac River. Its design capacity is 0.003 million gallons per day (MGD).

As part of the construction of the new Keyser-McCoole Bridge (US220 over the Potomac River) from Keyser, WV into McCoole, MD, the existing McCoole Pump Station was relocated and rebuilt in 2009.

The Allegany County Utilities Division I&I crew has completed closed-circuit television (CCTV) monitoring of all sewer lines (approximately 22,000 ft) and manholes in the District. Home inspections and smoke testing have also recently been completed.

Please refer to Table II-21 McCoole System History on the next page for more information on previously completed projects. Additionally, please refer to Table II-22 McCoole System Inventory for more information about the pipes in the system.

Table II-21 McCoole System History

Cont. #	Project	As-Built Date	Engineer
S-28	Interceptor Sewer/Force Main/Pumping Station	7/13/1979	William K. Dean Associates
S-29	McCoole Collecting Sewers	7/13/1979	William K. Dean Associates
S-56	LPGP Sewage Collection System Extension	3/1995	Allegany County
N/A	McCoole Pump Station Relocation	2009	Rummel, Klepper & Kahl
N/A	McCoole Pump Station Relocation	2009	Rummel, Klepper & Kahl
N/A	I&I Investigation and Repairs	2015	Allegany County

Table II-22 McCoole System Inventory

District	Type	Dia (in)	Material	Length (ft)
McCoole	FORCE MAIN	3	PVC	4,322
	FORCE MAIN	6	DIP	780
	GRAVITY	8	Concrete	697
	GRAVITY	8	DIP	21,792
TOTALS				**27,592**
# Grinder Pumps in District		**20**		

7. Oldtown System

A. Oldtown Sanitary District

The Oldtown sewer system is located in the southeastern part of Allegany County along MD Route 51 in the community of Oldtown, MD. The Oldtown WWTP wastewater treatment plant serves the system and is operated by the Allegany County Department of Public Works - Utilities Division. The system serves approximately 50 customers in the Oldtown area. The Oldtown WWTP is designed to treat an average of 0.040 million gallons per day (MGD). The average daily flow for calendar year 2014 was 0.018 MGD with a total cumulative flow of 6.4 MG in 2014. The only contributing service area is the Oldtown service area.

Currently, the Oldtown WWTP treats wastewater by Extended Aeration. The current location of discharge for the Oldtown WWTP is Mill Run. There are no new proposed points of discharge. Sludge disposal is accomplished through a process of aerobic digestion, transport to the North Branch WWTP for dewatering by belt filter press, and transport to the Mountainview Landfill south of Frostburg along Route 36. The Oldtown WWTP has reached the end of its designed life expectancy. One solution is to install a new treatment facility identical to the current facility. The current facility could then undergo rehabilitation and be placed back online as a backup for periods of heavy flow and to allow for improved reliability and redundancy. To give the current WWTP extended life, the existing tank has been drained and repainted.

The Allegany County Utilities Division I&I crew recently completed an internal I&I project. The project consisted of closed-circuit television (CCTV) monitoring of all sewer lines and manholes in the District. Home inspections and smoke testing were also completed. Of 53 homes in the area, there were fifteen defects observed on private building sewers. Thirteen were repaired by the I&I crew and two were repaired by homeowners. Additionally, there was one main line point repair completed by the I&I crew using a 4' long pipe patch (no-dig point repair).

Please refer to Table II-23 Oldtown System History below for more information on previously completed projects. Additionally, please refer to Table II-24 Oldtown System Inventory for more information about the pipes in the system.

Table II-23 Oldtown System History

Cont. #	Project	As-Built Date	Engineer
S-30; S-31	Oldtown Sewerage System	3/1982	Allegany County
N/A	I&I Investigation and Repairs	2015	Allegany County

Table II-24 Oldtown System Inventory

District	Type	Dia (in)	Material	Length (ft)
Oldtown	GRAVITY	6	VCP	1,617
	GRAVITY	8	DIP	36
	GRAVITY	8	VCP	4,570
	GRAVITY	10	VCP	1,126
TOTALS				**7,348**

8. Upper Potomac River Commission (UPRC) System

The Upper Potomac River Commission System (UPRC) is located in southwest Allegany County. The wastewater treatment plant that serves the system is operated by UPRC. The UPRC WWTP treats flow from Allegany County, the Town of Westernport, the Town of Luke, and the NewPage paper mill. NewPage is 90% of the total flow.

A. Franklin/Brophytown Sanitary District

The Franklin/Brophytown sewer service area serves approximately 80 customers and is operated by the Allegany County Department of Public Works - Utilities Division. The service area is located just north of the town of Westernport along MD Route 36. Wastewater is treated by the Upper Potomac River Commission Wastewater Treatment Plant.

No improvement projects are currently planned for this service area.

Please refer to Table II-25 Franklin/Brophytown System History below for more information on previously completed projects. Additionally, please refer to Table II-26 Franklin/Brophytown System Inventory for more information about the pipes in the system.

Table II-25 Franklin/Brophytown System History

Cont. #	Project	As-Built Date	Engineer
S-46	Franklin-Brophytown Sewerage System	1/5/1984	Allegany County

Table II-26 Franklin/Brophytown System Inventory

District	Type	Dia (in)	Material	Length (ft)
Franklin/Brophytown	GRAVITY	8	VCP	8,095
	GRAVITY	8	DIP	422
TOTALS				**8,517**

9. FUTURE – Rawlings System

The Rawlings System is located in southwest Allegany County. The wastewater treatment system is operated by the Rawlings Homeowners Association (RHA) and consists of aerated lagoons.

A. Rawlings Sanitary System

The Rawlings sewer service area is located in the Rawlings area along US Route 220 south of Cumberland and near the West Virginia state line. The system is currently owned and operated by RHA. RHA has requested that ACUD assume ownership, operation, and maintenance of the existing sewer system. Known system information is given below in Table II-27 Rawlings System Inventory. No additional information is available at this time.

Table II-27 Rawlings System Inventory

District	Type	Dia (in)	Material	Length (ft)
Rawlings	FORCE MAIN	2	PVC	3,015
	FORCE MAIN	3	PVC	510
	GRAVITY	6	VCP	9,995
	GRAVITY	8	VCP	18,767
TOTALS				**32,286**

Table 11-28 Rawlings System History

Project	As-Built Date	Engineer
CCTV PPG Grant	2010	Robinson
Rawlings Sewer PER	2013	EADS

SECTION III - Management and Administration

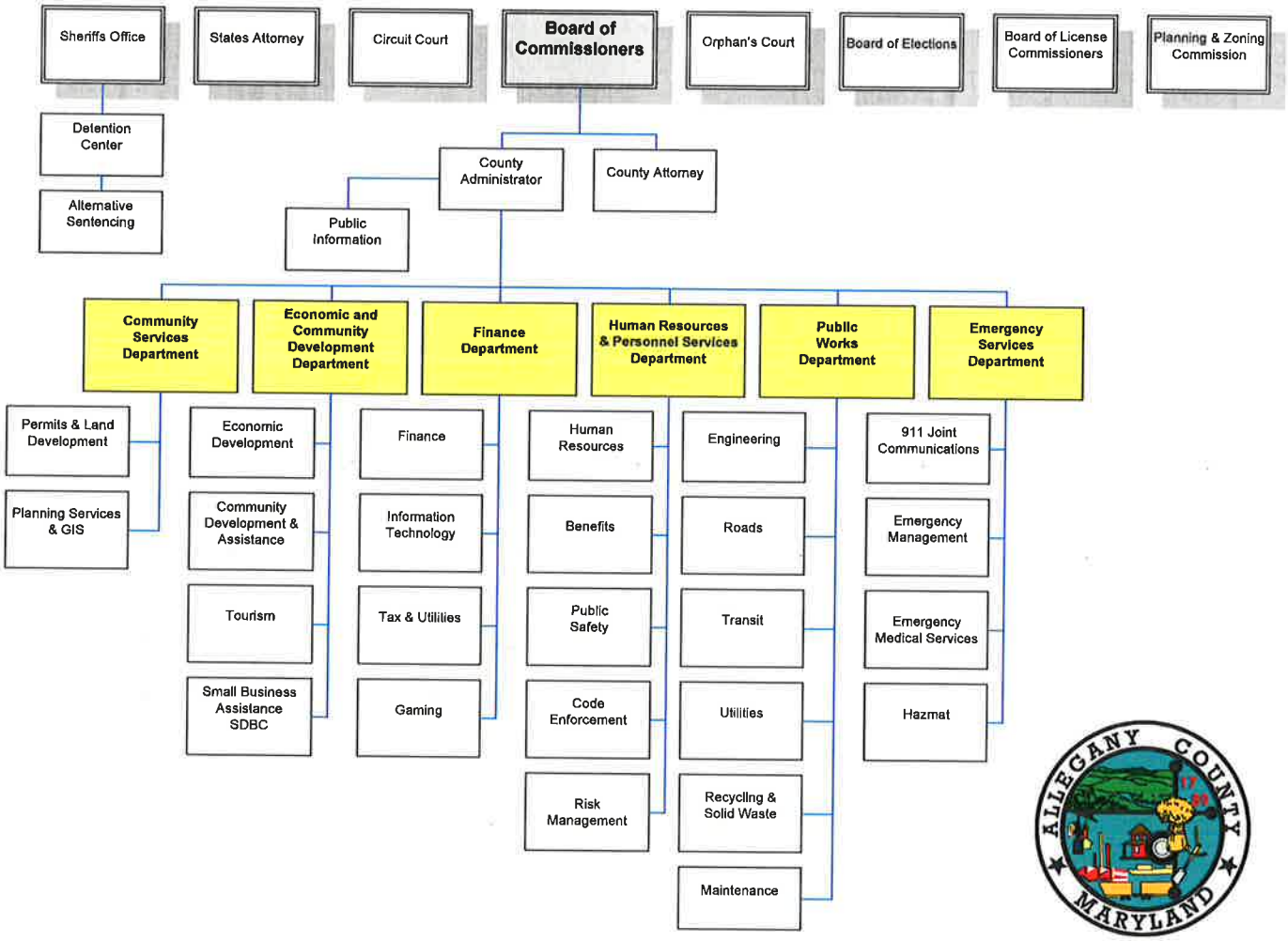
1. County Government

Allegany County has been a Code Home Rule County since 1974 and has enjoyed the distinction of being one of the few counties in the state governed as a Code Home Rule county. Code Home Rule gives the privilege of exercising direct control over county affairs by assuming the right and obligation to govern by legislative power. It allows the County to take immediate action to correct or improve specific problems and issues relative to Allegany County without waiting for action by the Maryland General Assembly at legislative session.

In addition to the aforementioned duties and responsibilities conveyed to the County Commissioners by law, weekly public meetings are held to take action on items that affect the smooth and efficient operation of Allegany County Government. These meetings also give all stakeholders the opportunity to be heard. The County Commissioners serve and/or have representation on many local and state government boards, committees, and task forces. The general organization of the County is presented below in Figure III-1.

Figure III-1: Allegany County Organizational Chart

Allegany County, Maryland 2017 Organization Chart



2. Department of Public Works – Utilities Division

The Department of Public Works – Utilities Division is responsible for the many collection systems in the County, which are divided into several sanitary districts. The County has approximately 185 miles of water line and 197 miles of sewer line with a total of approximately 14,000 customers. The 31 Utilities Division employees operate five (5) wastewater treatment plants, several wastewater pump stations, and seven water storage tanks. Allegany County purchases all potable water from other regional suppliers which is then distributed and sold to individual customers. The Division is also responsible for bulk water and sewer meter readings and individual home water meter readings.

The Utilities Division is organized as presented below in Figure III-2.

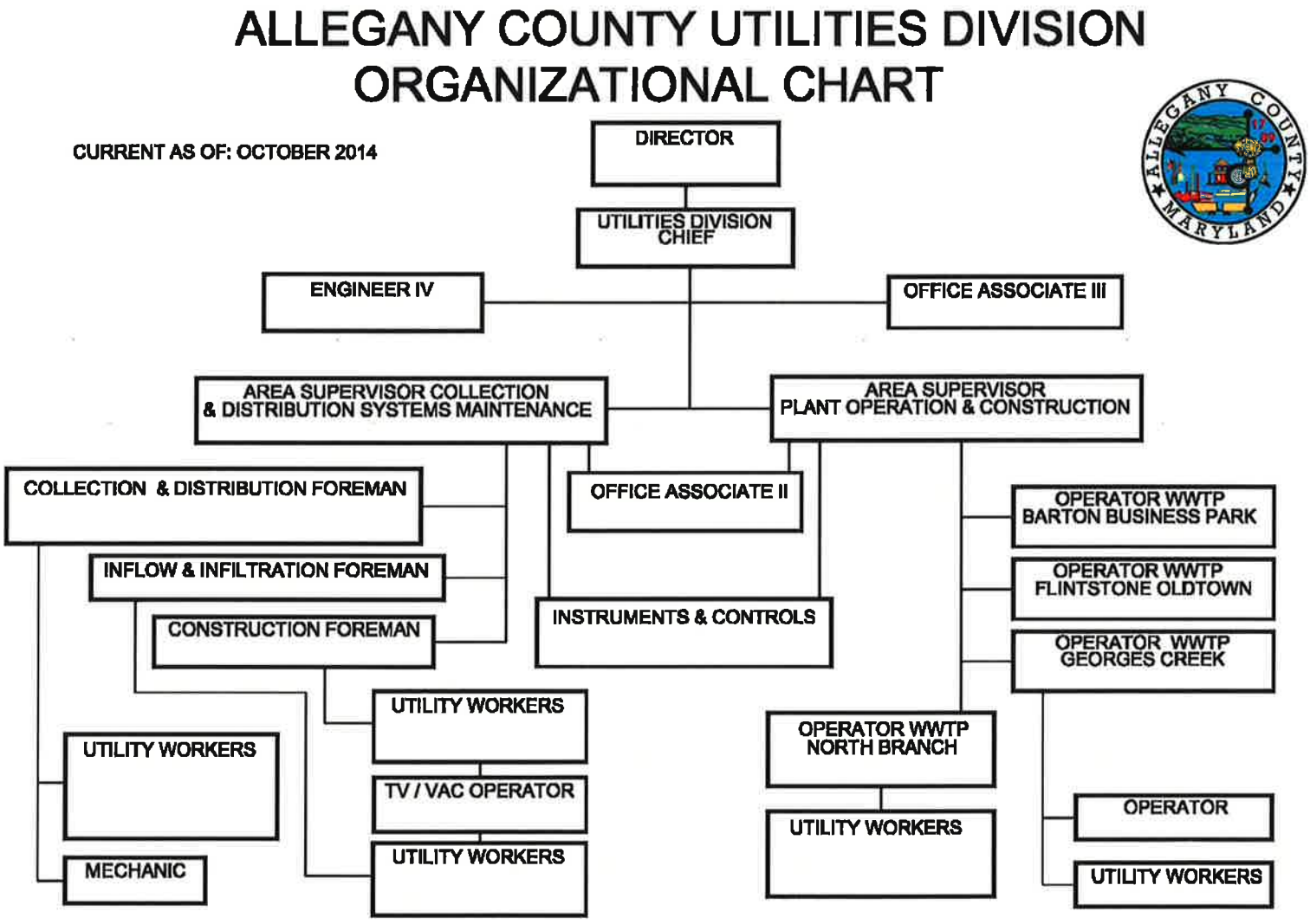


Figure III-2: Allegany County Utilities Division Organizational Chart

3. Staffing

Utility workers are organized by regional area with certain staff being assigned to certain pumping stations. Additionally, on-call duties are rotated for responding to emergencies. This person is considered the first responder. There are job descriptions for each position that describe minimum position requirements, nature of work to be performed with examples, and necessary special qualifications, certifications, or licenses required for the position.

According to the Environmental Protection Agency (EPA) Guidelines for Evaluating CMOM Programs at Sanitary Sewer Collection Systems, the recommended staffing for a system with population 50,000 is presented in Table III-1 with the ACUD staffing comparison. Please note that ACUD personnel perform multiple tasks throughout all Sanitary Districts in the County and most employees are not assigned to a specific District.

Table III-1: Staffing Comparison

EPA		ACUD	
EPA Title	**Staff Number**	**ACUD Title**	**Staff Number**
Superintendent	1	Engineer III	1
Maintenance Supervisor	1	Area Supervisor	1
Foreman	1	Foreman (I&I, Construction, Collection/Distribution)	3
Maintenance Man II	1	Utility Worker (I&I)	2
Maintenance Man I	3	TV/Vac Operator	2
Mason II	1		
Maintenance Equipment Personnel	2	Mechanic	1
Construction Equipment Personnel	1	Utility Workers (Construction)	3
Laborer	2		
Dispatcher	1		
Clerk Typist	1		
Sewer Maintenance Staff	16	Utility Workers (Coll./Dist.)	4
TOTALS	31	TOTALS	17

The County has set up a dedicated Inflow and Infiltration (I&I) Department with two additional staff to focus on I&I investigations. Their duties include home plumbing inspections, CCTV work, flow metering and manhole inspections.

4. Training

Mandatory training is required for key employees. Mostly all ACUD personnel meet or exceed their annual training goals each year. Training is provided for safety, confined space entry, traffic control, and electrical and instrumentation repair. Most general training is simply on-the-job training yet some manufacturers do perform some training for staff. Operator and maintenance certification programs are not utilized because no certification programs are required for this collection system.

During the field work done to complete the Jennings Run/Bedford Road SSES reports in 2008-2009, County personnel were provided with great opportunities for training. Collection system staff worked closely with the contracted engineering firm and their sub-consultants during the

physical inspection and flow monitoring work for the County. Staff learned smoke testing, home plumbing inspections, flow meter installation, recording, and data collection procedures. The flow meter manufacturer provided formal training on flow meter placement, installation, and data retrieval. Additionally, the majority of manhole inspections were performed by County staff. These inspections utilized a camera-on-a-stick, GPS tracking, and tablet PCs to store recorded video, photographs, global positioning, physical characteristics, and condition. The models created for the SSES reports in the Bedford Road and Jennings Run Sanitary Districts by the consulting engineer were provided to the County. Formal training by the software manufacturer in addition to informal training on the specific system model has been conducted and the County plans to utilize the model in conjunction with the SSES to plan future rehabilitation projects. Two staff members have been trained and certified to assess sewers using NASSCO PACP. This rating system was utilized for the SSES work and will continue to be applied to future evaluations in County Sanitary Districts.

In the areas outside the Bedford Road and Jennings Run Sanitary Districts (where no SSES were recently completed), County staff continue to learn via on-the-job training through smoke testing, CCTV inspection, home inspections, point repairs, pump maintenance and rehabilitation, and other day-to-day activities. Supervisory personnel within the Utilities Division attend regular training sessions in the main Department of Public Works office to keep current on technology and opportunities available to the Utilities Division. This is done in an effort to maximize efficiency.

5. Customer Service

The public is notified of construction or maintenance work through the use of door hangers, newspaper notices, radio announcements, fliers, and signs. When a homeowner's property will be directly affected by the work, direct notification comes from ACUD staff. Residents are advised of cleanup and safety procedures in the unfortunate event that an overflow or basement backup occurs. If a basement backup is caused by a main in the sanitary district, the County hires a cleaning company for the cleanup and restoration and pays the insurance deductible. The County handles complaints and requests by logging the personnel who received the information, the date and nature of the complaint or request, location of the problem, and name, address, and telephone number of the informant. The goal is to respond to complaints within 24 hours and emergency calls as quickly as possible. Records of any basement backups are kept.

Following completion of the recent Bedford Road Sanitary District Sewer Rehabilitation – Ioka Basin LPGS Project, letters were sent to all affected homeowners to advise them of proper procedures to follow when grinder pump alarms/lights go off or may otherwise malfunction. This helps reduce chances for backups or other problems and gives homeowners an elevated level of comfort with an unfamiliar technology. This is typical procedure and will be implemented again on any subsequent grinder pump projects.

6. Management Information Systems (MIS)

The County keeps many significant components required of a MIS such as inspection logs, parts inventory, complaint logs, sewer system inventory, maps, and SSO reports. The comprehensive Geographic Information System (GIS) map is linked to databases of collected information including property, land use, and collection system attributes.

In 2010, ACUD began using the iWorQ system to track work management such as repair, replacement, and installation of water and sewer lines and pump stations. It is also used for

inventory tracking. It is used for Citizen Requests for daily work such as water meter re-reads, marking of water and sewer lines, complaints, grinder pump calls, etc.

The County also utilizes a database to track home plumbing inspections and manhole inspections.

Finally, the County purchased CUES GraniteXP software in late 2011. This software allows direct management of all closed circuit television (CCTV) data collected in the field by County staff. It links directly to County-maintained GIS data and allows for informed decision making and spatial analysis of current system conditions. Hands-on field training for this software occurred in January 2012 and implementation and use is currently ongoing.

Responsible design decisions are made using the GraniteXP software using the following workflow:

a. Engineer requests I&I Crew collect field data
b. Engineer provides data/maps of selected areas to I&I Crew
c. I&I Crew begin CCTV monitoring for selected areas and notes observations/severity in GraniteXP in realtime while video is being collected
d. After specified interval, I&I Foreman coordinates with GIS Manager to integrate data collected in field with County-maintained Spatial Database Engine (SDE)
e. Engineer uses office license of GraniteXP to review video and observation data collected in field to make informed design decisions
f. Engineer recommendations for necessary work are entered directly into County SDE to allow for direct tracking and follow-up of rehabilitation/construction actions after completion of contract/work order

7. CSO/SSO Notification Program

Since January 2001, ACUD has routinely reported Combined Sewer Overflows (CSO)/Sanitary Sewer Overflows (SSO) to MDE by telephone within 24 hours of first knowledge and followed up with written reports within five days as required by law. MDE and ACUD also conduct inspections of constructed overflows in the sewer system. After several investigations of the system between 2001 and 2005, ACUD was instructed by MDE to provide reports detailing the frequency of CSO/SSO. These reports were intended to describe the cause of the CSO/SSO, corrective measures taken or planned to reduce or eliminate the discharge, and an itemized time schedule for the completion of those corrective measures. Depending on the level of groundwater saturation and location, CSO/SSO can be generated from as little as several tenths of an inch of rainfall or snow melt. Since CSO/SSO pose health and environmental risks, weekly samples for *E. coli* are taken at the overflow location, and at points both upstream and downstream of it, until *E. coli* levels return to below normal. CSO/SSO locations are posted with signs warning the public of potential CSO/SSO. ACUD also notifies the Allegany County Health Department and in the *Cumberland Times-News* newspaper when CSO/SSO occur.

Similarly, ACUD is responsible for notifying MDE of Combined Sewer Overflows (CSO) that occur at the terminus of the City of Frostburg combined sewer system. Due to large volume of information, a summary of CSO/SSO overflows is available upon request.

8. Legal Authority

A. Sewer Use Ordinance (SUO)

Chapter 190 of the Allegany County Utility Use Regulations passed in 2001 contains standards for inspections and approval of new connections to an existing collection system. Building/sewer permit issues are defined in the ordinance. Pretreatment conditions are also stated. Oils or petroleum and any material causing interference with the system are prohibited by users. Any satellite communities are required to adopt the same industrial and commercial regulator discharge limits as the utility and the same inspection and sampling schedules as required by the pretreatment ordinance. Satellite communities must also issue their own control permits to significant industrial users. Section 190-3.1 prohibits any connection that allows surface or ground water or any prohibited waste to enter the building drain or building sewer. This section is the subject of another CO requirement to enforce this code. Section 190-10.1 states that the County sends written notice to any violator of the code provision. Within 30 days, the user must respond with a plan to correct the violation. Upon approval of the plan by the County, the violator must make the correction within 30 days. Should the correction not be implemented, the County can serve a civil citation. An illicit connection, either new or existing, is considered a civil infraction.

B. Plumbing Code

In addition to Chapter 190, plumbing is covered under Chapter 166 (adopted in 1988) of the Code of Allegany County, Maryland. This Chapter covers plumbing work and requires licensed master plumbers perform work and issuance of building permits for new construction or repairs. Work requiring a permit must be inspected prior to making final connection to any public water or sewer facility. No final tap for sewer service can be made until ACUD is notified in writing by the plumbing inspector that the plumbing work is approved. An exemption exists for plumbing work done by an individual on their personal residence up to the final connection between the individual's residence and the public sewer system. In this case, the individual signs a release agreement that relieves any County responsibility for damages as a result of the work. There is an enforcement, violations, and penalties section in the Chapter that allows penalties for licensed plumbers violating the code according to state code and fines from $10 - $100 per day per violation for others.

C. Consent Orders

Allegany County has executed a consent order with the City of Frostburg, City of Cumberland, and LaVale Sanitary Commission where Allegany County either discharges or receives wastewater to or from other municipalities. The purpose of these consent orders is to ensure that proper flow levels are maintained from one area/jurisdiction of the County to another. It is important to make sure ACUD understands development trends or population trends in the municipal areas of the County and vice versa. A yearly meeting of all involved parties is held at the Allegany County Office Complex where ACUD and municipalities discuss recent, current, and upcoming projects. Updates are also given to MDE to show active steps are being taken to remain in compliance the various Consent Orders/Judgments throughout the County.

Any applicable agreements have been included in Appendix B.

SECTION IV - Collection System Operation

1. Budget

Sanitary Districts in Allegany County operate from the County Utilities Enterprise Fund. The current balanced operating and capital budget for the Utilities Division is $8,200,000. The majority of revenues are from customer charges. In general, most of the budget goes towards collection system maintenance and treatment with approximately $2,000,000 to outside treatment. A majority of the maintenance budget goes towards corrective and emergency maintenance with ten percent towards predictive and preventative maintenance. The budget is shared among all Districts and expenditures are summarized at year end. After making repairs of the immediate or emergency nature, the County can shift some of the remaining corrective and emergency maintenance funding to predictive and preventative maintenance funding.

As required by state law, the County maintains a five-year capital improvement program (CIP). The County CIP includes all planned water and sewer projects and is updated annually to reflect the most current project phasing and funding for all utility projects. The County frequently receives low-interest loans from state and federal funding agencies for projects to repair or replace infrastructure. Loans are paid back by users of that district. This is sometimes accomplished through an ad-valorem tax, assessed annually to customers in each specific Sanitary District. Up to date information on current billing rates, ad valorem taxes, front footage fees, or other surcharges is always available on the County website. These fees are adjusted annually by recommendation of the Allegany County Sanitary Commission and approval by the County Commissioners.

2. Emergency Preparedness and Response

There are standard procedures for notifying state agencies of significant overflow events and methods to limit public access to and contact with CSO/SSO areas. A public notification plan is also in place that includes signage at the CSO/SSO location.

All large pumping stations are equipped with stand-by diesel generators and automatic transfer switches as required by the Maryland Department of the Environment. Smaller pumping stations have a manual transfer switch where portable ACUD generators can be connected. ACUD can also pump down the station and individual grinder pumps with the ACUD Vacuum Truck or, alternately, contract with a septic hauler.

For more information, please refer to **Appendix F:** Allegany County Department of Public Works – Utilities Division Water & Wastewater System **Emergency Plan of Operation and Vulnerability Assessment**.

3. Modeling

ACUD has a license for Bentley SewerGEMS v8i which allows for sewer system modeling and analysis. In planning for future sewer rehabilitation projects, ACUD staff has the ability to analyze system models and determine how potential future population increases will place demands on the existing system. This ability will be maximized in coming years to get the most accurate model of our existing system as possible.

4. Mapping

ACUD has existing as-built drawings for each collection system in the County. The drawings reflect base collection system information and sewer lateral location and lengths. Recent and planned projects will verify or update GIS information pulled from original as-built drawings, where possible, in an attempt to keep collection system information current.

As-built information was entered into GIS format through efforts of GIS Analysts and staff. As a result, ACUD has a comprehensive and interactive map of every Sanitary District which has available as-built plans. GIS allows for the following:

- Use of embedded objects to link to schematic diagrams and attribute data (including inventory information) for collection system components
- Displaying by color coding the portions of the collection system that need rehabilitated

Map attributes accessible in the GIS system include size, length, pipe type, installation date, manhole numbers, manhole rim and invert elevations, pipe slope, pipe and manhole material, pump stations, force mains, force main material, etc. In addition to collection system data, the County regularly maintains data on parcels, land use/zoning, streets, landmarks, easement lines and dimensions, topography, and more.

In 2011, ACUD began working closely with Allegany County GIS staff to develop best management practices for asset management. As described in Section III, CUES Granite XP software was purchased in late 2011 with the goal of using this software for CCTV data management, design, and seamless integration between field crews and office personnel. ACUD plans to continually evaluate the relationships between field work, office design, and system maintenance to adapt or adopt procedures for asset management.

5. New Construction

Connections to the County wastewater system may only be performed by County staff. Section 166 of the County ordinance covers plumbing improvements and prohibits connection to the public sewer without written notification and approval from the plumbing inspector to the utility owner. If an individual tap is requested, the following occurs:

1. A building permit application is submitted.
2. A copy is provided to the Utilities Division.
3. An inspection is performed to determine the tap cost.
4. The plumbing inspector certifies the installation.
5. Utilities Division staff perform the tap.

ACUD is currently updating our library of standards and specifications. This includes details for private lateral construction and connection to the public sewer system.

When new sewer extensions are needed or desired, the plan review and approval process includes plan review by several departments, including the Utilities Division, along with Zoning approval. The County Engineer also provides comments on the design of all utilities.

The County is developing a comprehensive set of details and specifications for water and sewerage construction. Monthly meetings are held to discuss progress on this endeavor.

Currently, plan review by the Utilities Division is completed by a few staff members who have been conducting reviews for some time. Therefore, there is no written document that describes

the procedures for construction design review. Construction is supervised by County staff. New manholes are tested for inflow and infiltration. Historically, new gravity sewers are checked via deflection and air testing. A County inspector is onsite when tests are conducted and the Contractor supplies the testing reports. For developer projects, when the sewer is installed correctly, the County accepts the sewer line for continued operation and maintenance. In fact, the County rarely allows new private collection systems. As-built record drawings are required for new sewers. The information is entered into the comprehensive GIS system as soon as possible.

6. Pump Stations

Allegany County Utilities Division staff currently operation and maintain ten (10) major sewage pump stations. Table IV-1 below highlights key data for each station:

Table IV-1 Sewage Pump Station Inventory Information

Area	Address	Cont. #	Year Built	Disch. Diam.	Pump Details	Pump Layout **	Elevation Data (feet)				
							Wet Well Invert	First Pump On	Pumps Off	High Water Alarm	P.S. Floor
Bowling Green	11510 Birch Avenue, Cumberland, MD 21502	S-2	1963	8"	(2) 25 HP, 1770 RPM	1	612.75	616.25	615.75	N/A	643
Corriganville	12530 Beachview Drive, Cumberland, MD 21502	S-69	2013	12"	(2) 30 HP, 870 RPM	2	683.69	693.5	687	694.6	717.35
Cresaptown	12525 Darrows Lane, Cumberland, MD 21502	S-4	1964	8"	(2) 20 HP	1	N/A	626.87	626.37	631.37	650
McCoole	21304 Queens Point Road SW, Westernport, MD 21562	S-329[A]	2012	4"	(2) 5 HP	2	800.0	803.00	801.00	806.00	822.5
Mexico Farms	11419 Mexico Farms Road SE, Cumberland, MD 21502	S/W-52	1993	6"	(2) 10 HP, 1760 RPM	3	606.5	610.5	608.5	N/A	617.25
Mill Run	13605 Bealls Mill Road, Cumberland, MD 21502	S-10	1968	8"	(2) 40 HP	1	706.6	710	712	712.25	731.5
North Branch	11600 PPG Road, Cumberland, MD 21502	S-51	1991	16"	(2) 60 HP	3	591.53	600	596	601	612.25
Oldtown Road	12503 Goldens Avenue SE, Cumberland, MD 21502	S-55A	1999	3"	(3) 5 HP, 3450 RPM	3	606.5	609.25	608.5	617.8	618
Locust Grove	10804 Locust Grove Road NW, LaVale, MD 21502	S-23	1975	12"	(2) 30 HP, 870 RPM	1	637.8	644.5	640.75	645.5	661
Wrights Crossing	11427 Upper Georges Creek Road SW, Frostburg, MD 21532	S-7	1965	16"	(2) 125 HP	1	1818	1821.5	1817	1829	1840.5

*** 1 = Wet Well/Dry Well; 2 = Submersible; 3 = Above Ground Suction Lift*

[A] = McCoole P.S. replaced as part of utility relocation for Keyser-McCoole Bridge Replacement Project

Inspections of the pumping stations are performed daily through the week and once on the weekend. During inspections, pump run times, flow, weather, operating pressure, and maintenance activities are recorded in a log book. The log book is photocopied once per month for recordkeeping purposes. Log books have been saved dating back at least 10 years.

All major pumping stations are equipped with alarm systems (telemetry) and stand-by backup power sources. The County also utilizes portable generators, portable diesel driven pumps, and vacuum trucks for emergency stations if necessary.

Standard Operating Procedure (SOP)

The personnel of ACUD use a simple method of LOOK, LISTEN, SMELL for checking sewage pump stations. The pump stations are checked on a daily basis. This allows personnel to develop a sense of pump station conditions that are normal or typical. The habits developed during daily pump station checks allows ACUD personnel to quickly notice if something is out of the ordinary.

- LOOK: A visual check is performed around the station, both inside and outside, for abnormalities.
- LISTEN: As daily paperwork is filled out, personnel listen for anything that may indicate changes in pump station performance.
- SMELL: Abnormal smells are noted and may indicate an issue with the pump station.

Once typical daily procedures are completed and no abnormalities are noted, the ACUD operator continues with daily duties. The operator logs the time of day, weather, pump runtime hours, flow (if available), abnormal conditions noted, and any adjustments made to the station. If any abnormalities are noted, the Pump Station Emergency Protocol goes into effect.

There is a Pump Station Emergency Protocol Procedure that explains alarm conditions, telemetry dialing sequence and response time, assessment factors (alarm code, weather and past history), operator response, and additional assistance instructions. Some alarm conditions causing a call include high water, pump failure, loss of air, power failure, and valve failure. Other conditions that may be recorded are generator operation and heating.

Each station typically has a list of items checked daily, weekly, and monthly. Recorded information includes hours of pump operation and rain gauge data. Some stations have a daily flow chart to complete. Typical preventative maintenance includes greasing of high-maintenance parts.

All ACUD personnel can perform daily pump station checks; however, four employees are assigned these tasks on a daily basis and are informally known as "the checkers." Pump station checks occur every day (Monday-Friday) through the week at each of the ten ACUD-maintained pump stations. Four of the pump stations (Corriganville, Locust Grove, Mill Run, Wrights Crossing) receive checks each day of the weekend, as well. At the remaining stations, no weekend checks are performed from April through the first weekend in October unless warranted. From the second weekend in October through April, weekend checks are performed at these remaining six stations. This variation in frequency is due to weather.

SECTION V - Equipment and Collection System Maintenance

1. Planned and Unplanned Maintenance

Existing and future Sanitary Sewer Evaluation Studies (SSES) as well as development of programs to address high-priority defects will allow the Allegany County Utilities Division to manage the collection system in a more proactive and preventative manner. While there is no maintenance card or record kept of each piece of mechanical equipment within the collection system, available records identify a maintenance schedule, recommendations and a record of maintenance on the equipment to date. Maintenance work involving disturbance to roads is coordinated with the street paving schedule.

2. Sewer Cleaning and Televising

ACUD has an ongoing closed-circuit television (CCTV) and pipe cleaning program. ACUD first purchased CCTV equipment, a jet machine, and vacuum truck in 2008. Equipment has been replaced and updated as needed. This allows implementation of a targeted cleaning program. Currently only two percent of the system is cleaned each year (including repeat cleaning of known trouble spots). Sewer cleaning records include the date and time and cause of any stoppage. Stoppages sometimes occur from root blockages or commercial grease buildups. Neither issue is common.

Typical CCTV inspection videos and accompanying reports include date, location of inspection, distance televised, distance to incoming connections, and pipe type. ACUD has a significant amount of CCTV data for areas throughout the County. Preliminary planning grants (PPG) from state and federal agencies were utilized for contracted CCTV inspection of several areas since 2010. The County is also capable of performing CCTV monitoring and utilizes a stick camera for inspecting manholes and wet wells. A pole camera is also utilized for inspection purposes. Several ACUD staff members and inspectors are certified to use a nationally known pipe rating system (NASSCO PACP). CCTV inspections are logged on appropriate forms with utilization of the rating system.

Past physical defects identified through CCTV inspections are generally of a structural nature as opposed to operation and maintenance based issues. These include house connection leaks, joint separation, offset joints, root intrusion, debris and crushed and collapsed pipes.

CCTV inspection currently facilitates determination of exact lateral location and the feasibility of lining versus replacement. This information is frequently used during project design.

3. Easements and Rights-of-Way

ACUD also has an ongoing easement/right-of-way clearing and maintenance program. Easements are obtained during design to provide access to sewer lines on private property. Rights-of-way are obtained when sewer lines cross one property to serve another. Clearing and maintenance of these points of access is necessary in the event rehabilitation or replacement actions are required. It also provides an opportunity to inspect these remote sewer lines and reduce root problems.

4. Pumping Station and Force Main Maintenance

Many of the pump stations in Allegany County are well over 30 years old. Several still have original pumps and parts, while some have been rebuilt due to damage from flooding or other events. Please refer to *Table IV.A. Sewage Pump Station Inventory Information* in ***Section IV*** for information on Allegany County's sewage pump stations.

There is currently no Standard Maintenance Procedure used for the pumping stations. Manufacturer manuals with recommended maintenance schedules for all equipment are available.

Few areas of the collection system are vulnerable to hydrogen sulfide corrosion. There is no formal corrosion control program. The County does take into consideration the potential for hydrogen sulfide corrosion when designing new or replacement sewers. Areas subject to hydrogen sulfide and its consequent odor are inspected periodically and treatment includes application of chemicals like chlorine, sodium hydroxide and hydrogen peroxide, or simple aeration. Manholes have been lined and received odor control canisters in known problem areas.

There is no formal maintenance program for force mains in Allegany County. Inventory data on force mains present in each Sanitary District is available in ***Section II***.

5. Parts and Equipment Inventory

ACUD personnel have used past experience to identify critical spare parts. The County keeps adequate supplies to perform at least two point repairs in any part of the system. Parts standardization is desired and the County strives to maintain as much parts standardization as possible.

Spare parts for pumping stations such as seals, impellers, shaft, bearings, motors, and spare pumps are stocked in each pumping station building. Because there are many sanitary districts within the county, there are regional locations for storing other spare parts. The Bowling Green Service Center houses both ACUD personnel as well as most of the spare parts not appropriate for storage in individual pump stations.

Spare parts are inventoried each year. Maintenance staff notifies managers when parts are needed. For parts not in stock, the County maintains a readily available source or supplier. Typical items in stock at the Bowling Green Service Center include:

- Stainless Steel Repair Clamps (of varying sizes)
- Full Circle Repair Clamps
- Couplings
- Plastic Sewer Pipe
- Ductile Iron Pipe
- Concrete Manholes
- Gate Valves
- Miscellaneous Fittings
- Cured-in-Place-Pipe Patch Repair Kits

SECTION VI - Sewer System Capacity Evaluation

Sewer system capacity evaluations are used to ensure the existing sewer collection system is functioning properly in dry and wet weather conditions. The Allegany County Department of Public Works – Utilities Division (ACUD) performs capacity evaluations in varying stages for all its Sanitary Districts on an ongoing basis to maintain current data on all systems and properly plan future rehabilitation projects.

There are four main components to a sewer system capacity evaluation:

1. **Flow Monitoring**
2. **Testing**
3. **Inspection**
4. **Sewer Modeling**

More information on ACUD's approach to each item appears below:

1. Flow Monitoring

A. Identification of Overflow Points

Understanding where overflow points are located is a critical step to evaluating any problems within a collection system. During a wet weather event, Combined Sewer Overflows (CSO)/Sanitary Sewer Overflows (SSO) occur because storm runoff and/or I&I combines with sanitary sewer flow and exceeds the carrying capacity of the existing collection system. These points of illicit discharge into local waterways are targeted for elimination in many sewer replacement or rehabilitation projects.

Identification of these overflow points is useful because flow monitoring can occur at these locations to determine the variation in flow between dry weather (normal, diurnal conditions) and wet weather (when flows are presumably much greater). The impact of inflow and infiltration (I&I) is known when dry weather periods are compared to wet weather events. ACUD also monitors different areas to determine where problems are occurring. This is done through installation of flow meters. The County currently utilizes approximately 10 different flow meters at any time at locations throughout the County.

Table VI-1 below shows the locations of known overflow points throughout Allegany County:

Table VI-1 Allegany County Overflow Locations

Sanitary District	Overflow Point Name	Location Description
Braddock Run	Wrights Crossing #1 (Wrights Crossing)	Wrights Crossing P.S.
Braddock Run	Wrights Crossing #2 (Braddock Estates)	b/w Welsh Hill Road & Wrights Crossing P.S.
Braddock Run	Wrights Crossing #3 (Frostburg)	Near Pour House (Grant & Green Streets)
Georges Creek	MH 1157	Shaft
Georges Creek	MH 1043	Lonaconing
Georges Creek	MH 110	Barton
Jennings Run	MH 47	b/w Corriganville & Mt. Savage
Jennings Run	Corriganville P.S.	Corriganville P.S.
Jennings Run	Locust Grove P.S.	Locust Grove P.S.
Bedford Road	Mill Run P.S.	Mill Run P.S.
Bedford Road	MH 126	Naves Cross Road
Cresaptown	Cresaptown P.S.	Cresaptown P.S.
Cresaptown	MH 20	Darrows Lane, Cresaptown

Flow monitoring currently occurs at all overflow points in the Braddock Run and Georges Creek Sanitary Districts and at MH 126 in the Bedford Road Sanitary District. Data is collected by ACUD personnel. The other locations must be checked manually and flows are estimated for reporting purposes during high-flow events.

2. Testing

A. Smoke Testing

ACUD performs smoke testing on an as-needed basis throughout the County to determine if, and where, illicit connections to the sanitary sewer collection system occur on private property. Inflow sources are most commonly noted during smoke testing and can occur as a result of storm sewer cross connections, roof leaders, cellar drains, yard drains, area drains, and broken cleanouts. ACUD policy is that smoke testing is performed by the Inflow and Infiltration (I&I) crew by request of the Utilities Division Chief or Area Supervisor of Collection & Distribution Systems Maintenance. This request generally occurs during project design or early in the construction phase of a sewer rehabilitation project. Prior to smoke testing, property owners are notified via door hangers, door-to-door visits, or mailings.

B. Dye Testing

ACUD may sometimes perform fluorescent dye testing of "suspect" sources when assessing each property's plumbing. Dye testing on private property is generally performed on downspouts, area drains, and floor drains where no smoke was observed during smoke testing. Dye is poured into the subject drain. Water is flushed through the system and if the dye is observed in the public sewer system outside the home, it alerts ACUD personnel that the drain is connected directly to the public sewer system.

3. Inspection

A. Private Property Plumbing Assessments

Another responsibility of the I&I crew is to perform County-wide private property plumbing assessments to help uncover illicit connections and document any defects that require corrective action by a private property owner.

Sources evaluated during a private property plumbing assessment include:

Interior Sources
- Sump Pumps
- Foundation Drains
- Basements (risk to flood broken cleanout)
- Window Well Drains
- Stair Drains

Exterior Sources
- Downspouts
- Area Drains

If a property owner is found to have an illicit connection during a private property plumbing assessment, violation notices are distributed. This information is tracked in a home inspection database along with photos, notes, and sketches that document all completed inspections. The I&I crew currently uses a home inspection application developed for iPads (tablet computers) by

the Allegany County GIS Department in 2012. This allows the I&I crew to collect data in the field (including photographs) that becomes automatically attached to the individual asset within the larger County GIS database. This eliminates the need for data entry in the office and saves valuable time while reducing likelihood for errors.

B. Manhole Inspections

ACUD performs manhole inspections throughout the County to determine condition and make recommendations on proper rehabilitation or replacement actions for future projects. Similar to private property plumbing assessments, a database of manhole inspections and data is maintained for use in project planning and design. ACUD also utilizes a manhole inspection application (similar to the home inspection application described in the previous section) to enter field observations/photos and keep track of all pertinent data in one place within the GIS.

County personnel utilize a pole camera to take photos/video during a manhole inspection. Among the data collected is:

- Manhole Location
- Rim & Ground Elevation Difference
- Manhole-to-Frame Connection Condition
- Manhole Cover Vent Hole/Pick Hole Inventory
- Manhole Material
- Interior & Frame/Cover Condition
- Size, Number, Location of Inlets/Outlets
- Photographs

4. Sewer Modeling

Upon completion of flow monitoring, testing, and inspection for a given area, and upon determination that a rehabilitation project is warranted, ACUD uses the gathered data to develop a sewer model using its purchased modeling software, Bentley SewerGEMS (v8i). Starting in 2013, ACUD plans to use the existing County GIS database along with as-built information from completed rehabilitation projects throughout the County to develop a working sewer model of the various Sanitary Districts under ACUD operation and maintenance. Sewer modeling has been done by consultants for various recent projects (Bedford Road Sanitary Sewer Evaluation Study (SSES) – 2008, Jennings Run/Wills Creek SSES – 2009). Depending on the availability of funding and as project designs require, future sewer modeling will be performed in-house by ACUD personnel or via consultant collaboration.

5. District-Specific Evaluations

As noted in Section VIII, ACUD is to performs district-specific evaluations to determine available capacity and identify wastewater flow patterns. Gathered information will be presented in the ACUD CMOM in the following manner: a spreadsheet

A. District

1. Identification of Trends in Overflows and metered flow.

2. Flow Monitoring

3. **Comparison to other districts based on GPD/EDU**

4. **Sewer System Testing and Inspection**

ACUD acknowledges the usefulness of this information and has begun using Granite in-house. This effort is documented in GIS.

SECTION VII - Sewer System Rehabilitation

1. Maintain Structural Integrity

A. Public Sewer System Structural Integrity

Allegany County Department of Public Works – Utilities Division (ACUD) considers maintenance of pipe structural integrity to be one of its primary focuses. Structurally sound pipes allow for proper flow of wastewater and help minimize problems. Therefore, ACUD is constantly inspecting, testing, and evaluating its sewer network to properly plan for any future construction and system maintenance. Several factors go into determining whether an area is appropriate for a rehabilitation or replacement project:

a. Presence of Consent Order

Areas currently under Consent Order to reduce CSO/SSO are among those first considered by ACUD. Projects are designed to reduce inflow and infiltration and repair pipe networks, pumping stations, force mains and/or interceptors.

b. Potential Hazard to Public

Areas where an increased possibility for private/basement backup exists will be considered a high priority. Additionally, removal of a CSO/SSO point will help eliminate the associated public health hazard (untreated wastewater) with such an overflow.

c. Severity/Frequency of Structural Defects

Subsequent to closed circuit television inspection, pipes are rated according to the National Association of Sewer Service Companies (NASSCO) rating matrix of 1-5, where 1 is a minor defect and 5 is a severe defect. Structural defects are those that require patching, lining, or replacement and cannot be accomplished in the course of normal cleaning activities. Areas with large amounts of Level 5 Structural Defects will be prioritized for repair work ahead of other areas with less severe defects.

d. Severity/Frequency of Maintenance Defects

As noted in Section VII.1.A.c, maintenance defects are also rated on a 1-5 scale, with 5 being the most severe. Maintenance defects do not typically affect the structural integrity of the host pipe and may often require jetting, cleaning, debris removal, or other methods. Areas with large amounts of Level 5 Maintenance Defects will also be prioritized for repair work ahead of other areas with less severe defects.

2. Limit Excessive Inflow & Infiltration (I&I)

A. Source Elimination of I&I

Sewer rehabilitation projects conducted from 2009-2014 in the Bedford Road Sanitary District and Jennings Run/Wills Creek Sanitary District helped identify many specific problems that contribute to I&I in Allegany County. Defects such as broken cleanouts, collapsed laterals, and damaged manhole covers contribute a large percentage of the I&I seen in the County. As future projects are planned, County engineering staff is becoming more adept at planning projects to eliminate as much I&I as possible.

A Sanitary Sewer Evaluation Study (SSES) was done for both the Bedford Road Sanitary District and the Jennings Run/Wills Creek Sanitary District and estimated that as much as 70% of total I&I may originate on private property. Therefore, Allegany County makes every effort to repair both public and private sewers as much as possible. This is done to prevent avoidable issues with private sewers.

3. Limit Groundwater Contamination due to Sewer System Exfiltration

An additional concern for sewer pipe networks is to limit exfiltration of wastewater into surrounding groundwater. Exfiltration occurs when leaking joints or busted pipes allow wastewater to seep out of the host pipe and into the surrounding groundwater. This is noted as a secondary concern because a large majority (approximately 85%) of County residents are served by a public water utility. Thus, groundwater contamination would not directly impact drinking water quality for many people in the County. Further, those who are not currently served by a public water utility very likely do not have public sewer, either.

SECTION VIII - CMOM Summary

Allegany County Department of Public Works – Utilities Division (ACUD) plans to use the CMOM as a working document that highlights the policies, procedures, and detailed information pertaining to the many sanitary districts currently under ACUD control. ACUD realizes that some information in this document may become dated and will update/amend the document as necessary in an effort to maintain a current view of collection system inventory, operation, maintenance, and capacity evaluation.

ACUD wishes to pursue the following goals in an effort to achieve greater efficiency in day-to-day operations:

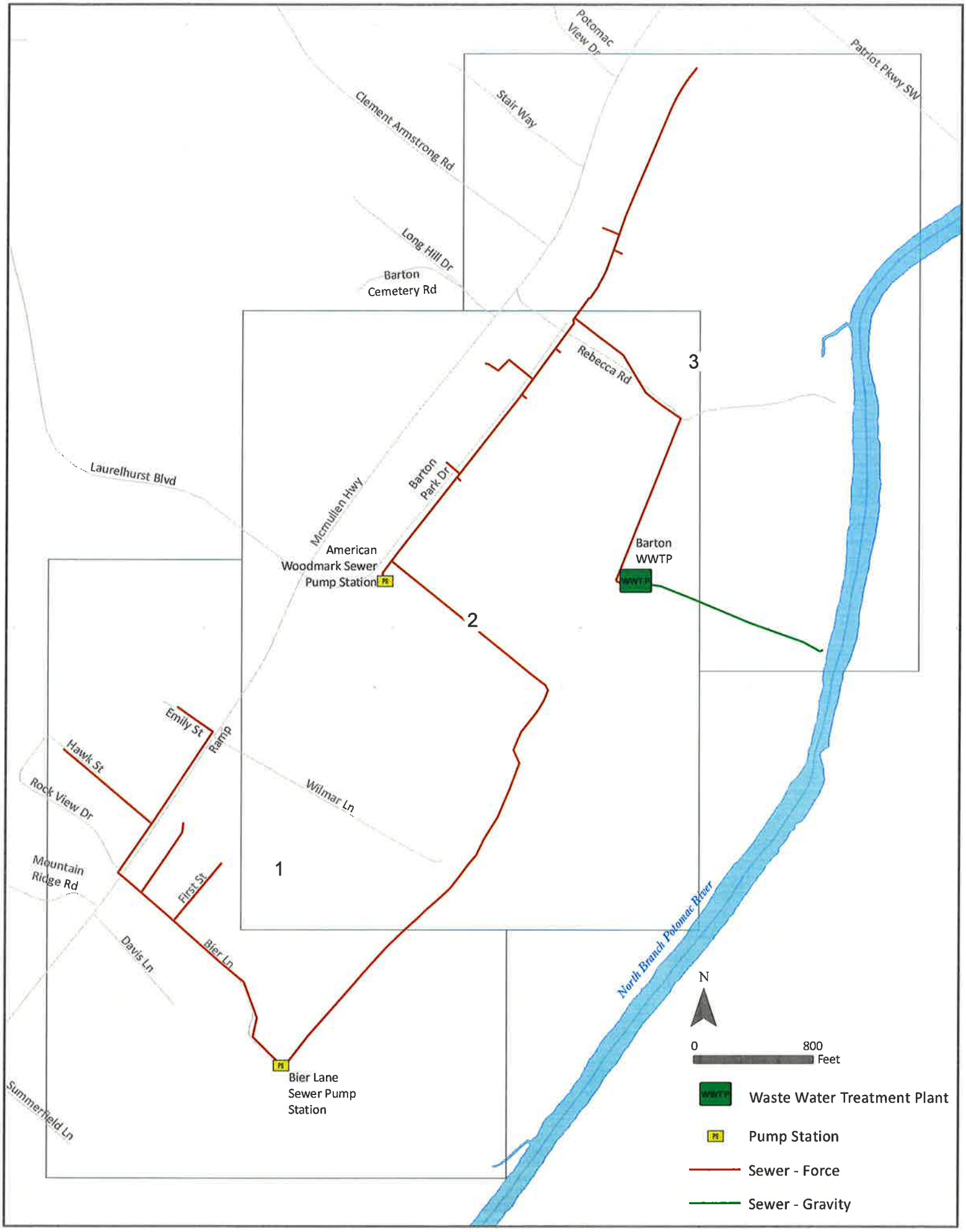
1. Update standard details and specifications that can be used both internally and externally
2. Maximize use of available software and GIS to fully implement decision-making and project design based on field reconnaissance
3. Use existing software to carry out district-specific capacity evaluations
4. Conduct a biannual review of the CMOM document to determine if any changes/amendments are required

APPENDIX A

SYSTEM MAPS

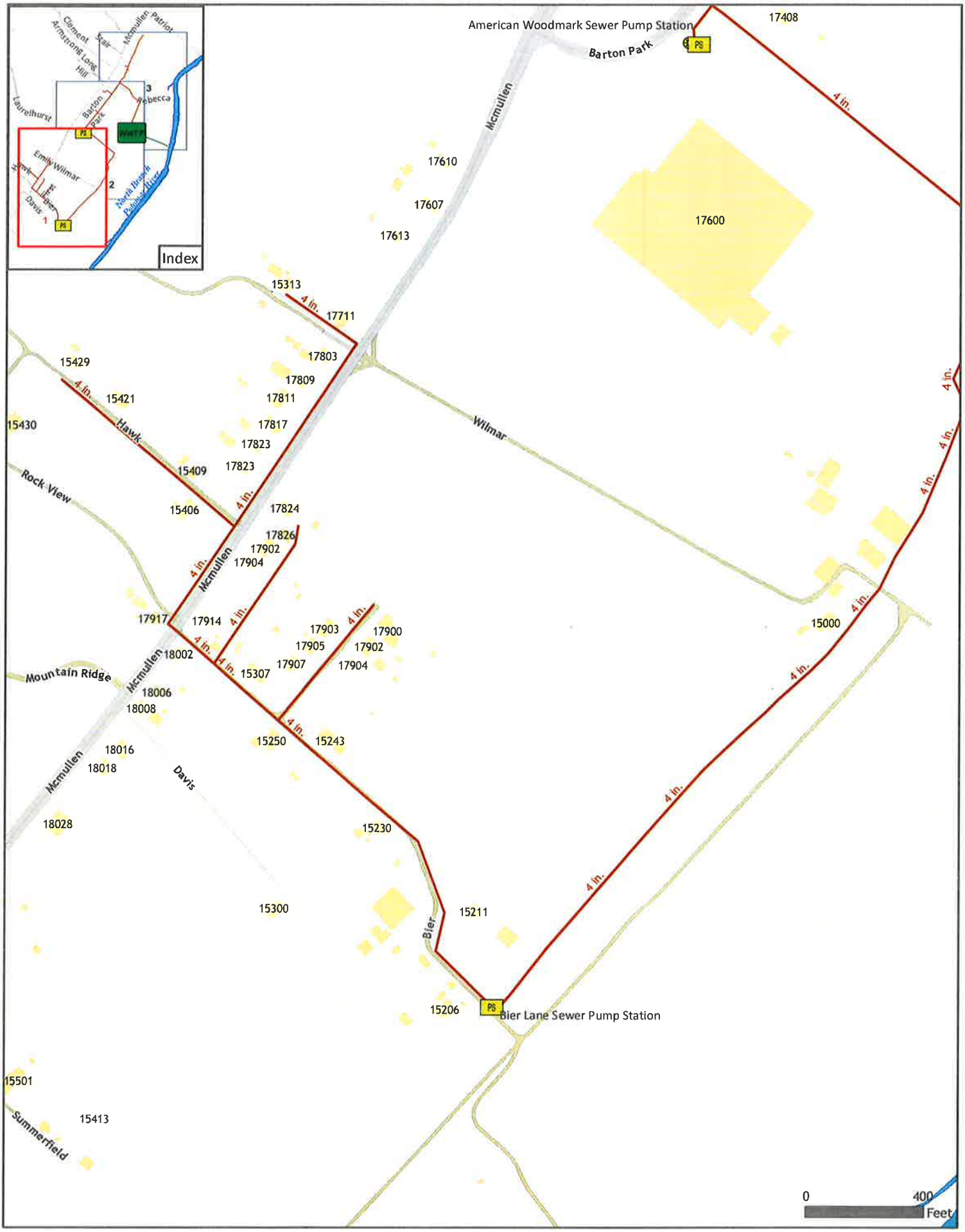
Appendix A-1:	Barton Business Park
Appendix A-2:	Bowling Green
Appendix A-3:	Cresaptown
Appendix A-4:	Bedford Road
Appendix A-5:	Braddock Run
Appendix A-6:	Jennings Run/Wills Creek
Appendix A-7:	Mexico Farms
Appendix A-8:	Oldtown Road
Appendix A-9:	Flintstone
Appendix A-10:	Georges Creek
Appendix A-11:	McCoole
Appendix A-12:	Oldtown
Appendix A-13:	Franklin/Brophytown

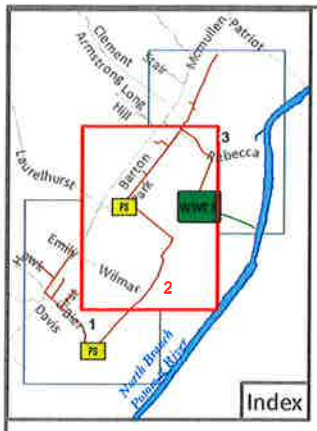
Barton Industrial Park Index



Barton Industrial Park

Sheet 1





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17318
15213
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17610
17607
17613
17600
15000
17400

Mcmullen
Barton Park
Rebecca
Laurelhurst
Wilmar

3 in.
4 in.
10 in.

American Woodmark Sewer Pump Station
PS

Barton WWTP
WWTP
1-59
2-59
3-59
4-59

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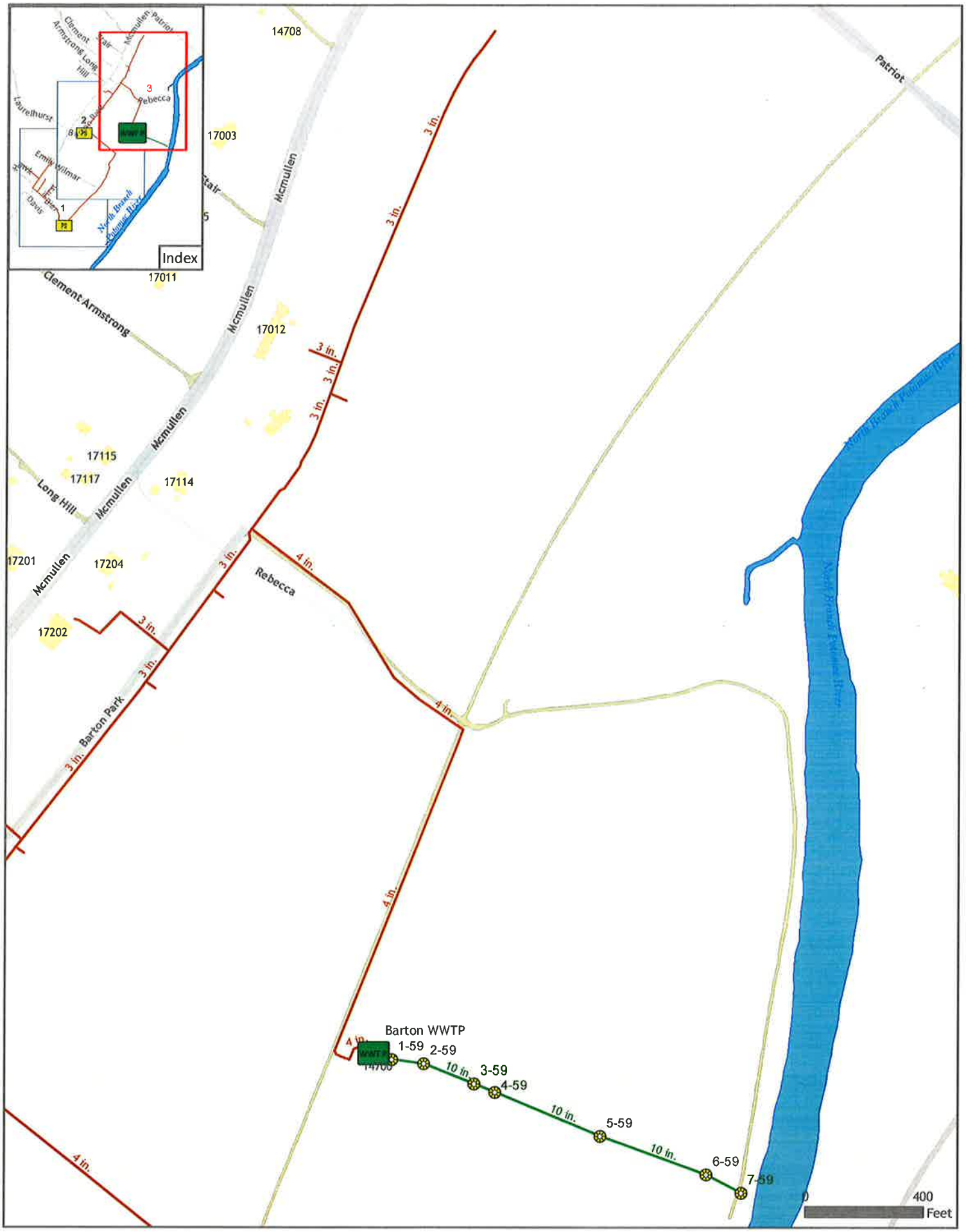
Feet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Clement Armstrong
Mcmullen
Long Hill
Rebecca
Patriot
Barton Park
3 in.
4 in.
10 in.
Barton WWTP
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3-59
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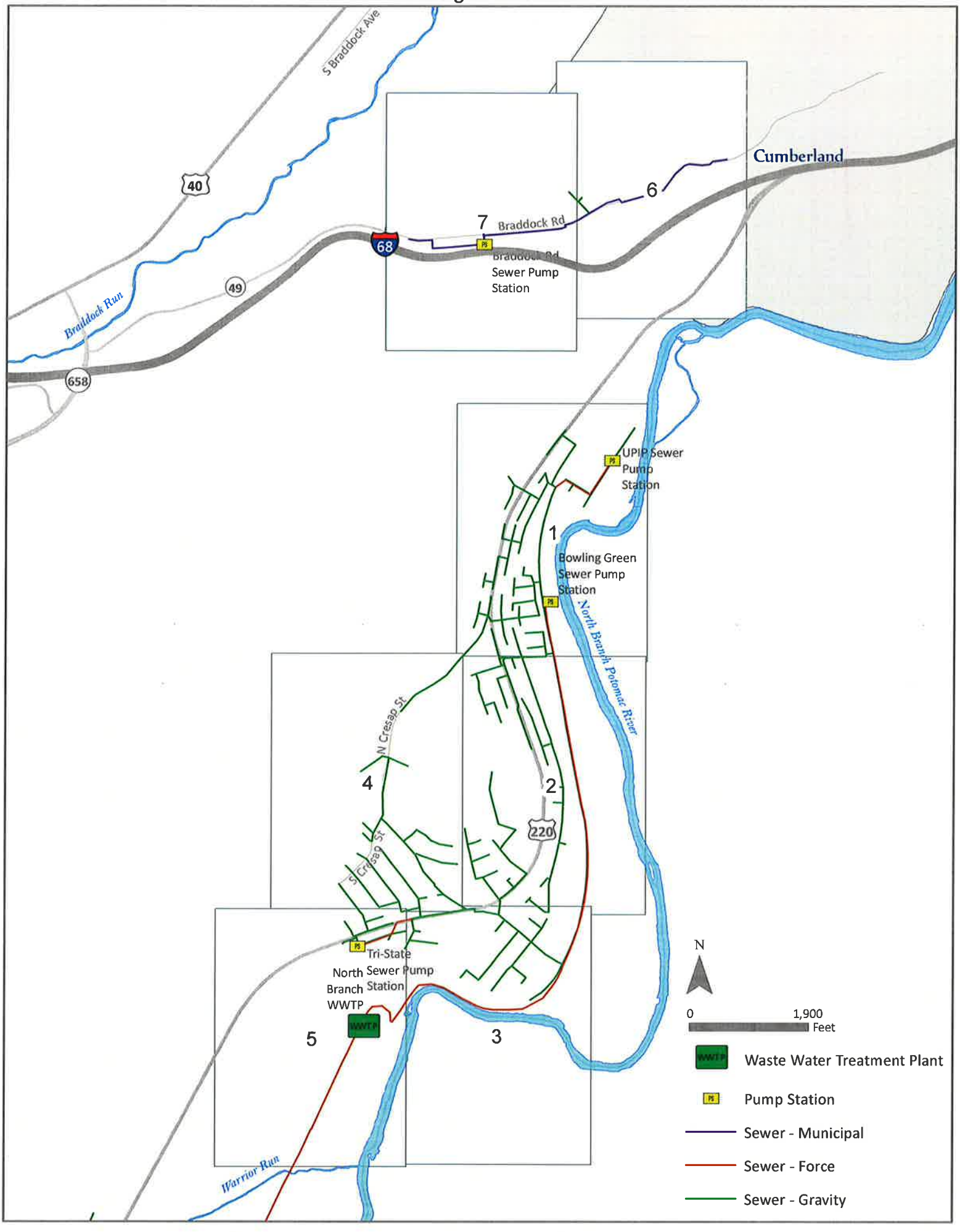
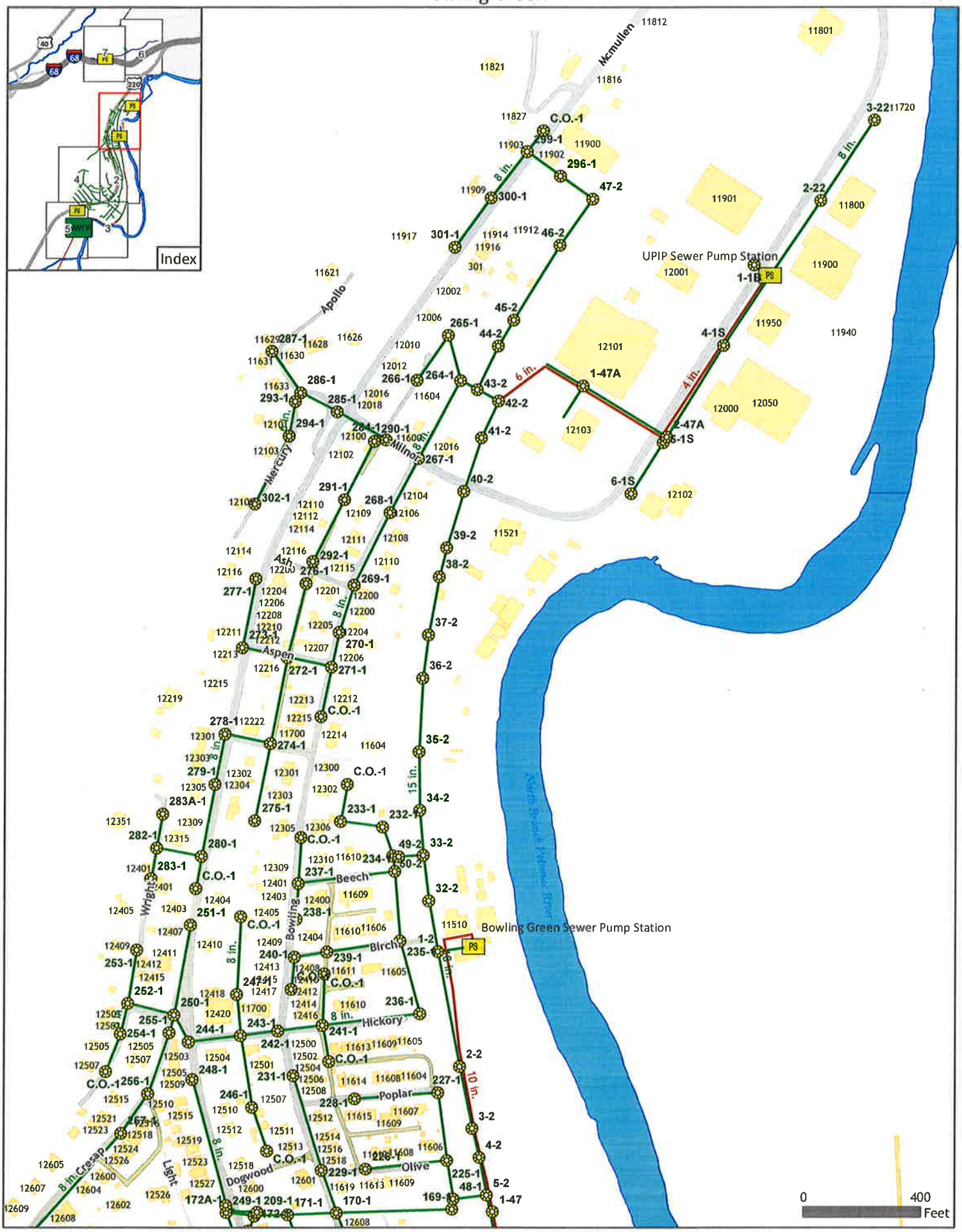
Feet

Bowling Green Index




Index
McMullen
Apollo
Mercury
Millnor
Ash
Aspen
Wright
Bowling
Beech
Birch
Hickory
Poplar
Olive
Dogwood
Light
Cresap
UPIP Sewer Pump Station
Bowling Green Sewer Pump Station
North Branch Potomac River
C.O.-1
1-47A
1-47
1-1B
2-47A
3-22
4-1S
5-1S
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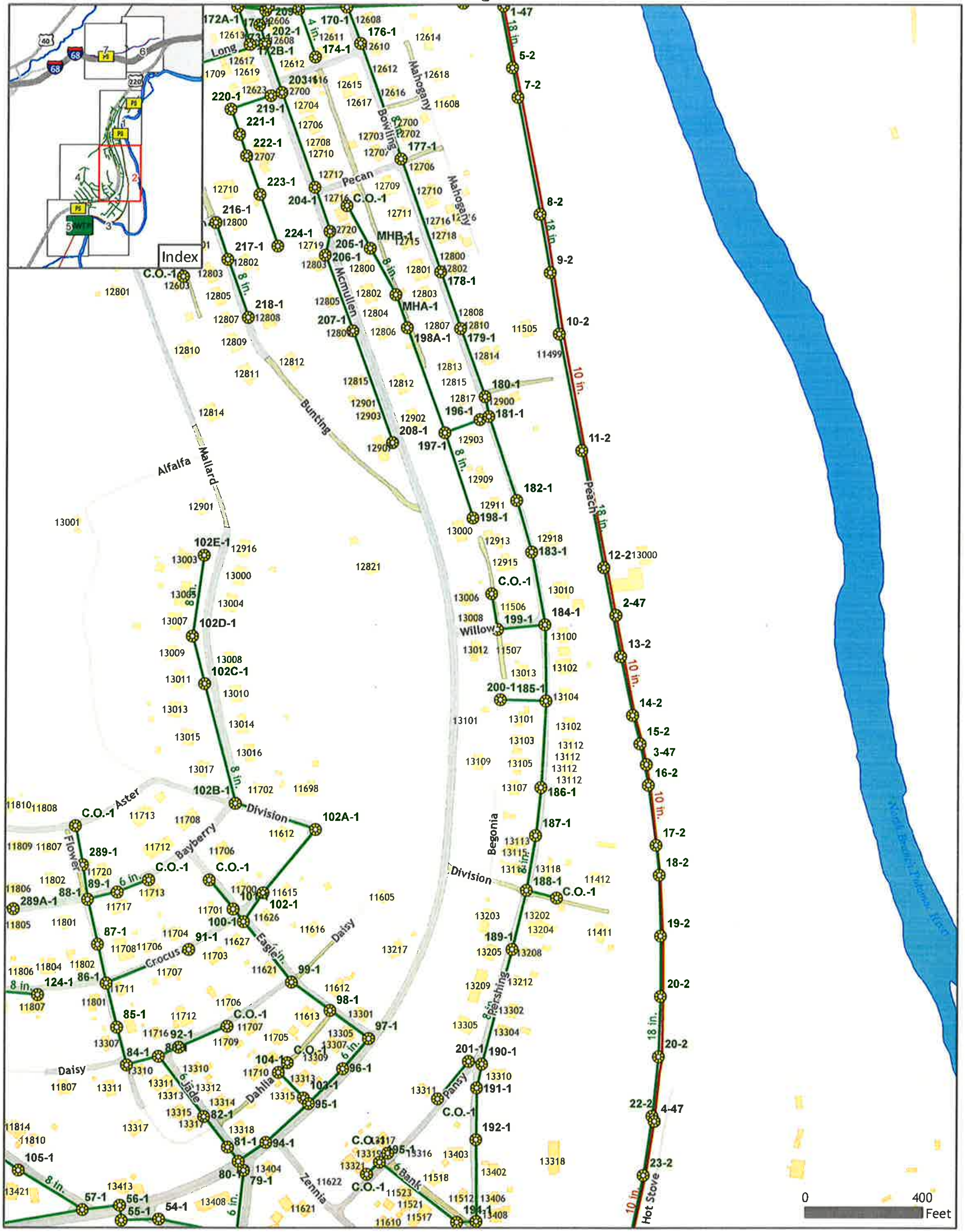
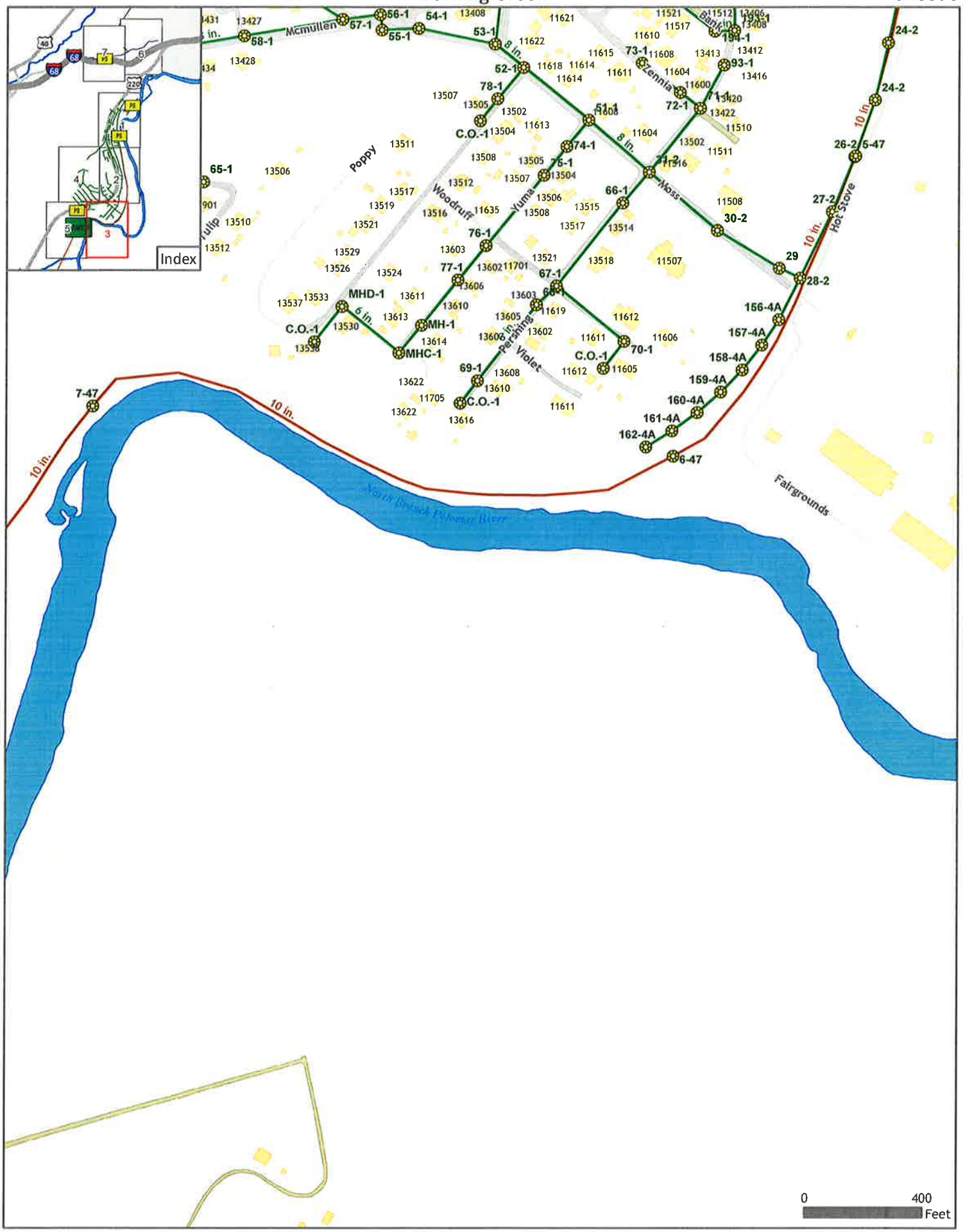
Feet

Bowling Green




Index
Mcmullen
Poppy
Woodruff
Yuma
Mass
Zennia
Violet
Pershing
Hot Stove
Fairgrounds
North Branch Potomac River
10 in.
8 in.
6 in.
MHD-1
MH-1
MHC-1
C.O.-1
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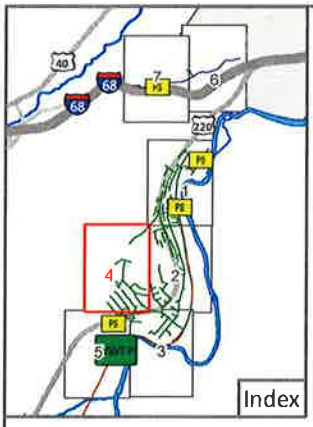
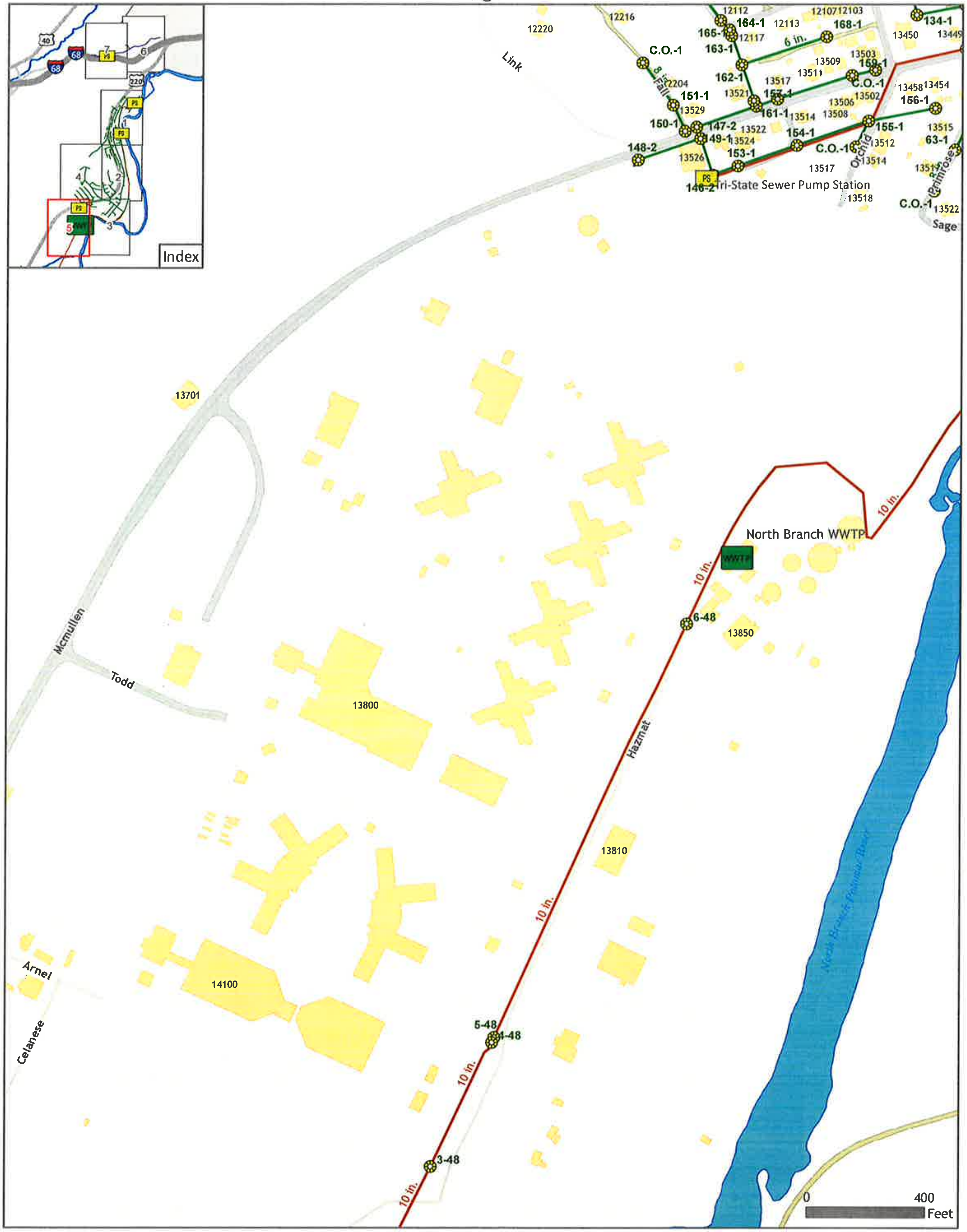
400
Feet



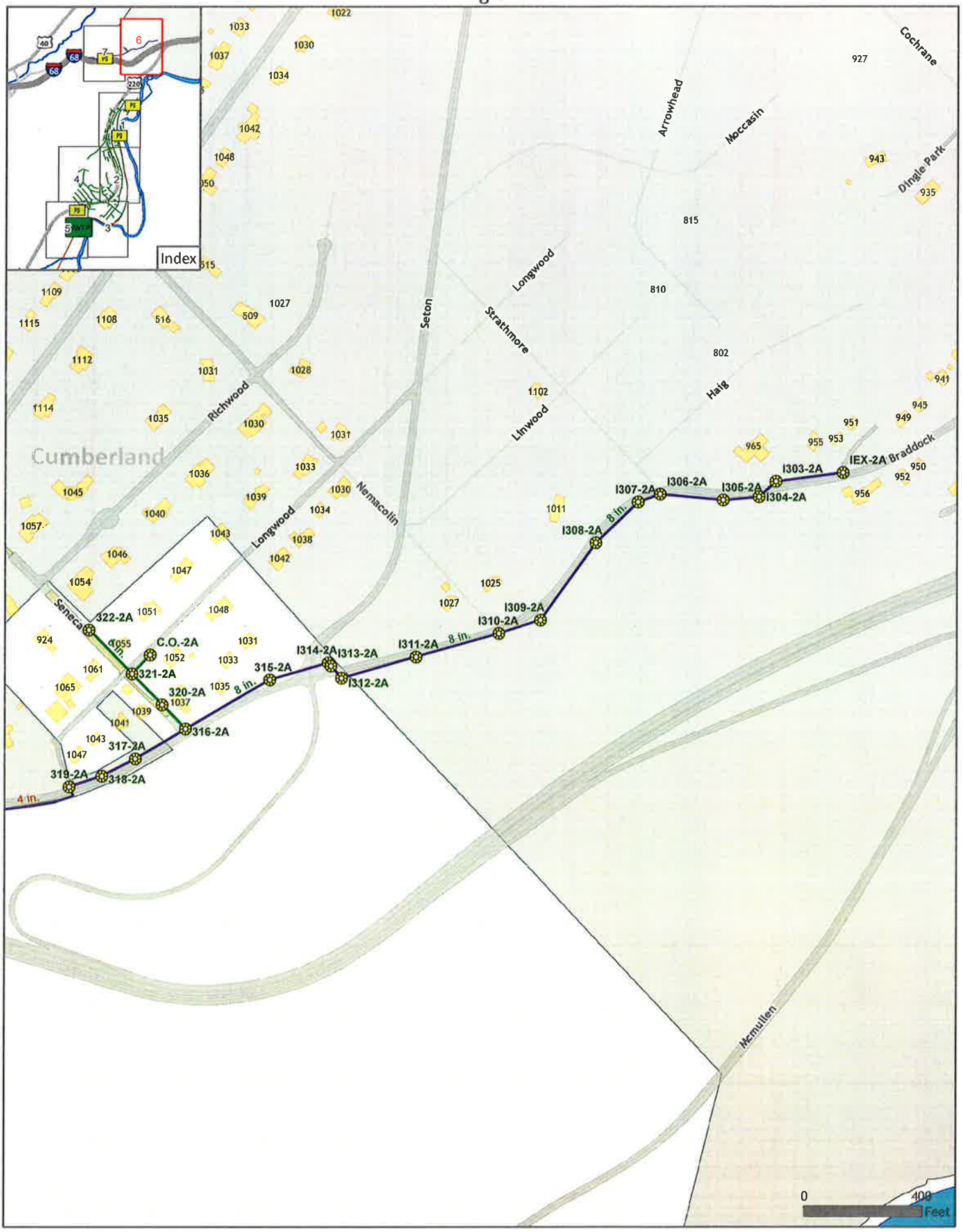
Log Trail
Cresap
Cresap Knolls
Division
Aster
Bayberry
Ginger
Dandelion 6 in.
Mulberry
Cactus
Kite
Iris
Crocus
Daisy
Lotus
Marigold
Fall
Link
8 in.
6 in.
C.O.-1
258-1
259-1
260-1
261-1
263-1
312-1
311-1
313-1
314-1
117-1
116-1
115-1
114-1
113-1
118-1
119-1
120-1
121-1
112B-1
112A-1
112C-1
112-1
288-1
289-1
289A-1
132-1
138A-1
138-1
145-1
144-1
143-1
167-1
166-1
142-1
137-1
136-1
135-1
141-1
140-1
150-1
129-1
128-1
127-1
133-1
111-1
110-1
122-1
123-1
124-1
109-1
108-1
107-1
106-1
105-1
0
400
Feet

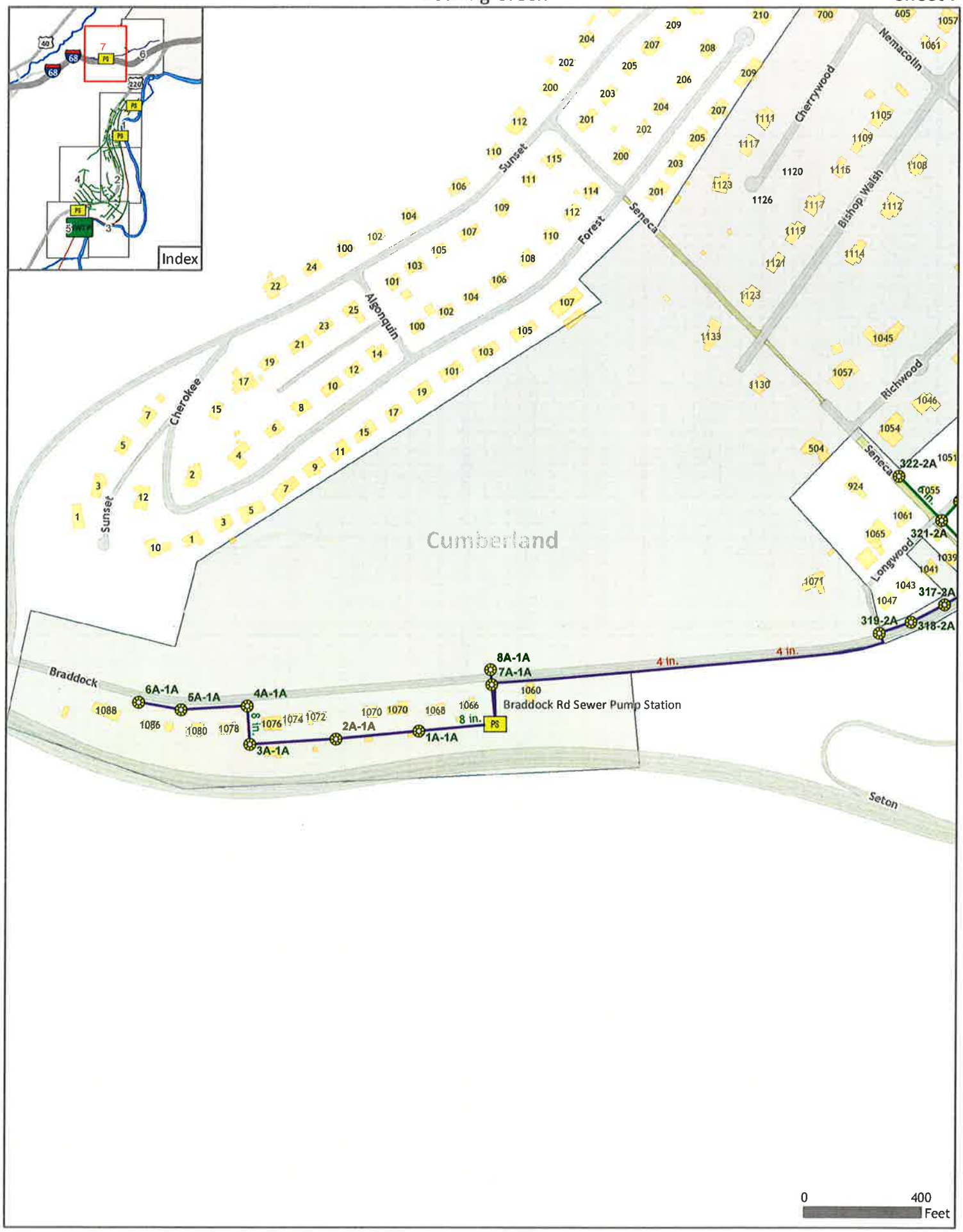
Bowling Green

Sheet 5

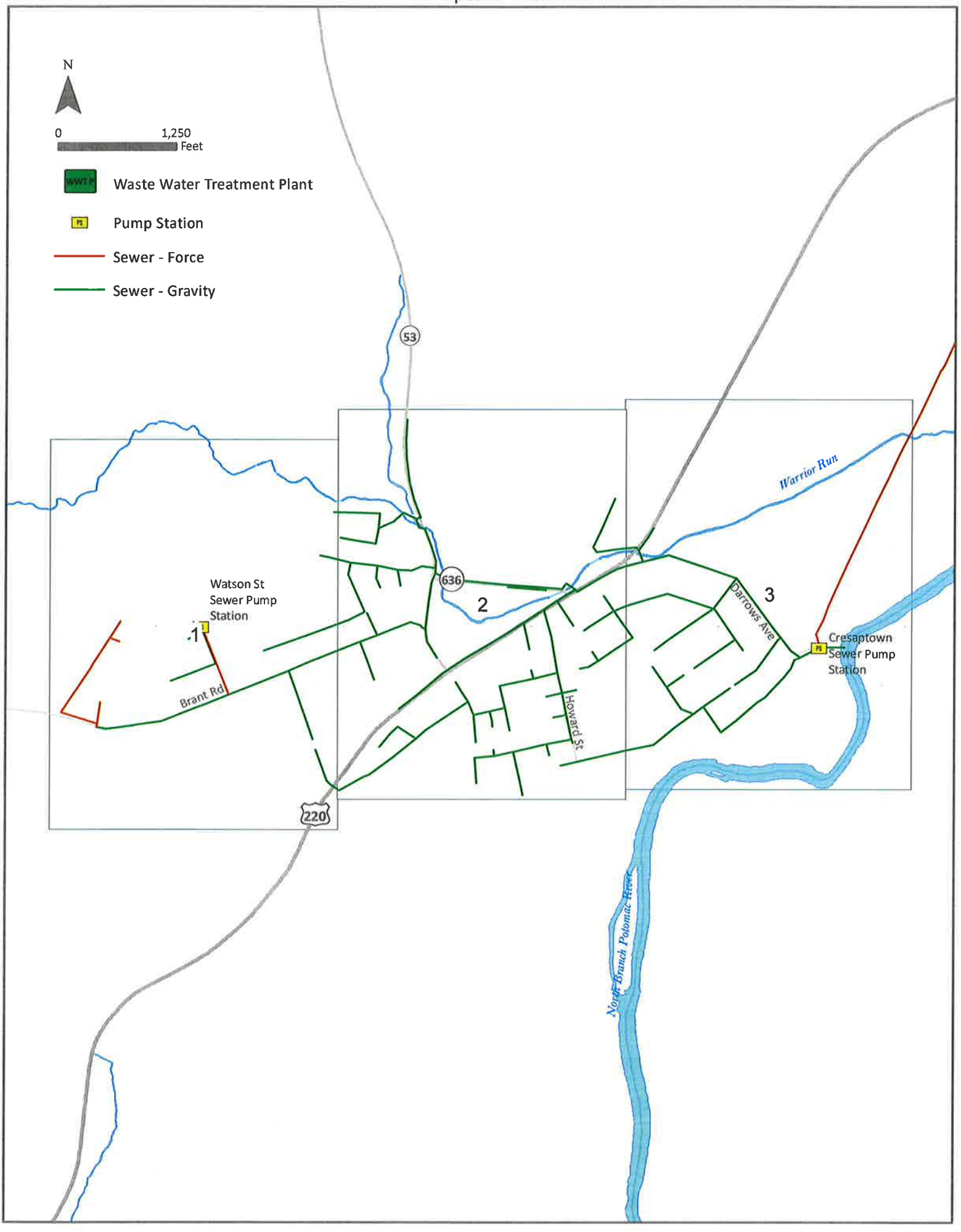


Index
Link
C.O.-1
164-1
168-1
134-1
166-1
163-1
162-1
159-1
156-1
151-1
150-1
147-2
149-1
148-2
153-1
154-1
155-1
157-1
161-1
63-1
Orchid
Primrose
Sage
6 in.
Tri-State Sewer Pump Station
PS
12220
12216
12112
12113
12117
12204
13450
13509
13511
13503
13517
13521
13529
13506
13502
13458
13454
13514
13508
13515
13522
13524
13526
13517
13512
13514
13518
Mcmullen
Todd
North Branch WWTP
WWTP
10 in.
6-48
13850
13701
13800
Hazmat
13810
North Branch Potomac River
Arnel
Celanese
14100
5-48
4-48
3-48
0
400
Feet


Index
Cumberland
Seton
Longwood
Strathmore
Linwood
Haig
Arrowhead
Moccasin
Cochrane
Dingle Park
Richwood
Nemacolin
Seneca
Mcmullen
322-2A
C.O.-2A
321-2A
320-2A
316-2A
317-2A
318-2A
319-2A
315-2A
I314-2A
I313-2A
I312-2A
I311-2A
I310-2A
I309-2A
I308-2A
I307-2A
I306-2A
I305-2A
I304-2A
I303-2A
IEX-2A Braddock
8 in.
4 in.
0
400
Feet

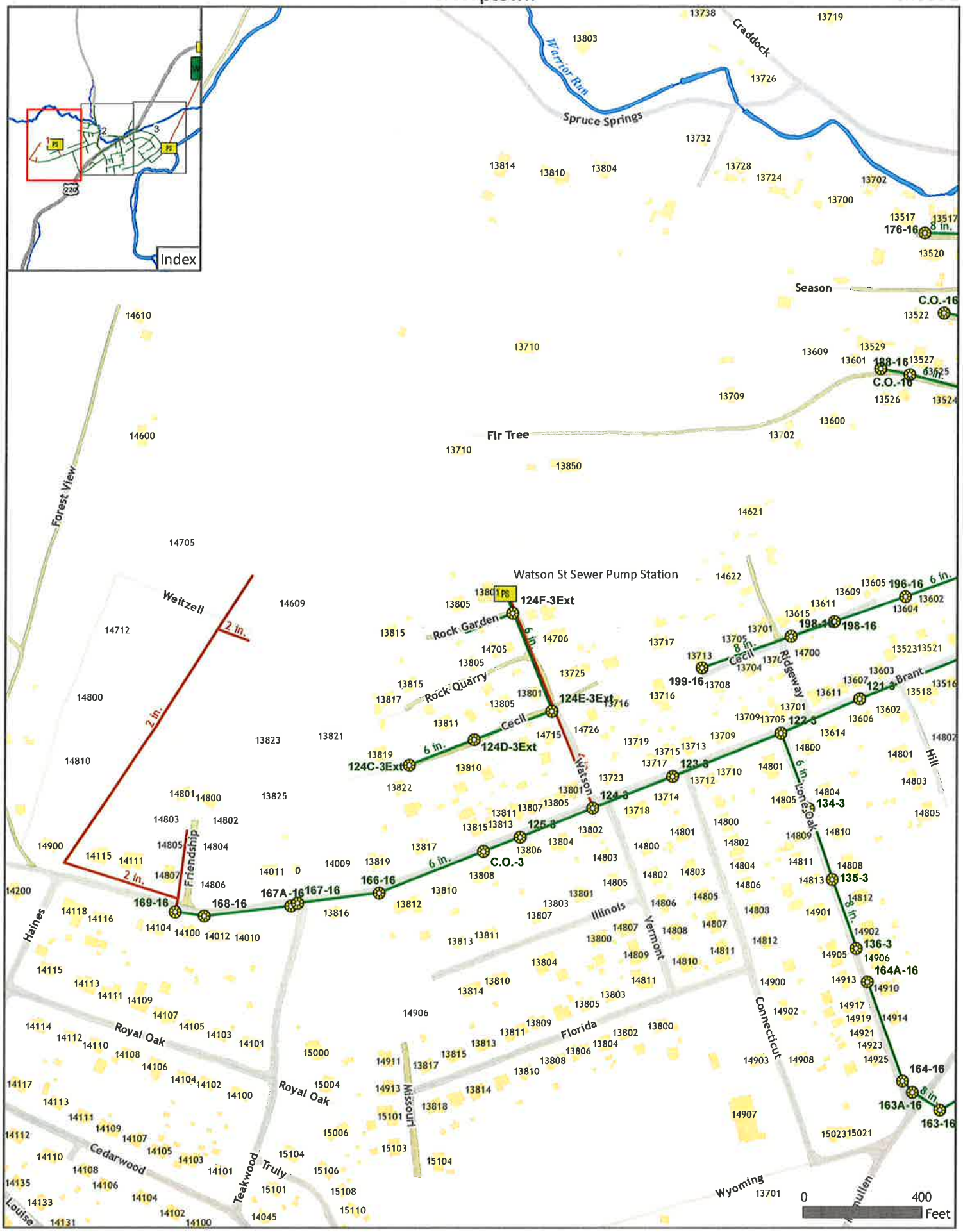

Index
Cumberland
Braddock
Sunset
Cherokee
Algonquin
Forest
Seneca
Cherrywood
Nemacolin
Bishop Walsh
Richwood
Longwood
Seton
6A-1A
5A-1A
4A-1A
3A-1A
2A-1A
1A-1A
7A-1A
8A-1A
322-2A
321-2A
317-2A
319-2A
318-2A
Braddock Rd Sewer Pump Station
PS
8 in.
4 in.
0
400
Feet

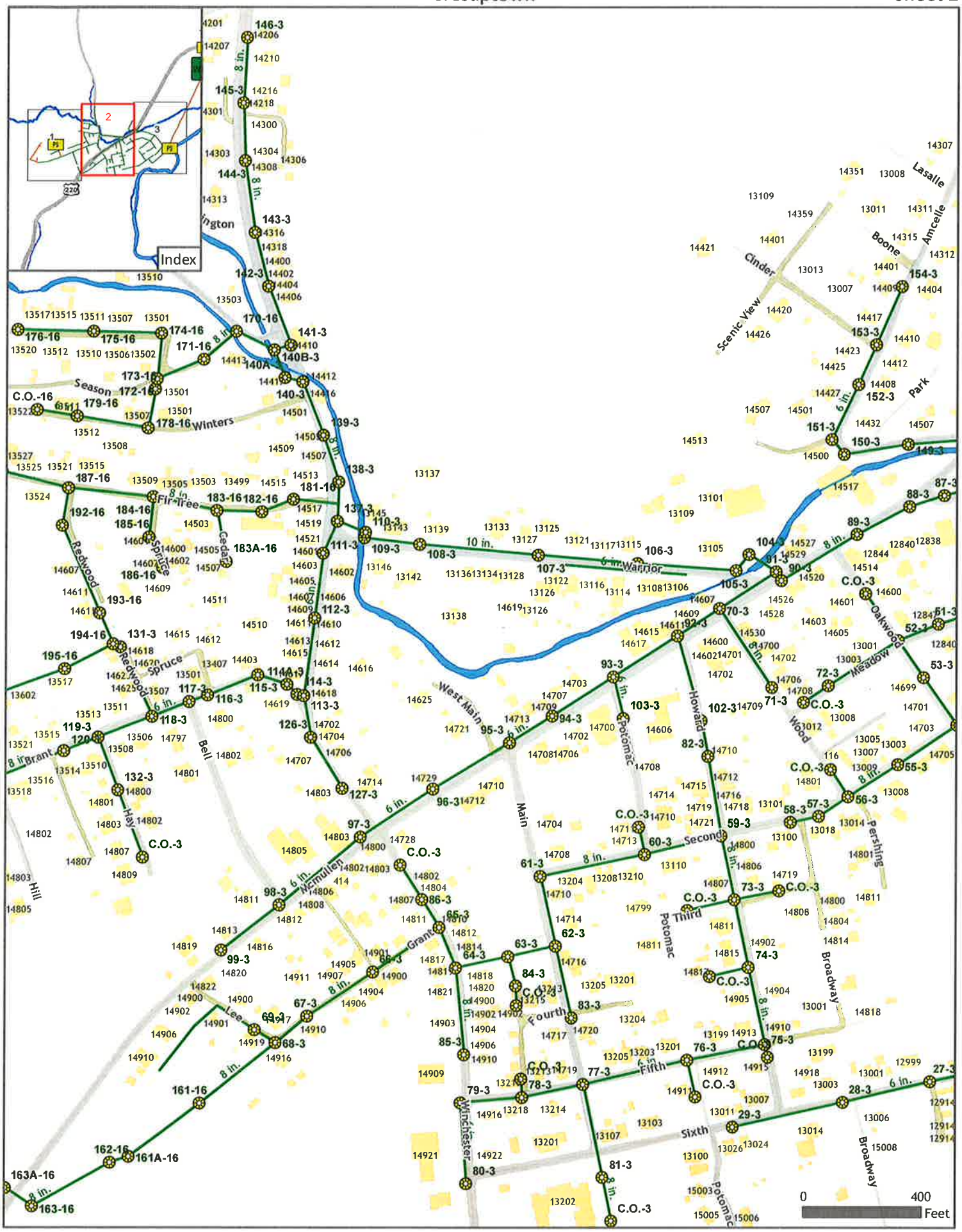
Cresaptown Index



Cresaptown

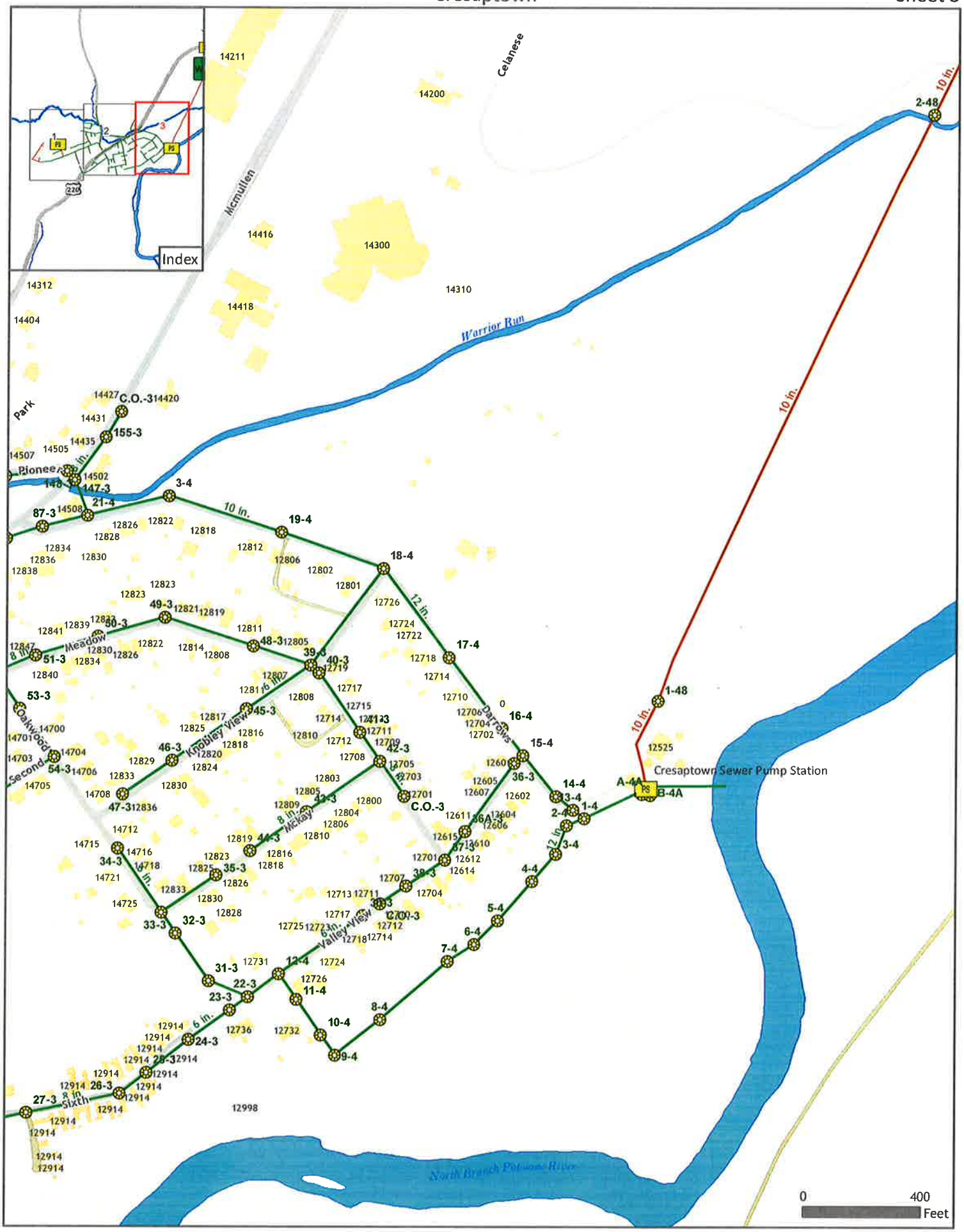
Sheet 1



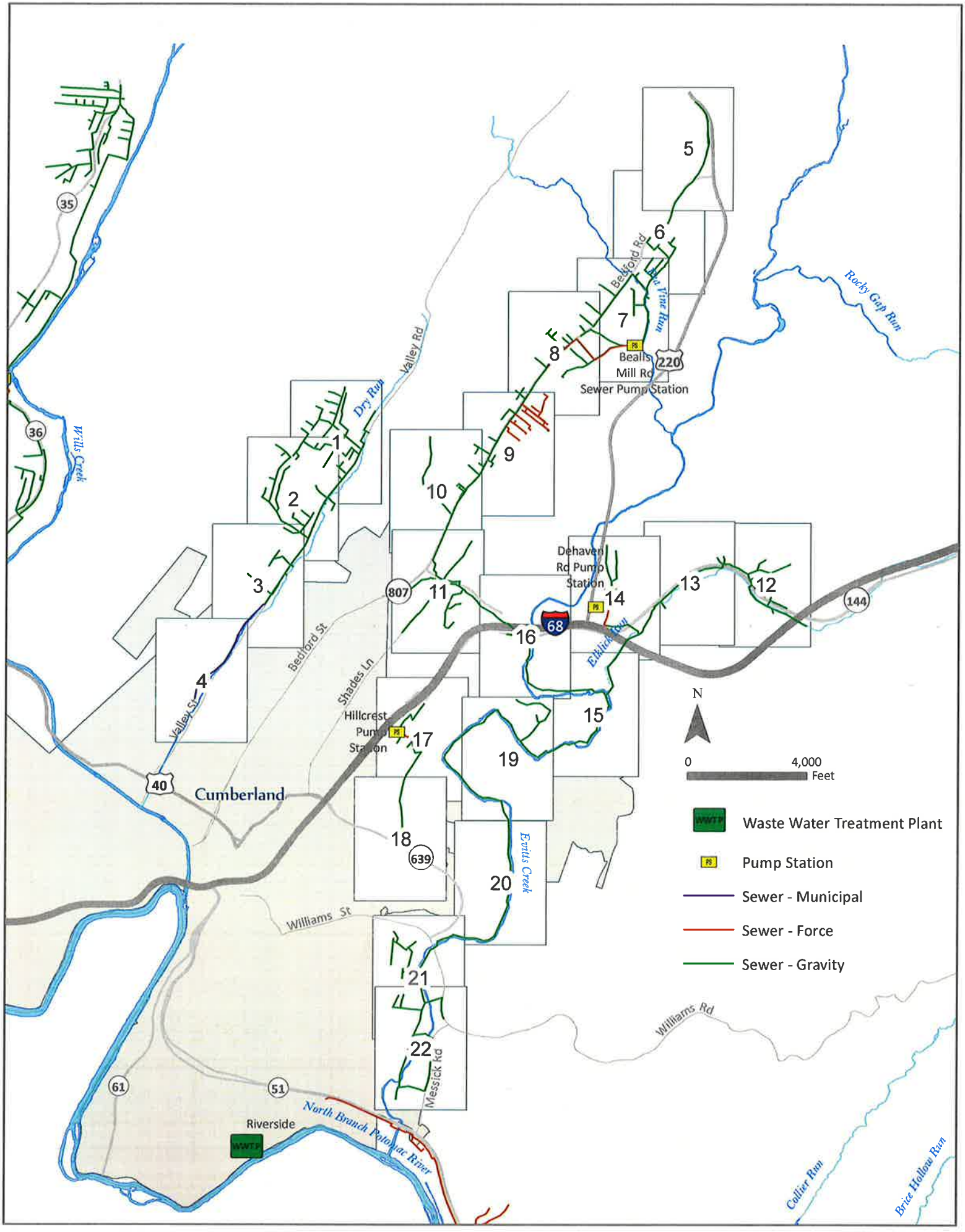

Index
0
400
Feet
Season
Winters
Fir Tree
Spruce
Cedar
Redwood
Bell
Brant
Hay
Hill
Lee
Grant
McMullen
West Main
Main
Potomac
Howard
Wood
Oakwood
Meadow
Park
Pershing
Broadway
Scenic View
Cinder
Boone
Amcelle
Lasalle
Warrior
First
Second
Third
Fourth
Fifth
Sixth
Winchester

Cresaptown

Sheet 3

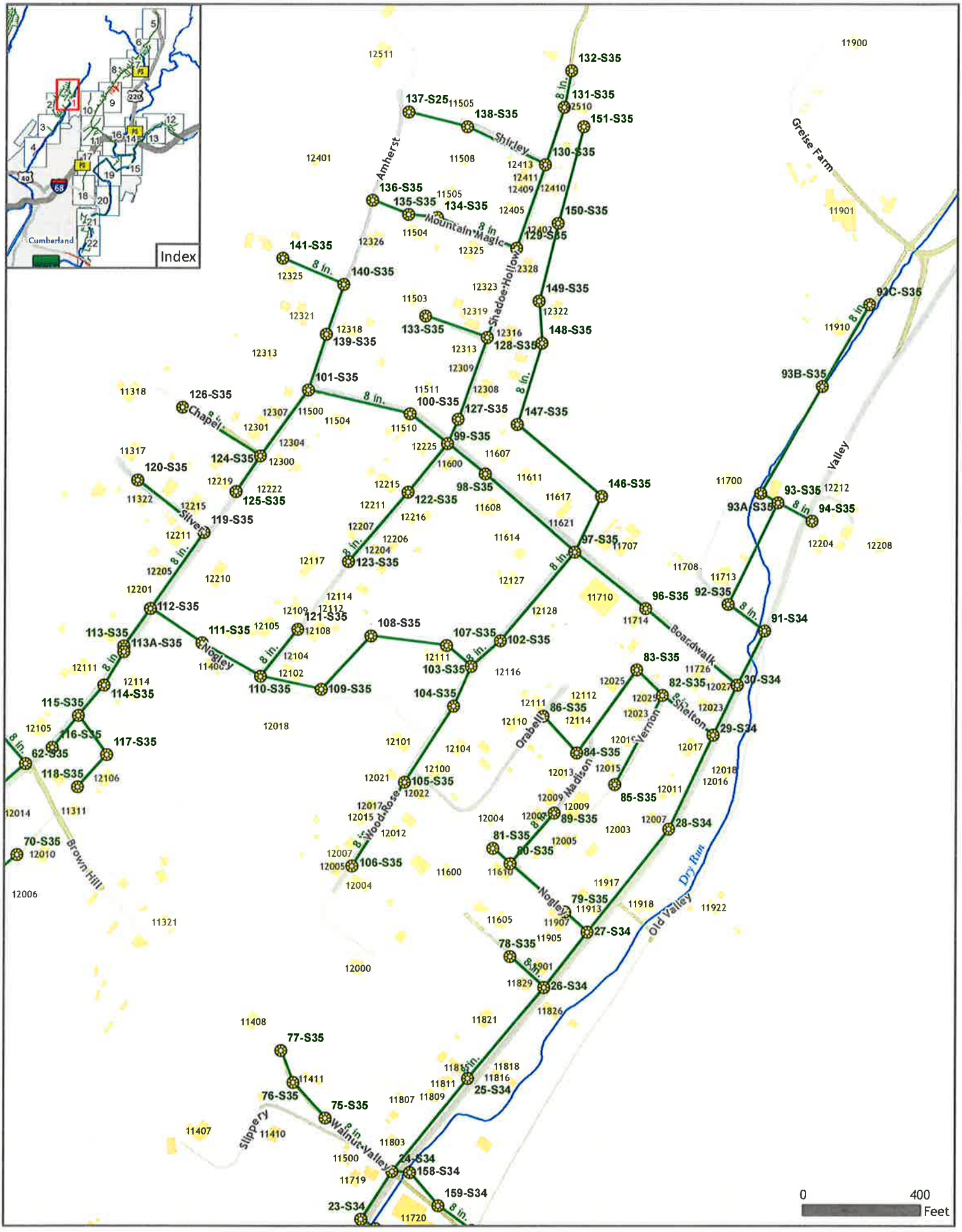


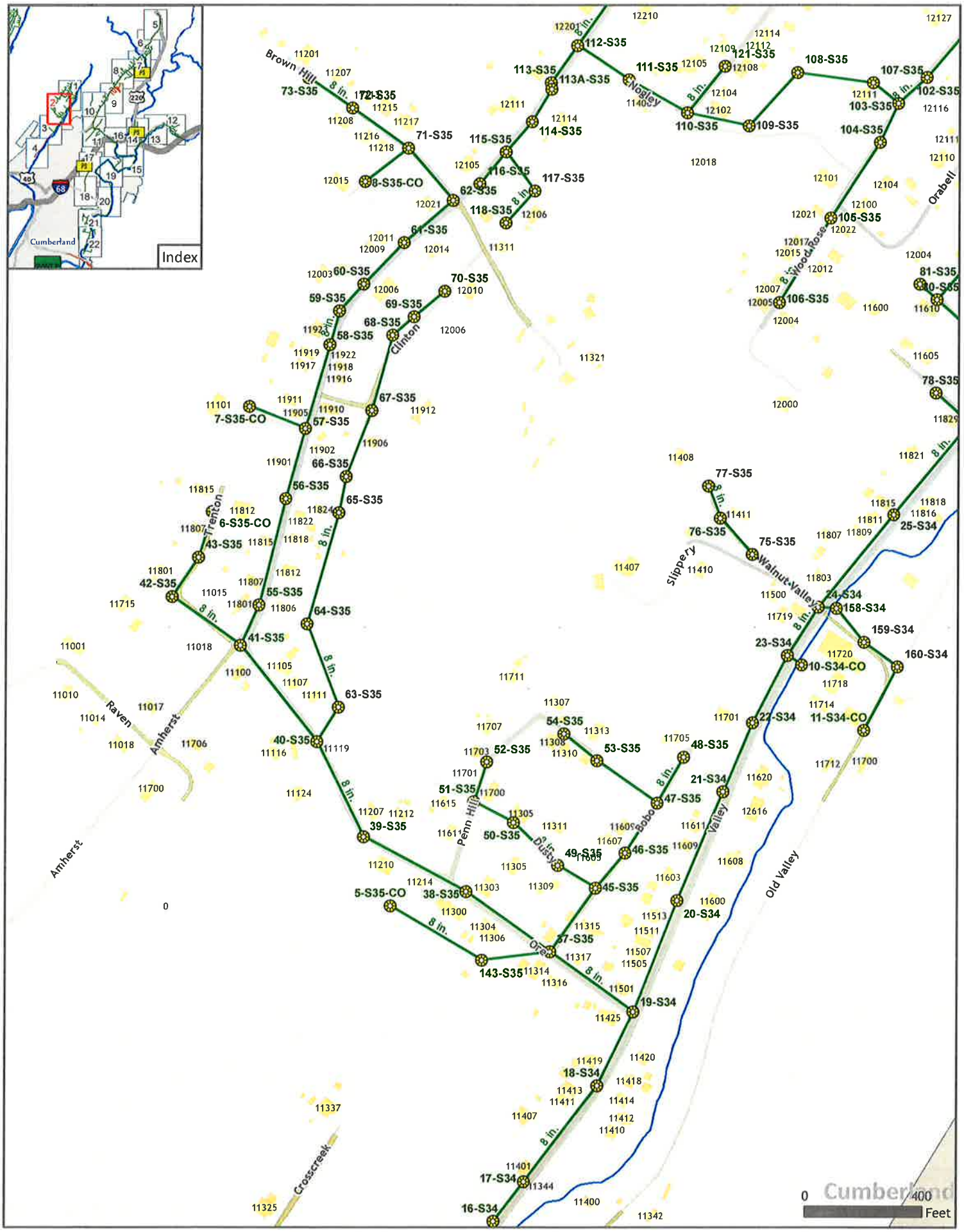
Bedford Road Index

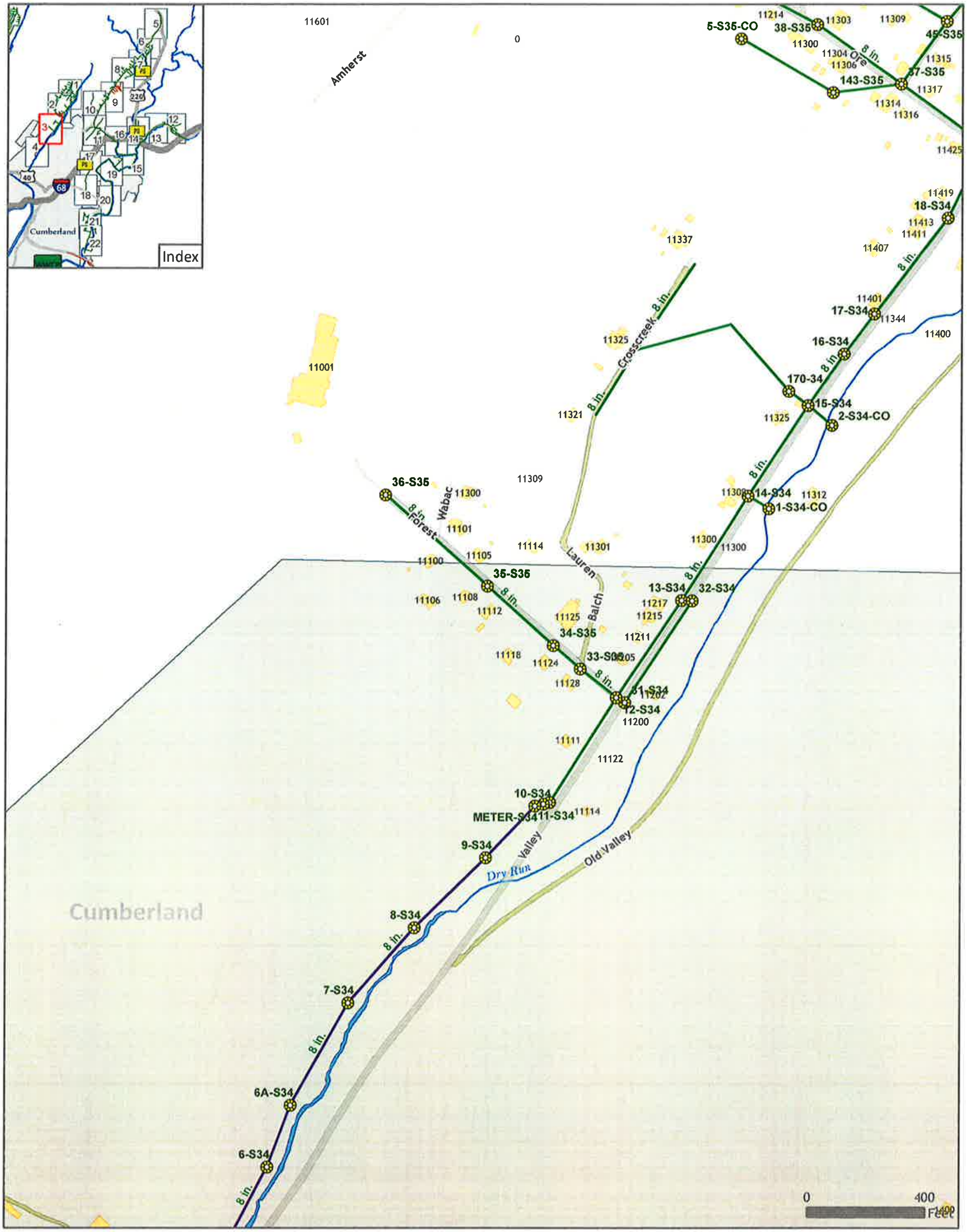


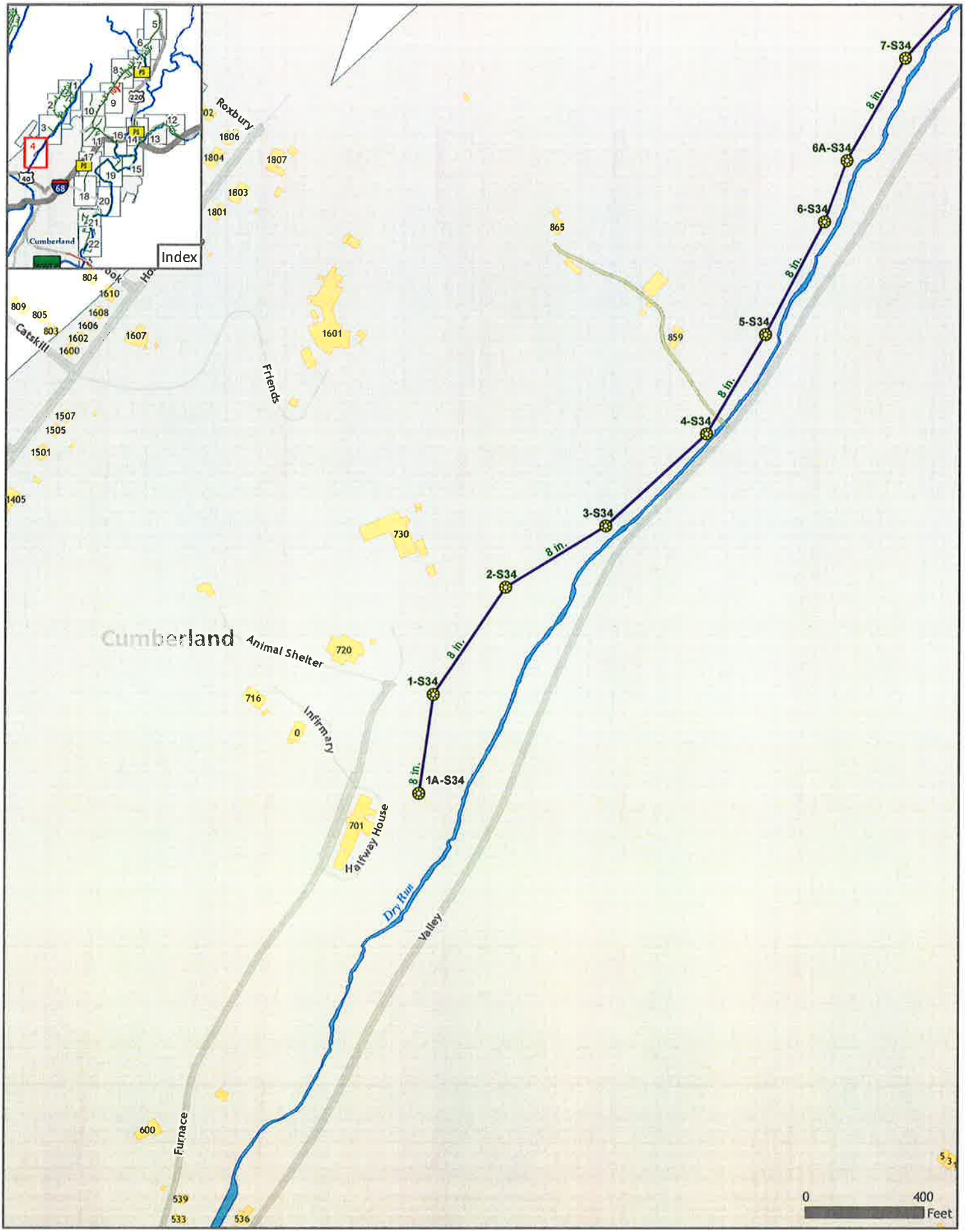
Bedford Road

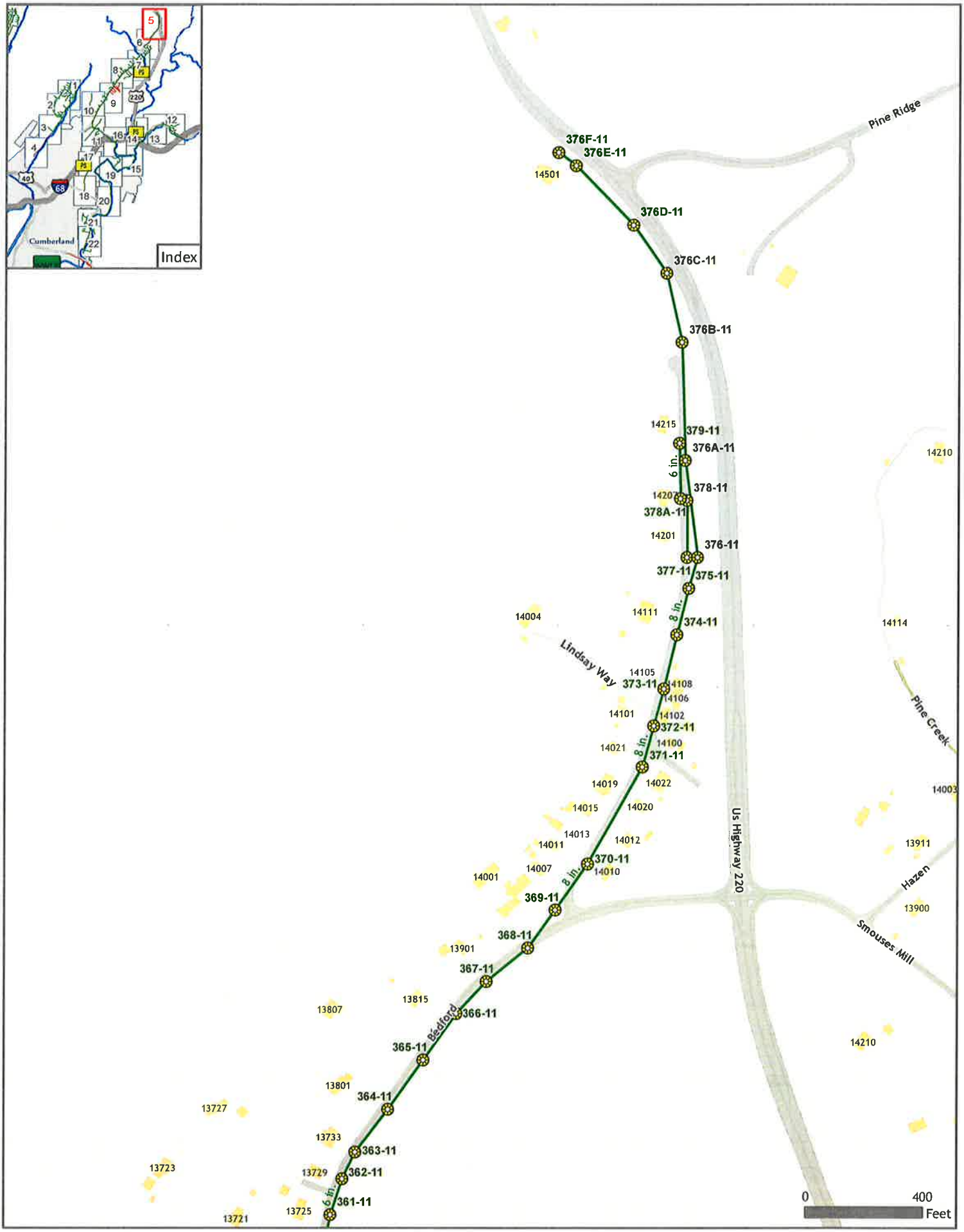
Sheet 1




Index
Cumberland
Brown Hill
Nogley
Orabell
Clinton
Trenton
Slippery
Walnut Valley
Raven
Amherst
Penn Hill
Bobo
Dusty
Old Valley
Crosscreek
0
400
Feet

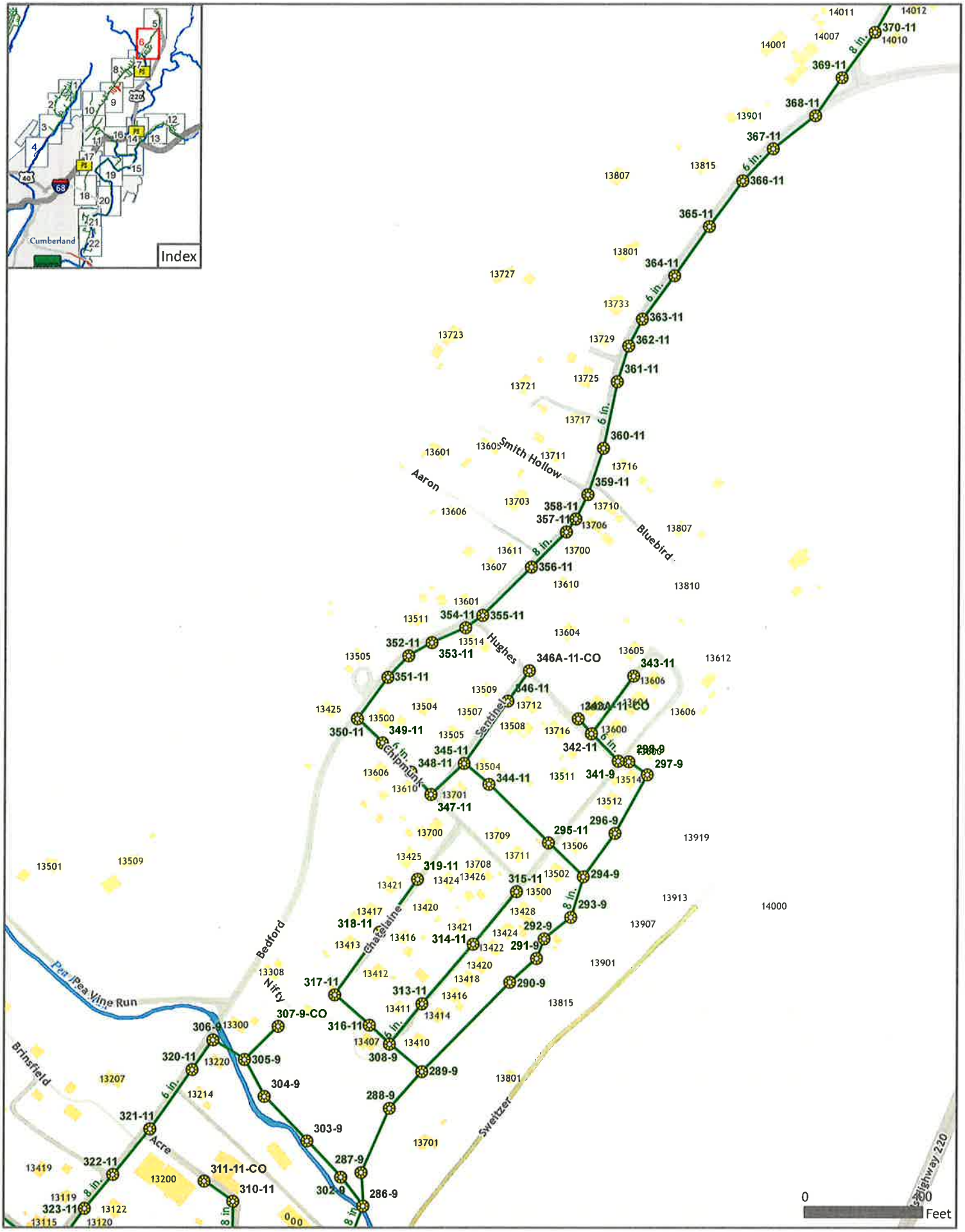

Index
Cumberland
Amherst
Ore
Crosscreek
Wabac
Forest
Lauren
Balch
Valley
Old Valley
Dry Run
5-S35-CO
38-S35
45-S35
37-S35
143-S35
18-S34
17-S34
16-S34
170-34
15-S34
2-S34-CO
14-S34
1-S34-CO
36-S35
35-S35
34-S35
33-S35
13-S34
32-S34
31-S34
12-S34
10-S34
METER-S34
11-S34
9-S34
8-S34
7-S34
6A-S34
6-S34
8 in.
0
400
Feet

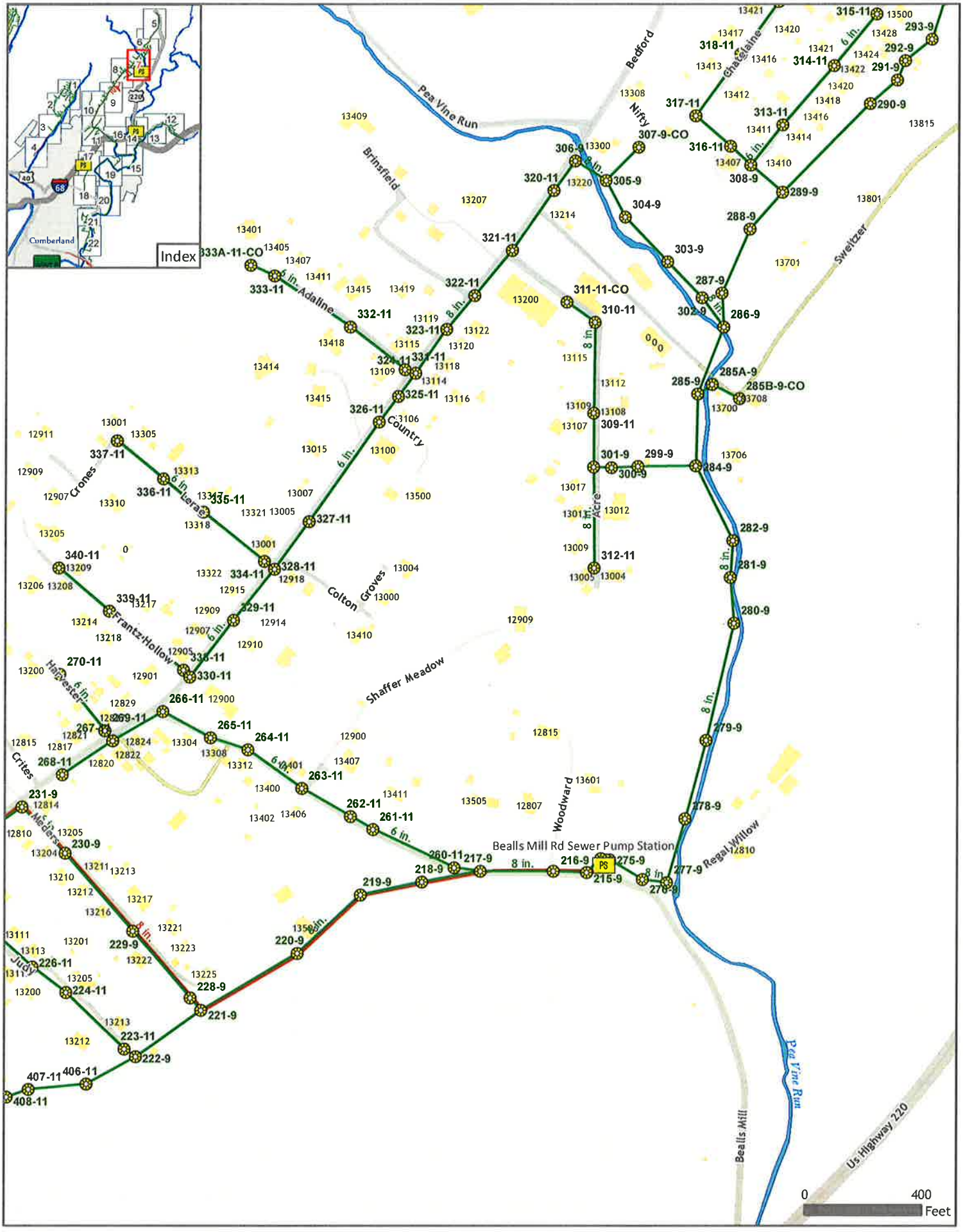

Index
Cumberland
Roxbury
Catskill
Friends
Animal Shelter
Infirmary
Halfway House
Dry Run
Valley
Furnace
7-S34
6A-S34
6-S34
5-S34
4-S34
3-S34
2-S34
1-S34
1A-S34
8 in.
0
400
Feet

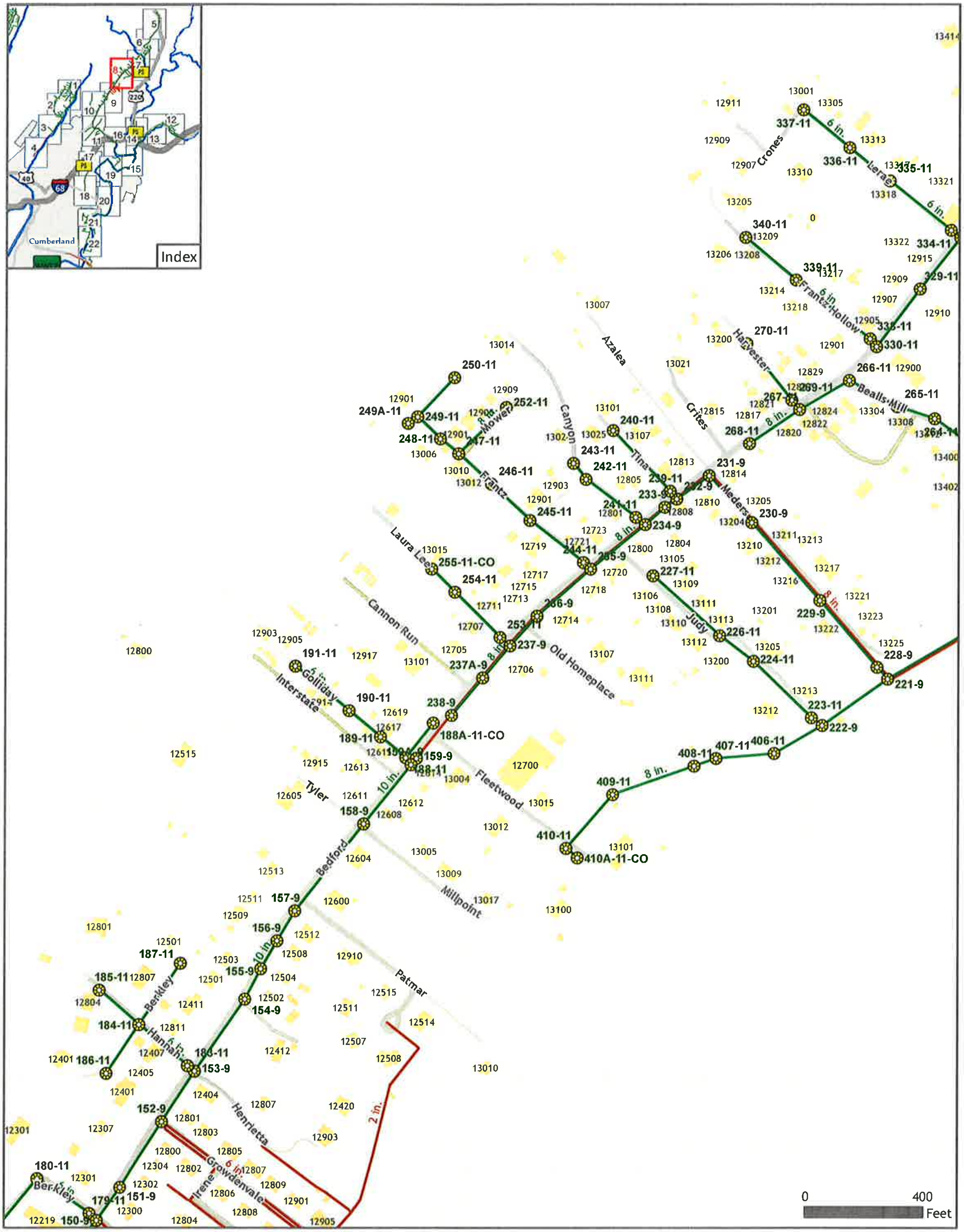

Index
Cumberland
376F-11
376E-11
14501
376D-11
376C-11
376B-11
14215
379-11
376A-11
6 in.
14210
14207
378-11
378A-11
14201
376-11
377-11
375-11
8 in.
14111
374-11
14004
14114
Lindsay Way
14105
373-11
14108
14106
14101
14102
372-11
14100
14021
8 in.
371-11
14019
14022
14003
14015
14020
14013
14012
14011
370-11
14010
14007
14001
8 in.
369-11
368-11
13901
367-11
13815
13807
366-11
Bedford
365-11
13801
364-11
13727
13733
363-11
13723
13729
362-11
6 in.
361-11
13725
13721
Pine Ridge
Pine Creek
Us Highway 220
13911
Hazen
13900
Smouses Mill
14210
0
400
Feet

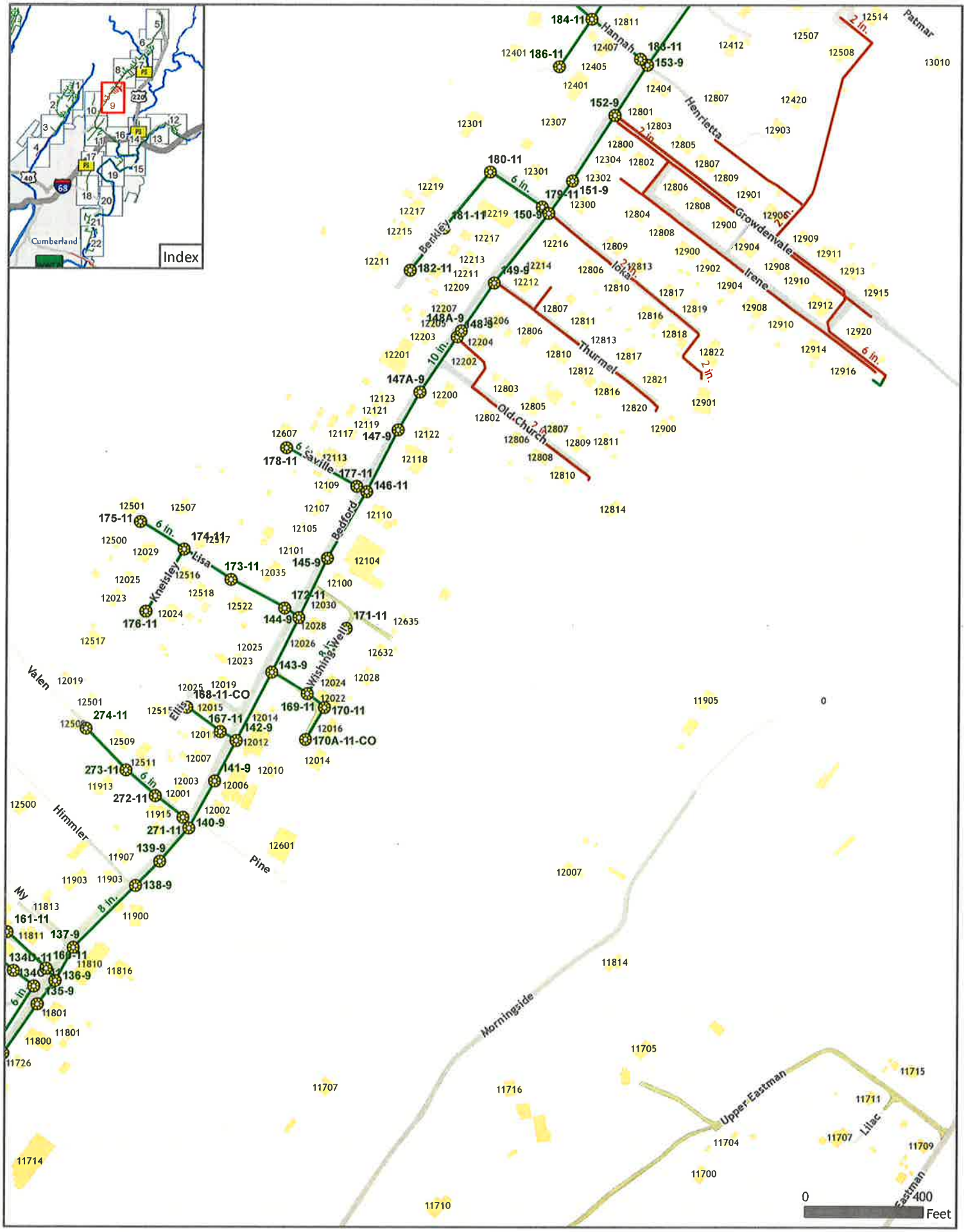
Bedford Road

Sheet 6




Index
Cumberland
Pea Vine Run
Brinsfield
Bedford
Nifty
Chatelaine
Adaline
Country
Crones
Lerae
Colton Groves
Frantz Hollow
Harvester
Shaffer Meadow
Crites
Meder
Judy
Woodward
Sweltzer
Bealls Mill Rd Sewer Pump Station
Bealls Mill
Pea Vine Run
Us Highway 220
8 in.
6 in.
PS
0
400
Feet


Index
Cumberland
Bedford
Crones
Lerae
Frantz Hollow
Harvester
Bealls Mill
Azalea
Crites
Canyon
Tina
Meders
Mower
Frantz
Laura Lee
Cannon Run
Old Homeplace
Judy
Golliday
Interstate
Fleetwood
Tyler
Millpoint
Patmar
Berkley
Hannah
Henrietta
Growdenvale
Irene
6 in.
8 in.
10 in.
2 in.
0 400 Feet


Index
Cumberland
184-11
186-11
188-11
153-9
152-9
180-11
179-11
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150-9
182-11
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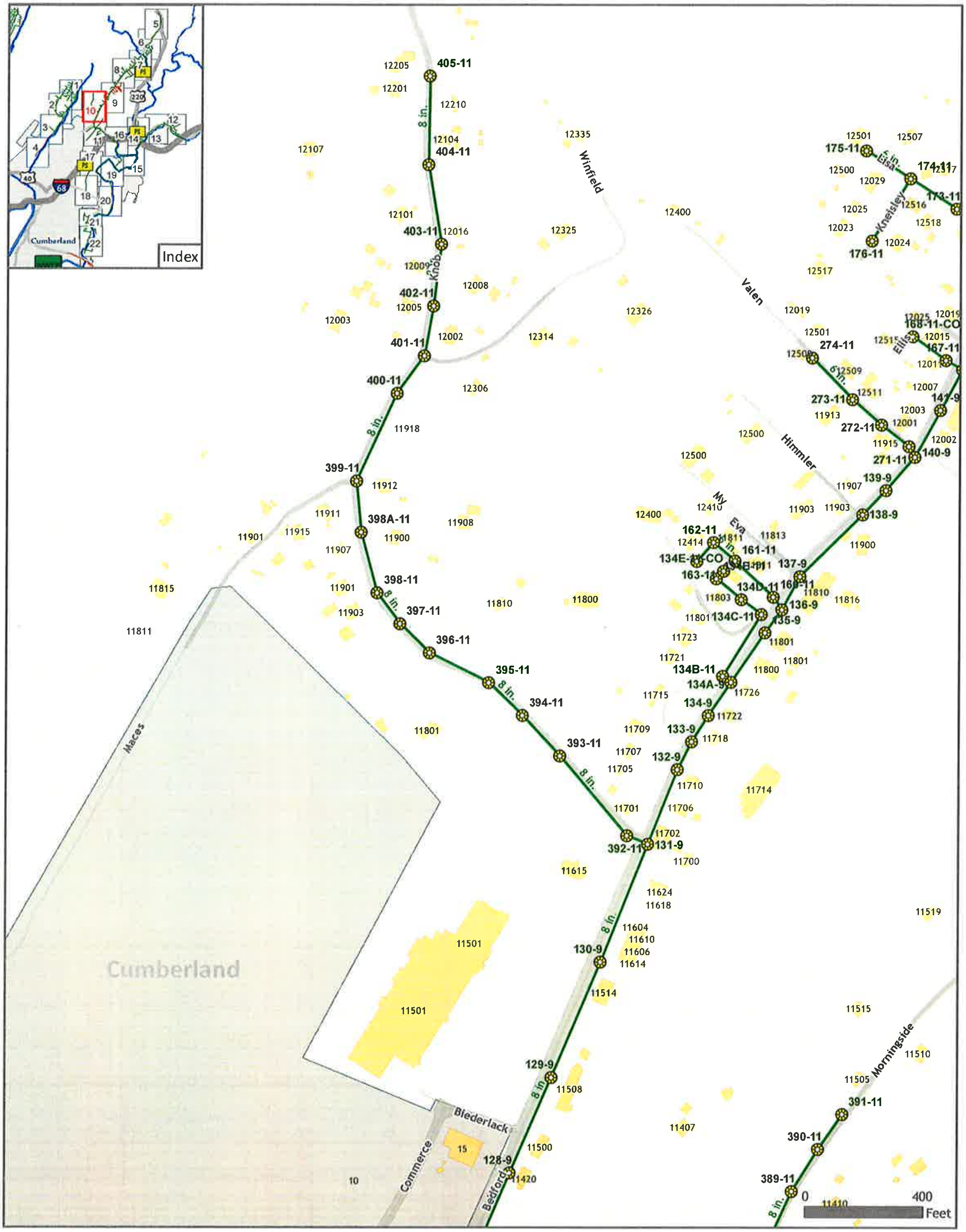
148A-9
148-9
147A-9
147-9
178-11
177-11
146-11
175-11
174-11
173-11
145-9
172-11
144-9
171-11
176-11
143-9
168-11-CO
169-11
170-11
274-11
167-11
142-9
170A-11-CO
273-11
141-9
272-11
140-9
271-11
139-9
138-9
161-11
137-9
136-9
135-9
Hannah
Henrietta
Patmar
Berkley
Growdenvale
Irene
Thurmel
Old Church
Bedford
Saville
Lisa
Knetsley
Wishing Well
Ellis
Himmler
Pine
Morningside
Upper Eastman
Lilac
Eastman
6 in.
8 in.
10 in.
2 in.
0
400
Feet


Index
Cumberland
405-11
404-11
403-11
402-11
401-11
400-11
399-11
398A-11
398-11
397-11
396-11
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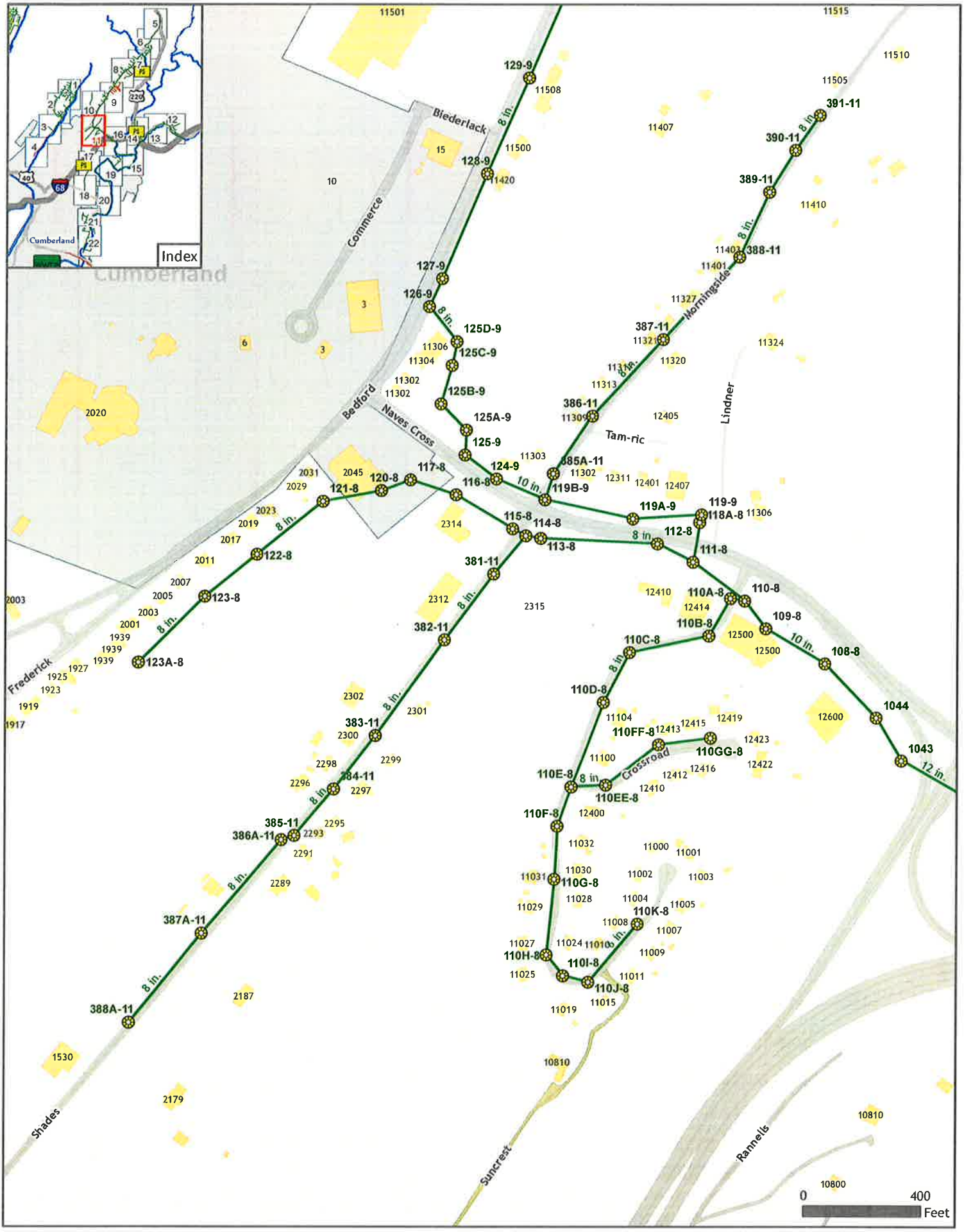
394-11
393-11
392-11
131-9
130-9
129-9
128-9
132-9
133-9
134-9
134A-9
134B-11
134C-11
134D-11
134E-11-CO
135-9
136-9
137-9
138-9
139-9
140-9
141-9
161-11
162-11
163-11
167-11
168-11-CO
173-11
174-11
175-11
176-11
271-11
272-11
273-11
274-11
389-11
390-11
391-11
8 in.
6 in.
Winfield
Knob
Valen
Himmler
My
Eva
Ellis
Lisa
Knelsley
Maces
Morningside
Bledderlack
Commerce
Bedford
Cumberland
12205
12201
12210
12104
12107
12101
12016
12009
12008
12005
12003
12002
12335
12325
12314
12306
12326
12400
12500
12501
12507
12029
12025
12023
12024
12516
12518
12517
12019
12015
12011
12509
12511
12007
12003
12001
12002
11913
11915
11907
11903
11900
11918
11912
11911
11915
11901
11907
11900
11908
11901
11903
11815
11811
11810
11800
11813
11816
11803
11801
11723
11721
11726
11722
11718
11715
11709
11707
11705
11701
11710
11706
11702
11700
11714
11615
11624
11618
11604
11610
11606
11614
11514
11501
11508
11500
11420
11407
11519
11515
11510
11505
11410
15
10
0
400
Feet


Index
Cumberland
Commerce
Biederlack
Bedford
Naves Cross
Tam-ric
Morningside
Lindner
Frederick
Crossroad
Shades
Suncrest
Rannells
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128-9
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126-9
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125C-9
125B-9
125A-9
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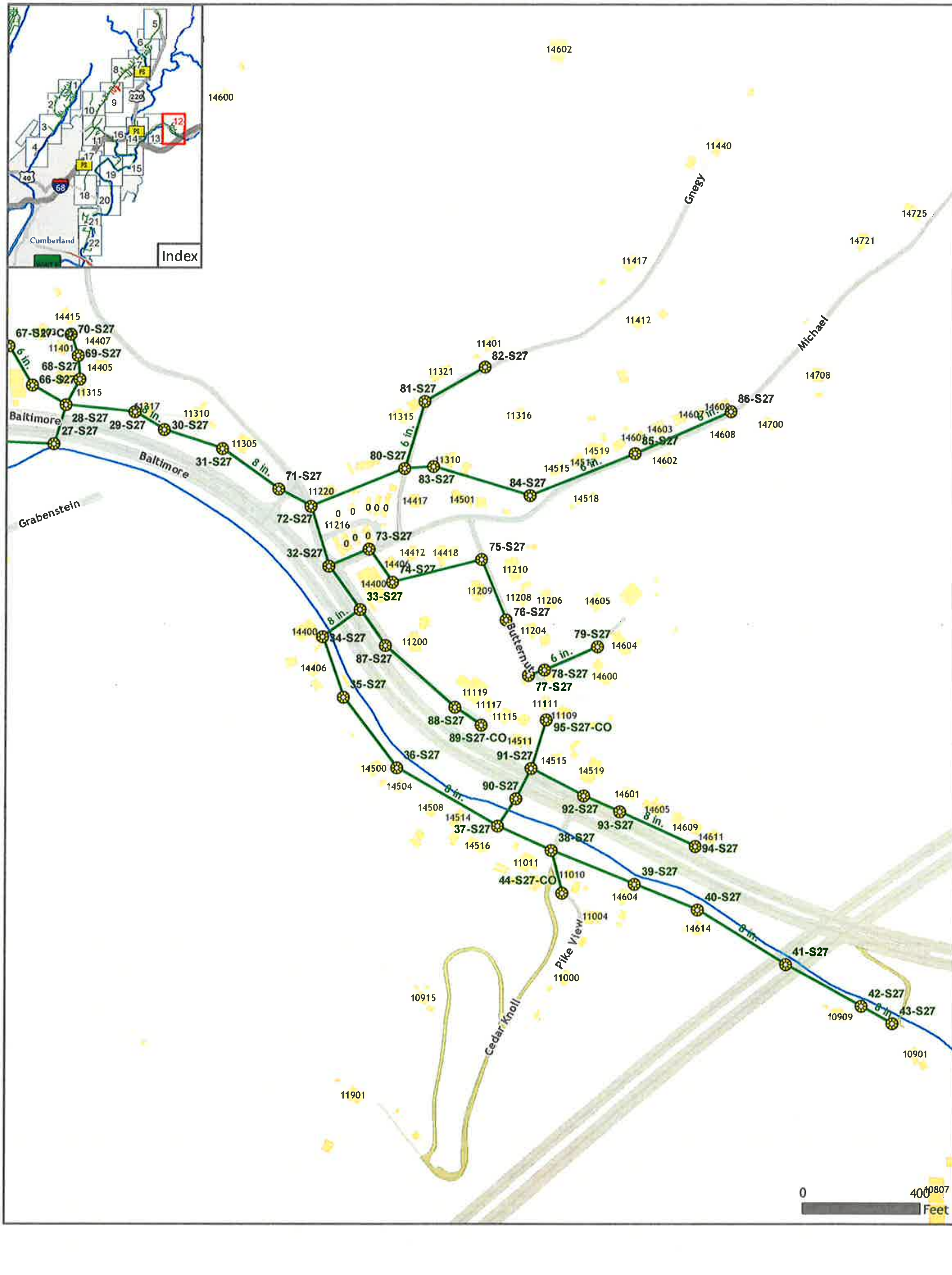
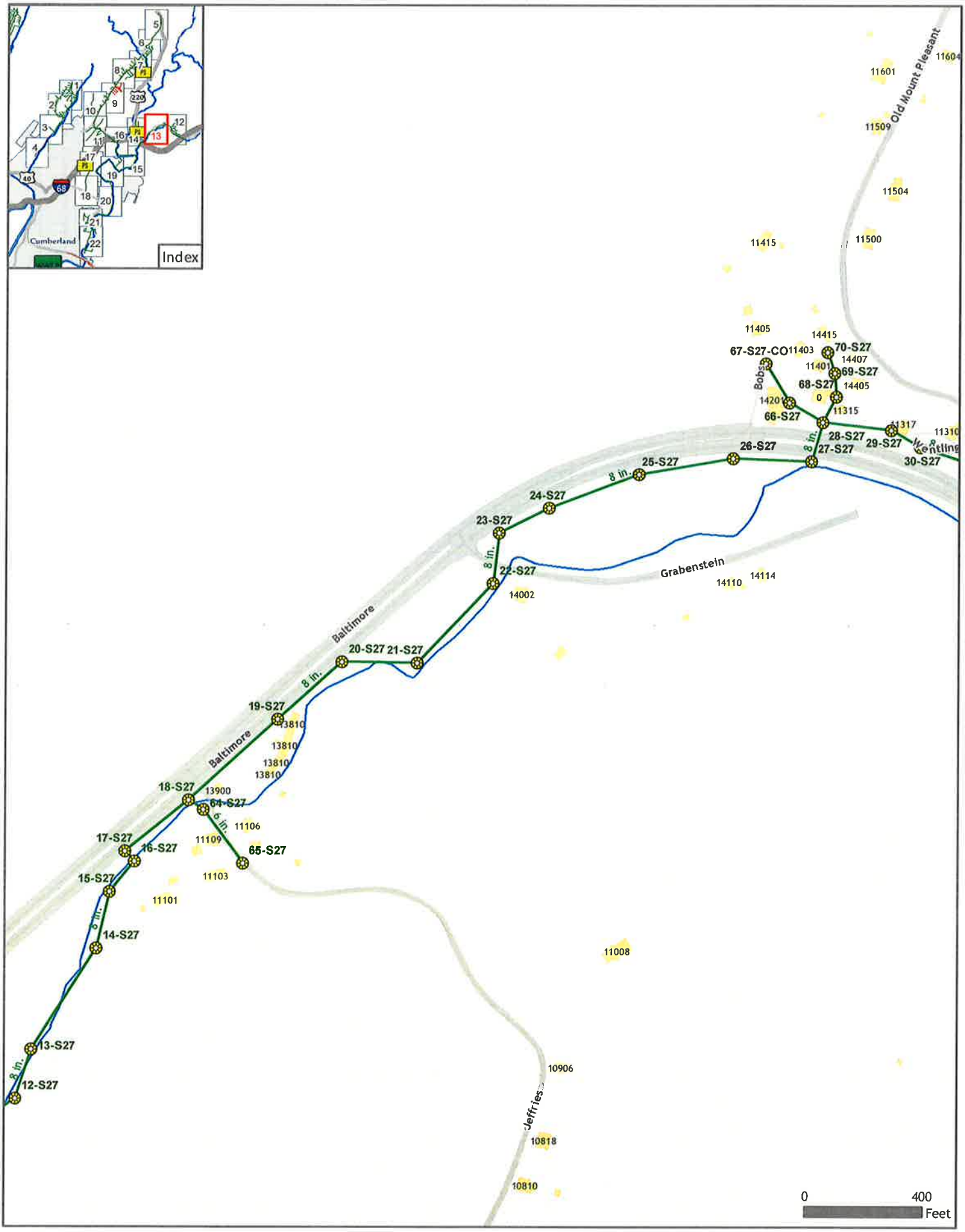
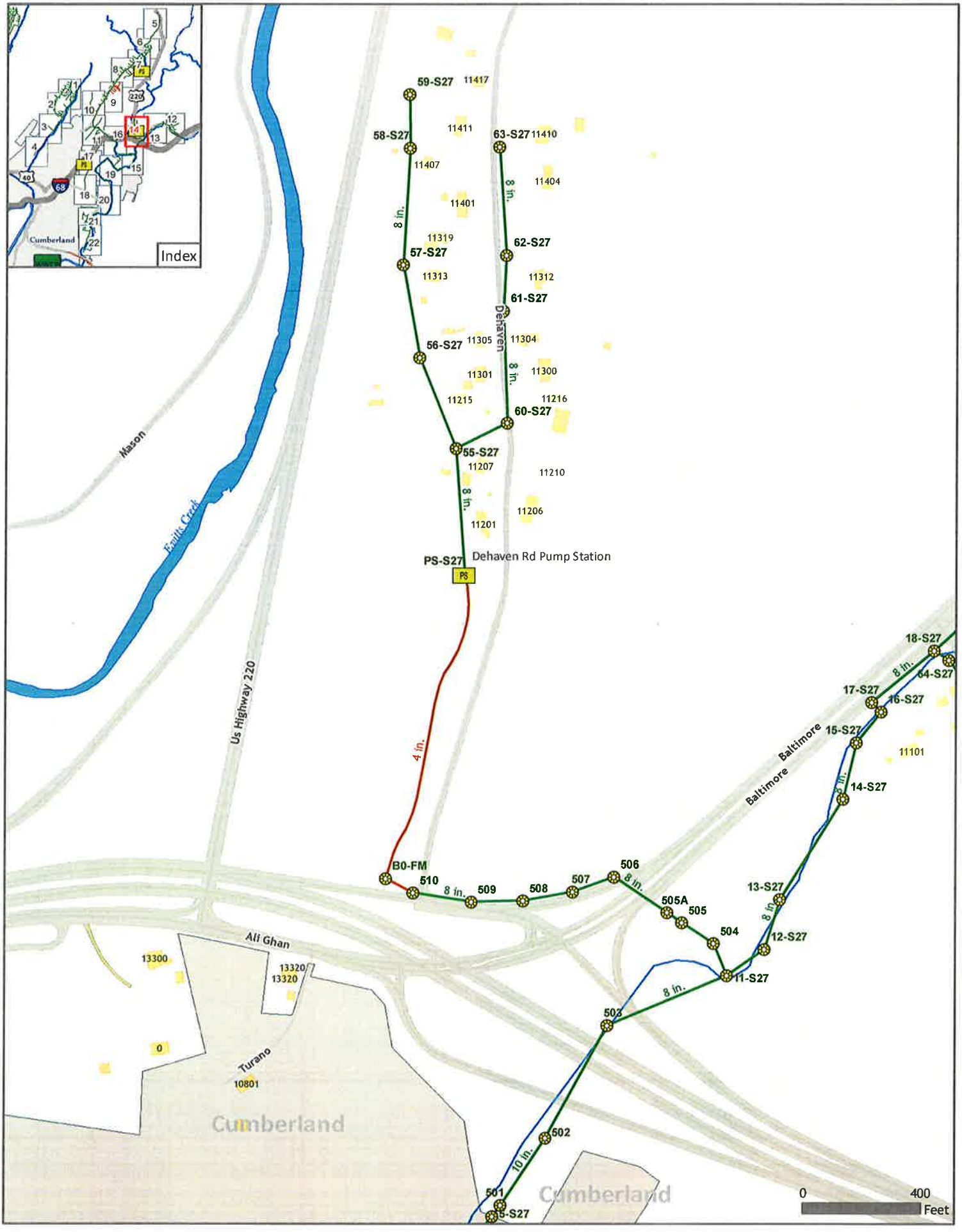
123A-8
122-8
121-8
120-8
117-8
116-8
115-8
114-8
113-8
112-8
111-8
110-8
109-8
108-8
1044
1043
391-11
390-11
389-11
388-11
387-11
386-11
385A-11
119B-9
119A-9
119-9
118A-8
110A-8
110B-8
110C-8
110D-8
110E-8
110F-8
110G-8
110H-8
110I-8
110J-8
110K-8
110EE-8
110FF-8
110GG-8
381-11
382-11
383-11
384-11
385-11
386A-11
387A-11
388A-11
10 in.
12 in.
8 in.
0
400
Feet


Index
Cumberland
Baltimore
Grabenstein
Gnegy
Michael
Butternut
Pike View
Cedar Knoll
67-S27
70-S27
69-S27
68-S27
66-S27
28-S27
27-S27
29-S27
30-S27
31-S27
71-S27
72-S27
32-S27
33-S27
34-S27
35-S27
36-S27
37-S27
38-S27
39-S27
40-S27
41-S27
42-S27
43-S27
44-S27-CO
73-S27
74-S27
75-S27
76-S27
77-S27
78-S27
79-S27
80-S27
81-S27
82-S27
83-S27
84-S27
85-S27
86-S27
87-S27
88-S27
89-S27-CO
90-S27
91-S27
92-S27
93-S27
94-S27
95-S27-CO
6 in.
8 in.
0 400 Feet


Index
Cumberland
Old Mount Pleasant
Baltimore
Grabenstein
Jeffries
67-S27-CO
70-S27
69-S27
68-S27
66-S27
28-S27
29-S27
30-S27
27-S27
26-S27
25-S27
24-S27
23-S27
22-S27
21-S27
20-S27
19-S27
18-S27
64-S27
65-S27
17-S27
16-S27
15-S27
14-S27
13-S27
12-S27
8 in.
6 in.
11604
11601
11509
11504
11415
11500
11405
14415
11403
14407
11401
14405
11315
11317
11310
14002
14110
14114
13810
13900
11106
11109
11103
11101
11008
10906
10818
10810
0
400
Feet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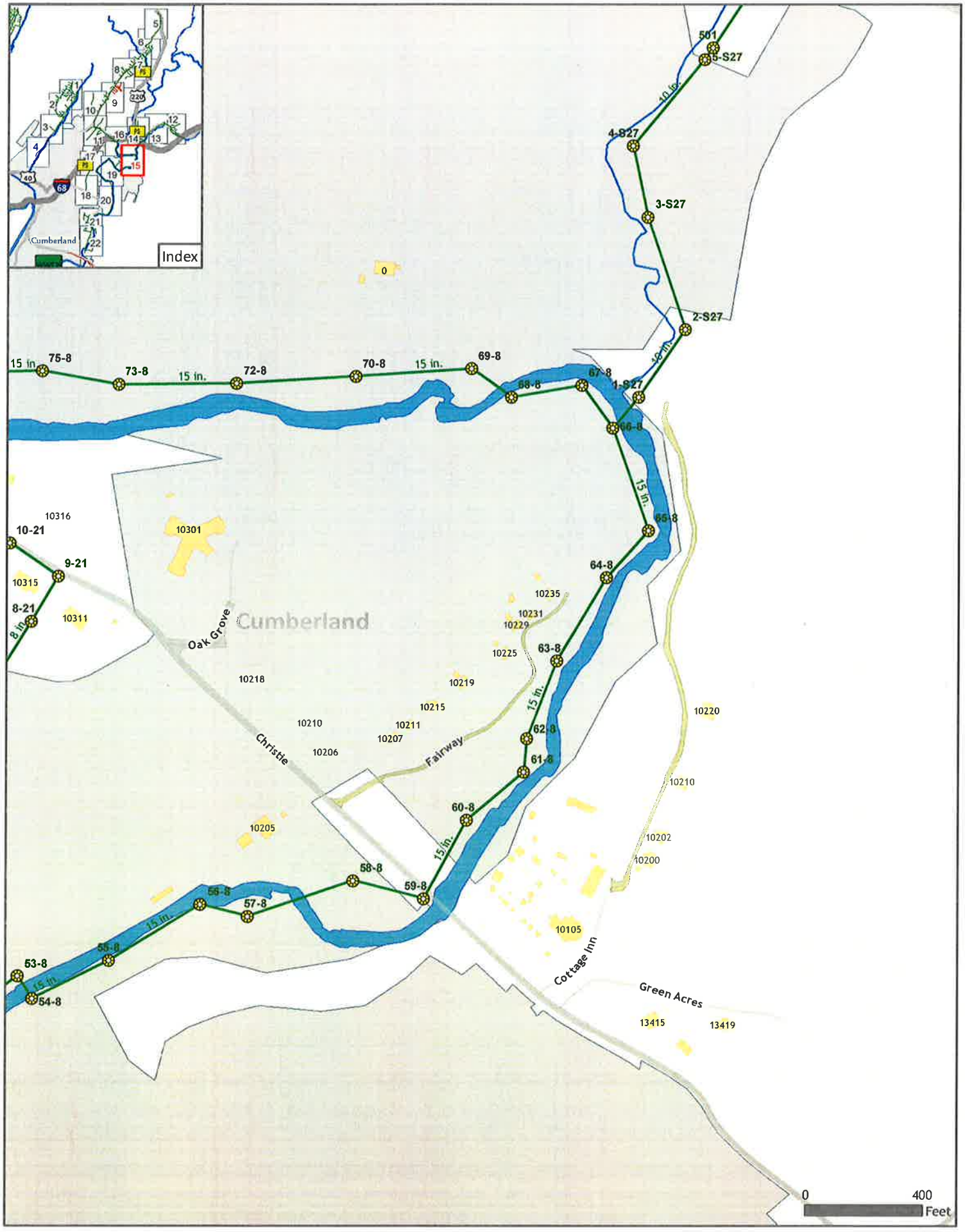
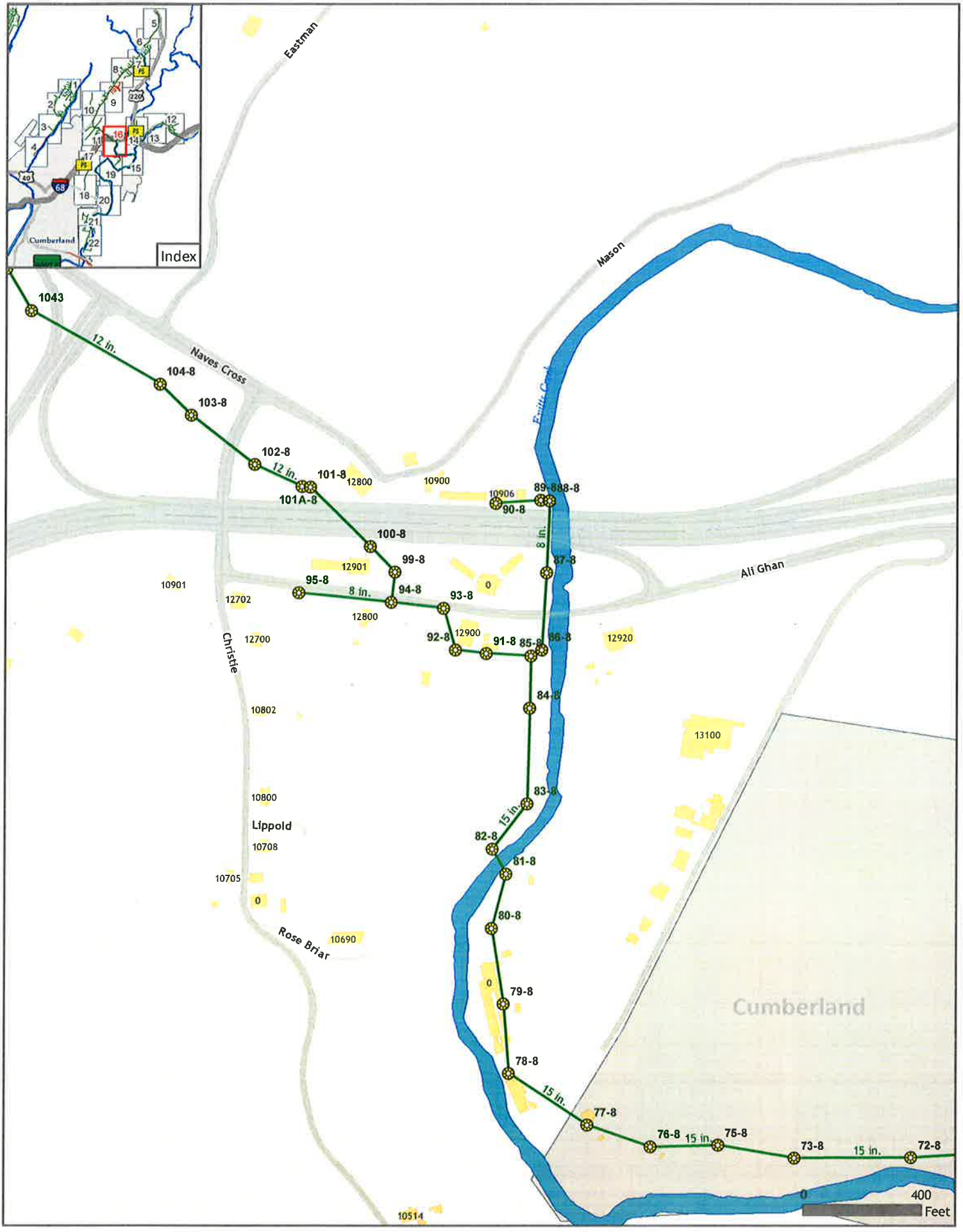
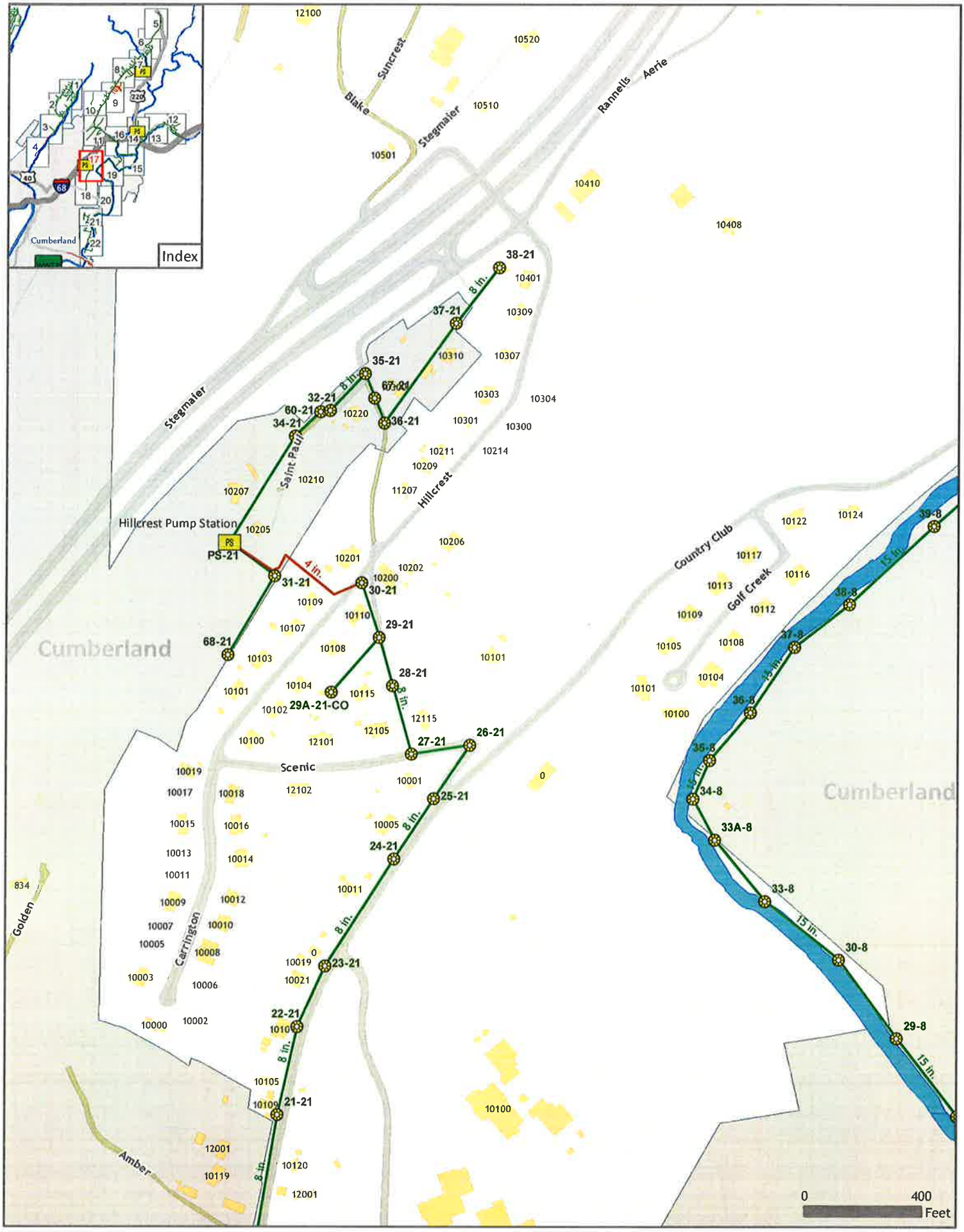
59-S27
11417
58-S27
11411
63-S27
11410
11407
11404
11401
8 in.
11319
57-S27
62-S27
11313
11312
61-S27
Dehaven
56-S27
11305
11304
11301
11300
11215
11216
60-S27
55-S27
11207
11210
11206
11201
PS-S27
Dehaven Rd Pump Station
4 in.
Mason
Emits Creek
Us Highway 220
B0-FM
510
509
508
507
506
505A
505
504
503
502
501
5-S27
18-S27
64-S27
17-S27
16-S27
15-S27
14-S27
13-S27
12-S27
11-S27
Baltimore
11101
Ali Ghan
13300
13320
13320
0
Turano
10801
Cumberland
10 in.
0
400
Feet


Index
Cumberland
0
1-S27
2-S27
3-S27
4-S27
5-S27
501
40 in.
40 in.
15 in
75-8
73-8
15 in.
72-8
70-8
15 in.
69-8
68-8
67-8
66-8
15 in.
65-8
64-8
63-8
15 in.
62-8
61-8
60-8
15 in.
59-8
58-8
56-8
57-8
15 in.
55-8
53-8
15 in.
54-8
10-21
9-21
8-21
8 in.
10316
10315
10311
10301
10218
10219
10215
10210
10211
10207
10206
10205
10235
10231
10229
10225
10220
10210
10202
10200
10105
13415
13419
Oak Grove
Christie
Fairway
Cottage Inn
Green Acres
Cumberland
0
400
Feet


Index
Eastman
Mason
Naves Cross
Ali Ghan
Christie
Rose Briar
Lippold
Cumberland
1043
12 in.
104-8
103-8
102-8
12 in.
101-8
101A-8
12800
10900
10906
89-8
88-8
90-8
8 in.
100-8
99-8
12901
87-8
95-8
8 in.
94-8
93-8
0
10901
12702
12800
92-8
12900
91-8
85-8
86-8
12920
12700
84-8
10802
13100
83-8
15 in.
10800
82-8
10708
81-8
10705
0
80-8
10690
0
79-8
78-8
15 in.
77-8
76-8
15 in.
75-8
73-8
15 in.
72-8
10514
0
400
Feet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Cumberland
Hillcrest Pump Station
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35-21
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60-21
34-21
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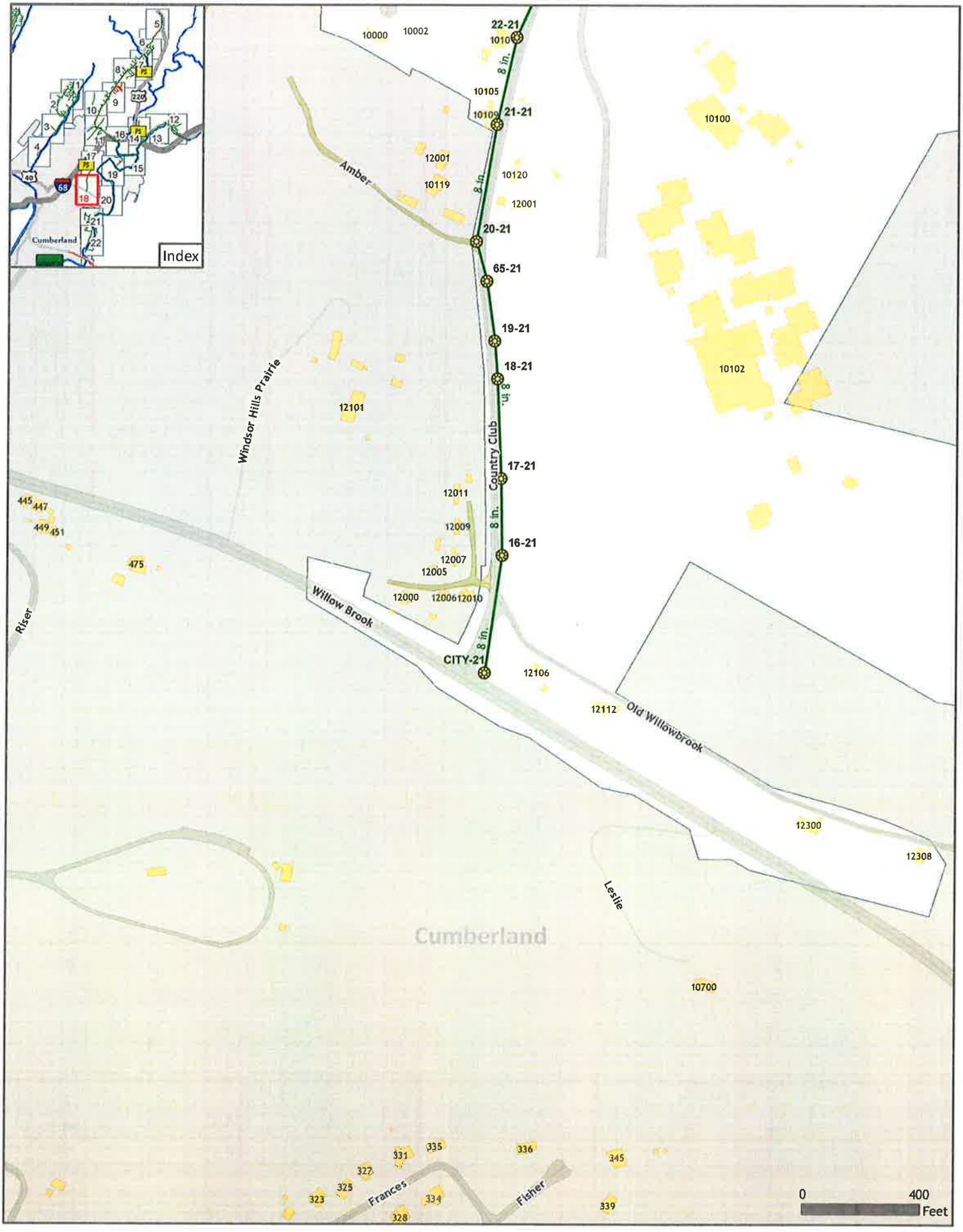
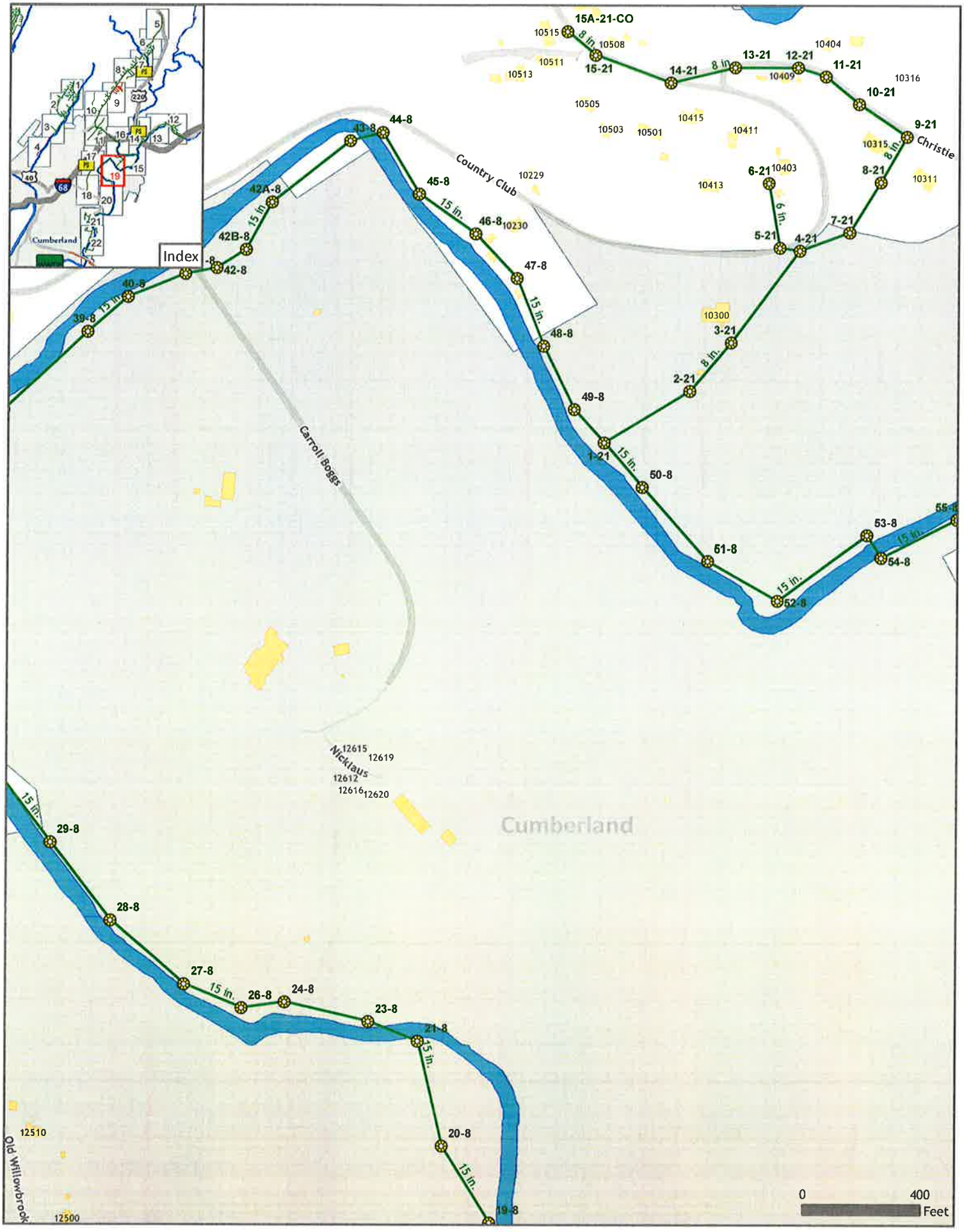
68-21
8 in.
4 in.
Stegmaier
Saint Paul
Hillcrest
Blake
Suncrest
Rannells
Aerie
Scenic
Carrington
Golden
Amber
Country Club
Golf Creek
39-8
38-8
37-8
36-8
35-8
34-8
33A-8
33-8
30-8
29-8
15 in.
0
400
Feet


Index
22-21
21-21
20-21
65-21
19-21
18-21
17-21
16-21
CITY-21
8 in.
Amber
Windsor Hills Prairie
Country Club
Willow Brook
Old Willowbrook
Riser
Leslie
Frances
Fisher
Cumberland
10000
10002
10010
10105
10109
10100
12001
10119
10120
10102
12101
12011
12009
12007
12005
12000
12006
12010
12106
12112
12300
12308
10700
445
447
449
451
475
331
335
336
345
327
325
323
334
328
339
0
400
Feet


Index
Cumberland
15A-21-CO
15-21
14-21
13-21
12-21
11-21
10-21
9-21
Christie
8-21
7-21
6-21
5-21
4-21
3-21
2-21
1-21
10515
10508
10511
10513
10404
10409
10316
10505
10415
10503
10501
10411
10315
10403
10413
10311
10229
10230
10300
Country Club
Carroll Boggs
44-8
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51-8
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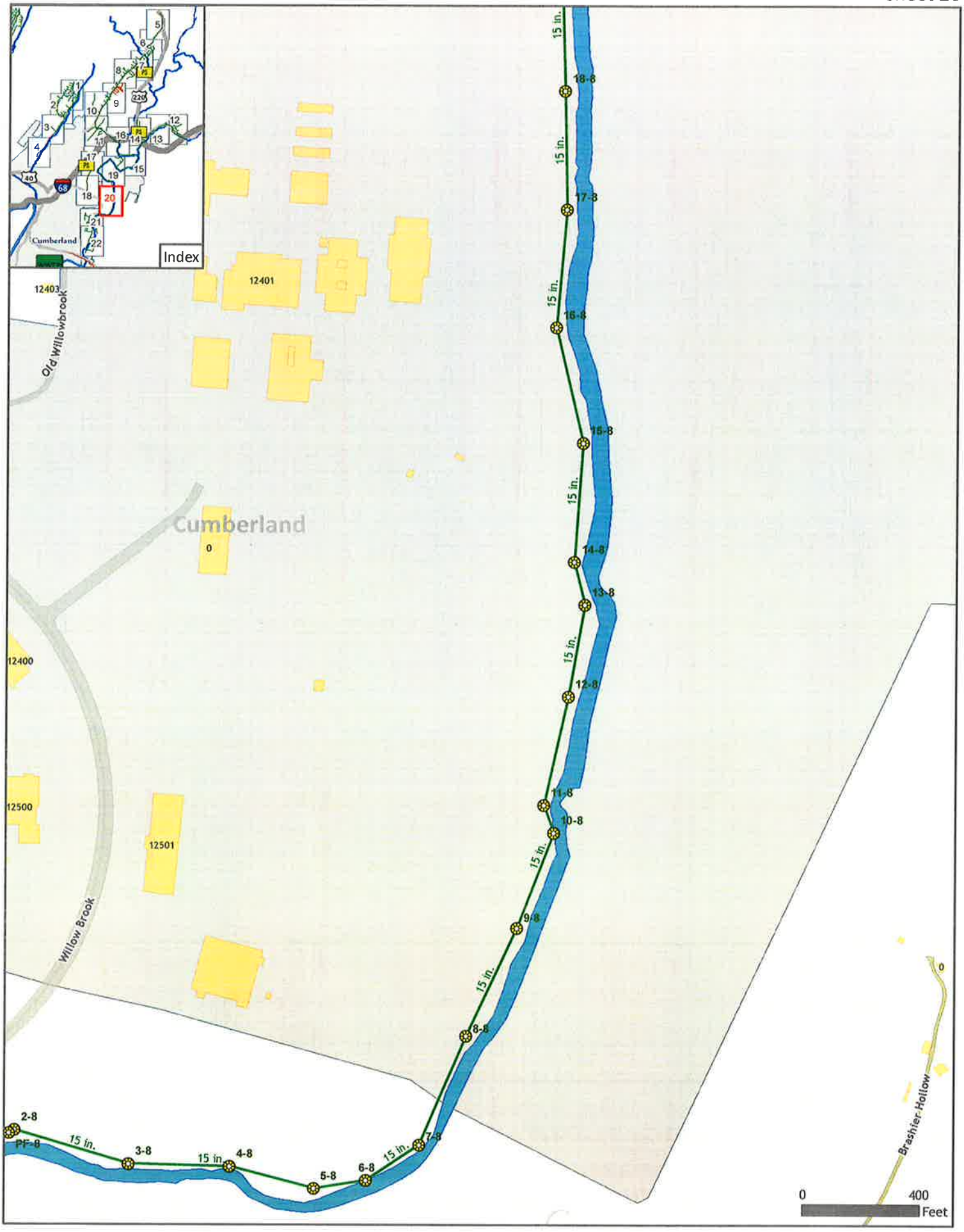
53-8
54-8
42A-8
42B-8
42-8
40-8
39-8
15 in.
8 in.
6 in.
29-8
28-8
27-8
26-8
24-8
23-8
21-8
20-8
19-8
12615
12619
Nicklaus
12612
12616
12620
Cumberland
12510
12500
Old Willowbrook
0
400
Feet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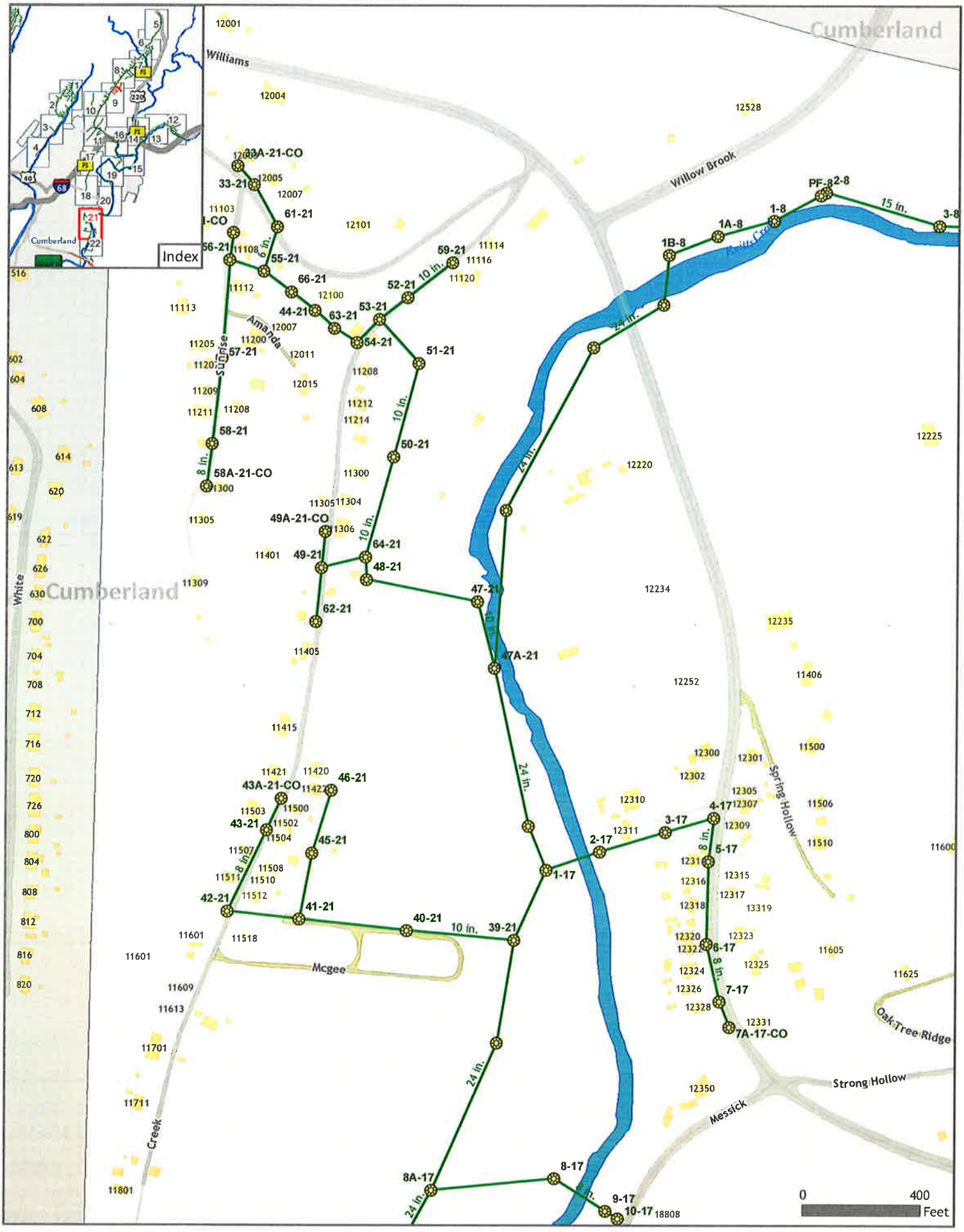
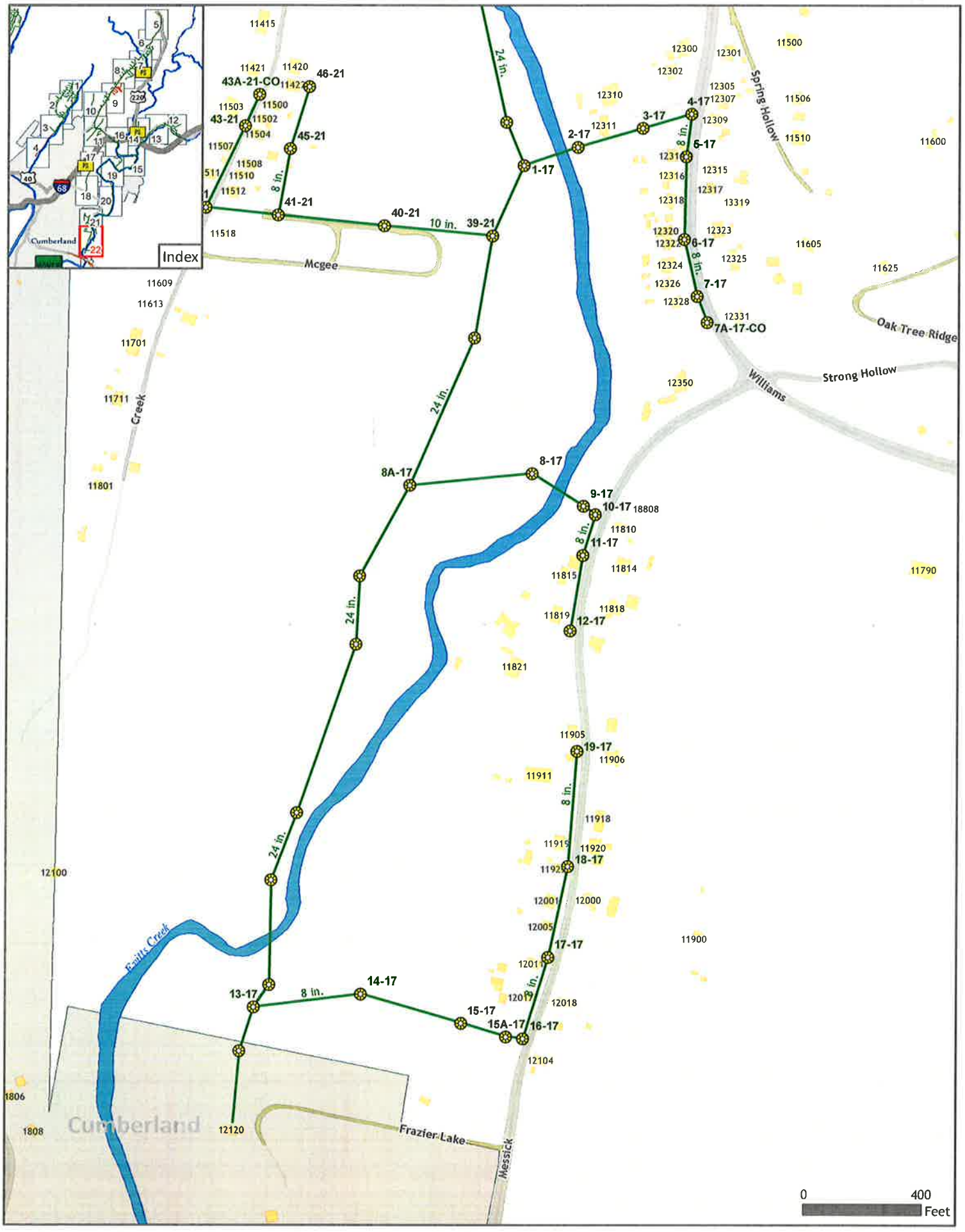
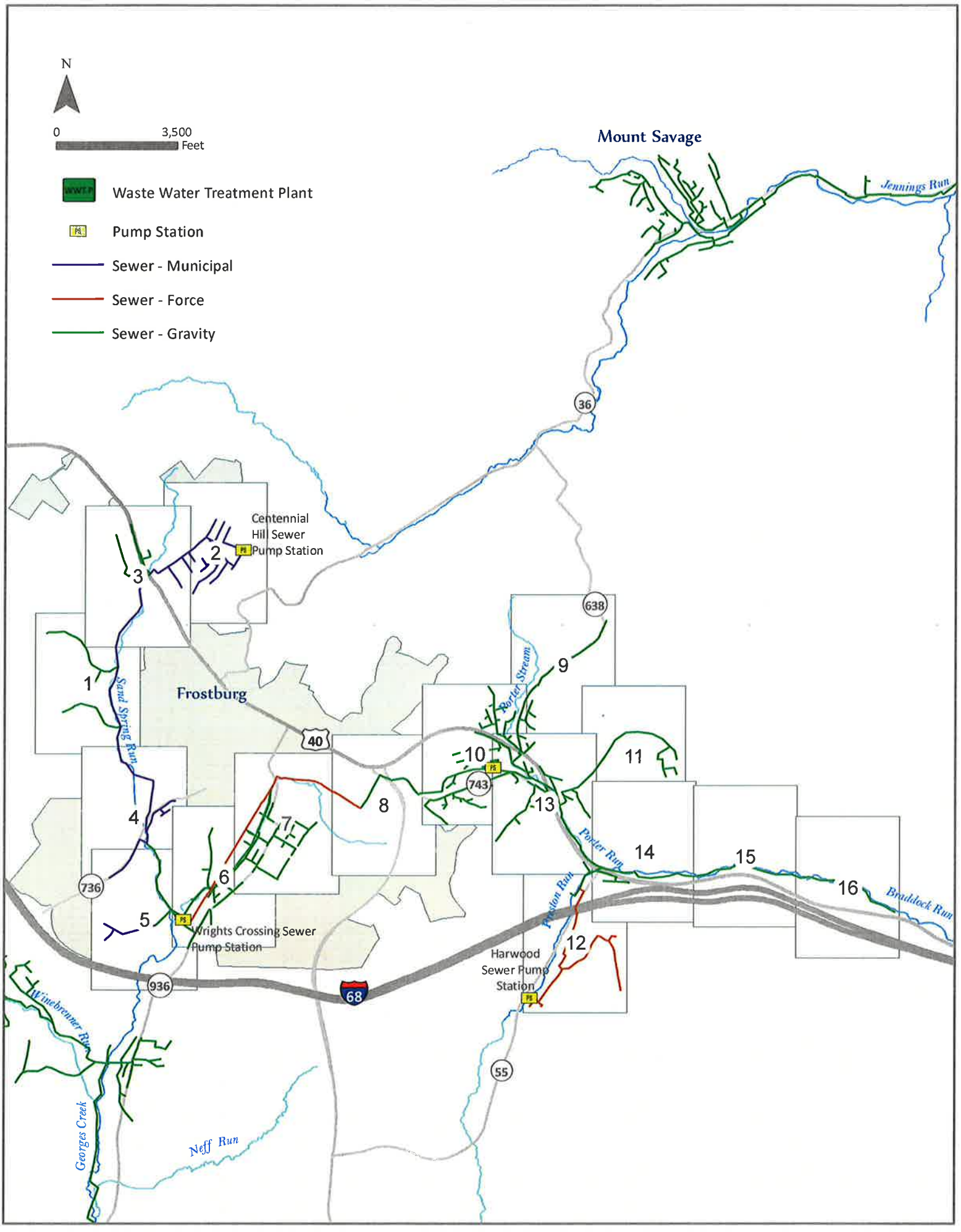
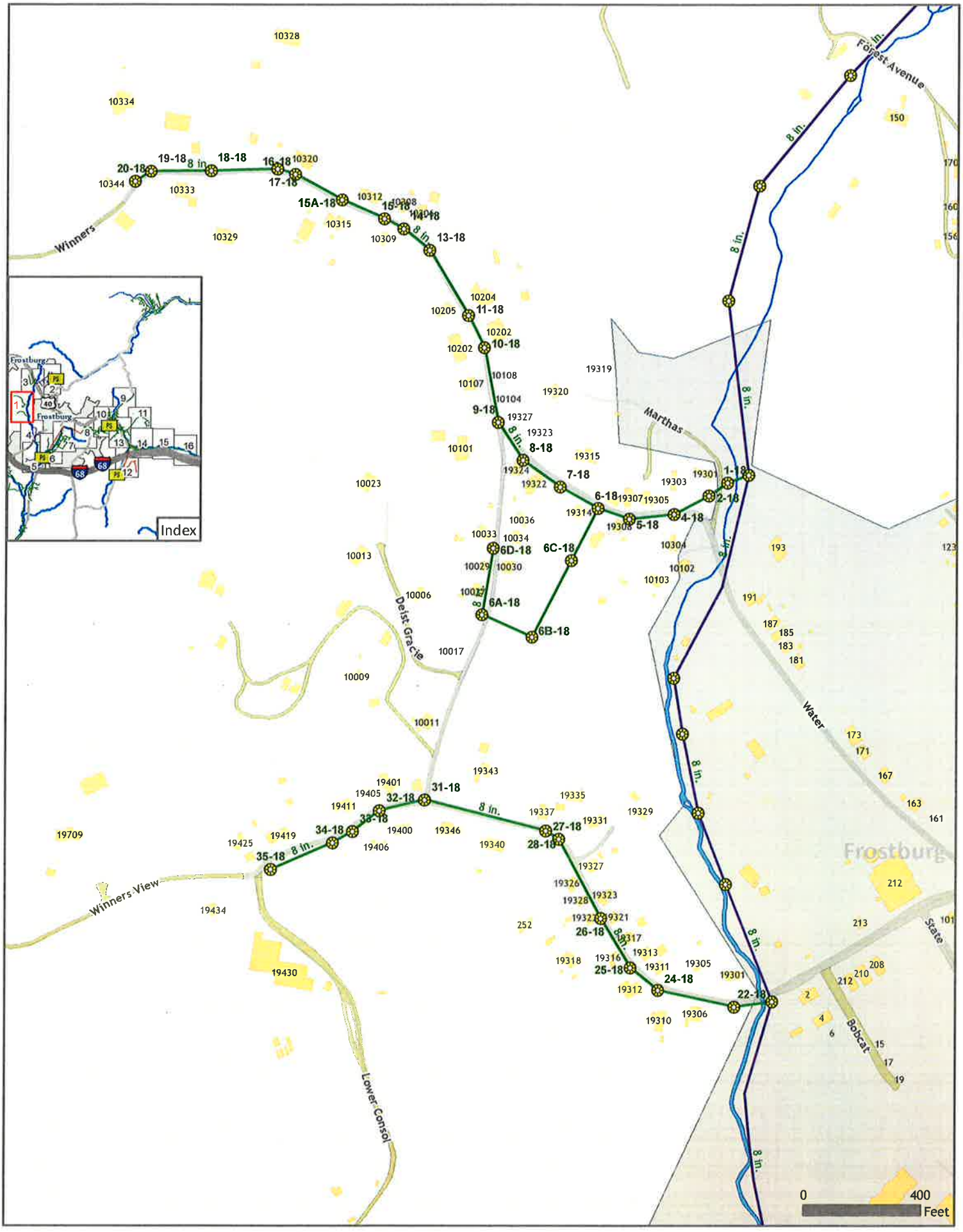
Cumberland
12403
Old Willowbrook
12401
12400
12500
12501
Willow Brook
Brashier Hollow
18-8
17-8
16-8
15-8
14-8
13-8
12-8
11-8
10-8
9-8
8-8
7-8
6-8
5-8
4-8
3-8
2-8
PF-8
15 in.
0
400
Feet

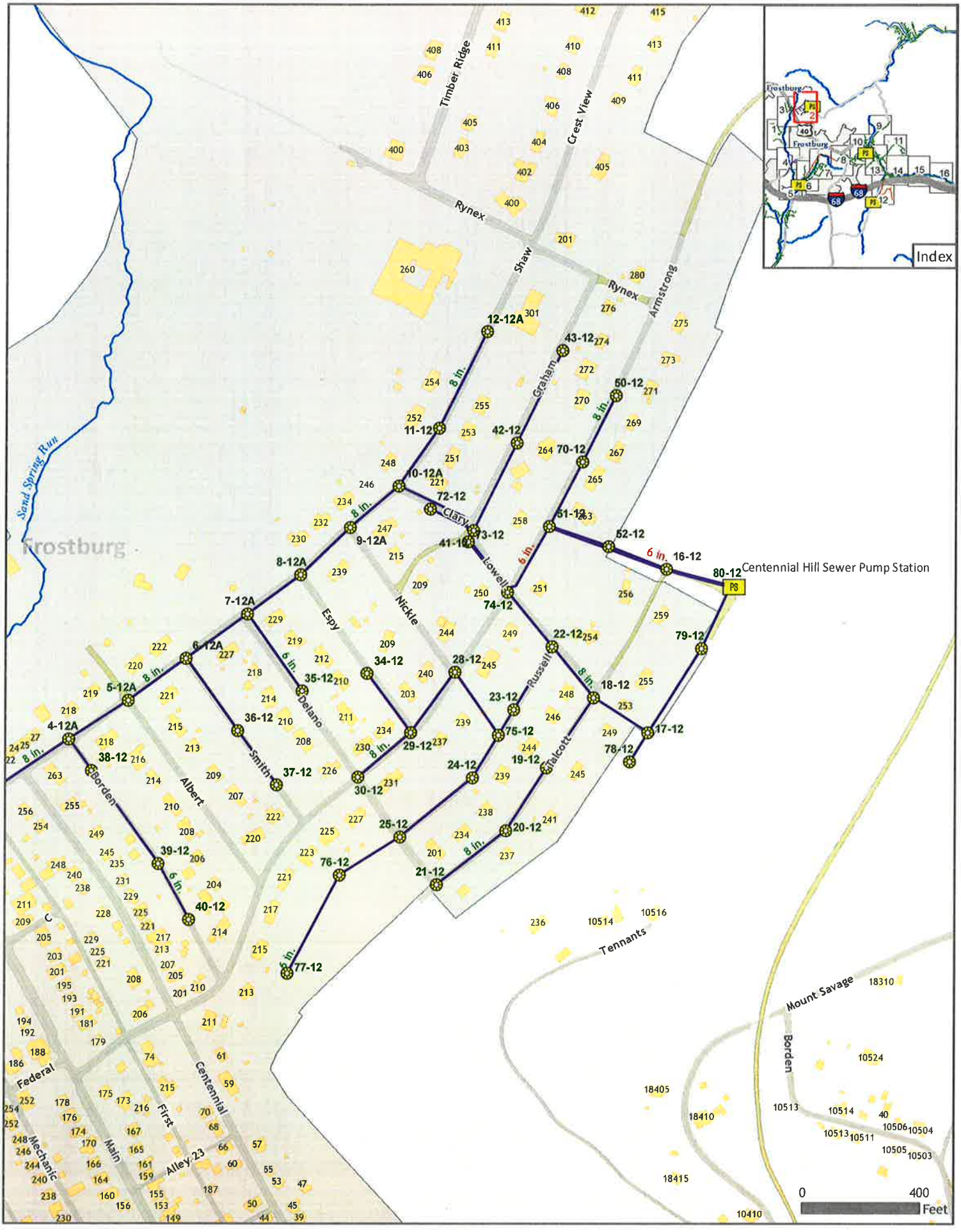

Index
Cumberland
Williams
Willow Brook
Amanda
Sunrise
Mcgee
Spring Hollow
Oak Tree Ridge
Strong Hollow
Messick
Creek
White
PF-8
2-8
1-8
1A-8
1B-8
3-8
33A-21-CO
33-21
61-21
56-21
55-21
66-21
59-21
52-21
53-21
44-21
63-21
54-21
57-21
51-21
58-21
58A-21-CO
50-21
49A-21-CO
49-21
64-21
48-21
62-21
47-21
47A-21
46-21
43A-21-CO
43-21
45-21
42-21
41-21
40-21
39-21
1-17
2-17
3-17
4-17
5-17
6-17
7-17
7A-17-CO
8-17
8A-17
9-17
10-17
24 in.
15 in.
10 in.
8 in.
0
400
Feet

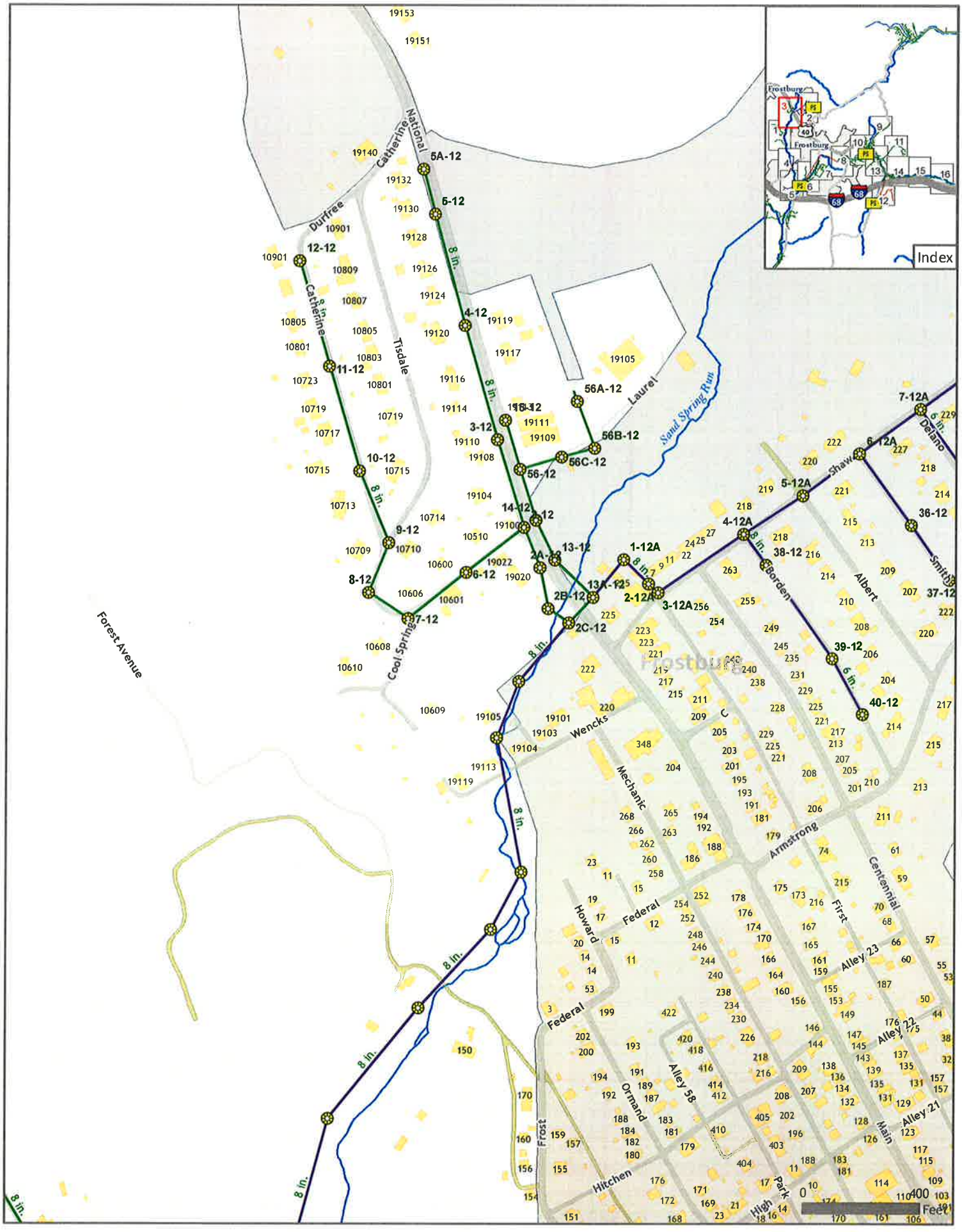

Index
Cumberland
43A-21-CO
46-21
43-21
45-21
41-21
40-21
39-21
1-17
2-17
3-17
4-17
5-17
6-17
7-17
7A-17-CO
8-17
8A-17
9-17
10-17
11-17
12-17
13-17
14-17
15-17
15A-17
16-17
17-17
18-17
19-17
24 in.
10 in.
8 in.
Mcgee
Creek
Spring Hollow
Williams
Strong Hollow
Oak Tree Ridge
Faults Creek
Frazier Lake
Messick
Cumberland
0
400
Feet

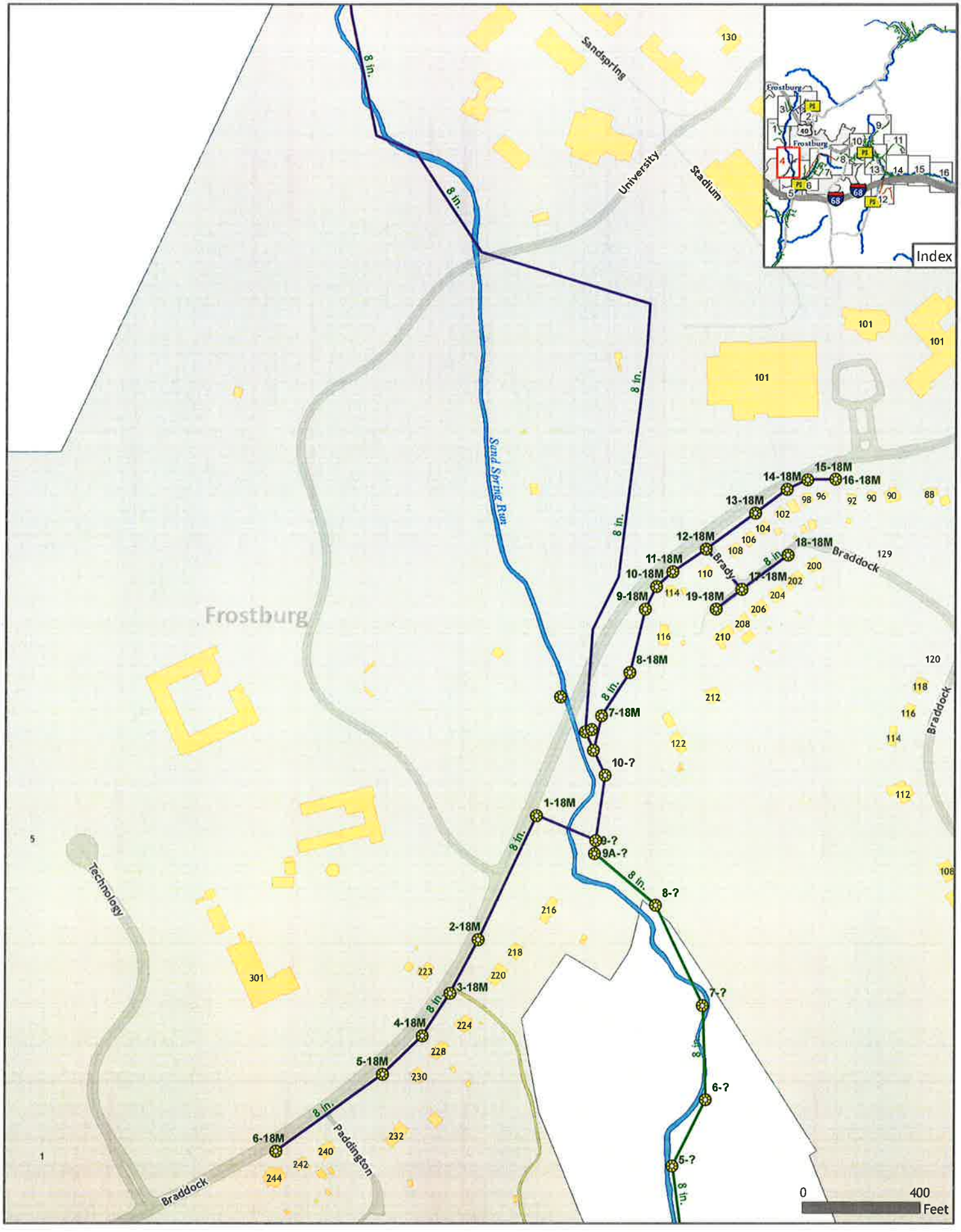
Braddock Run Index

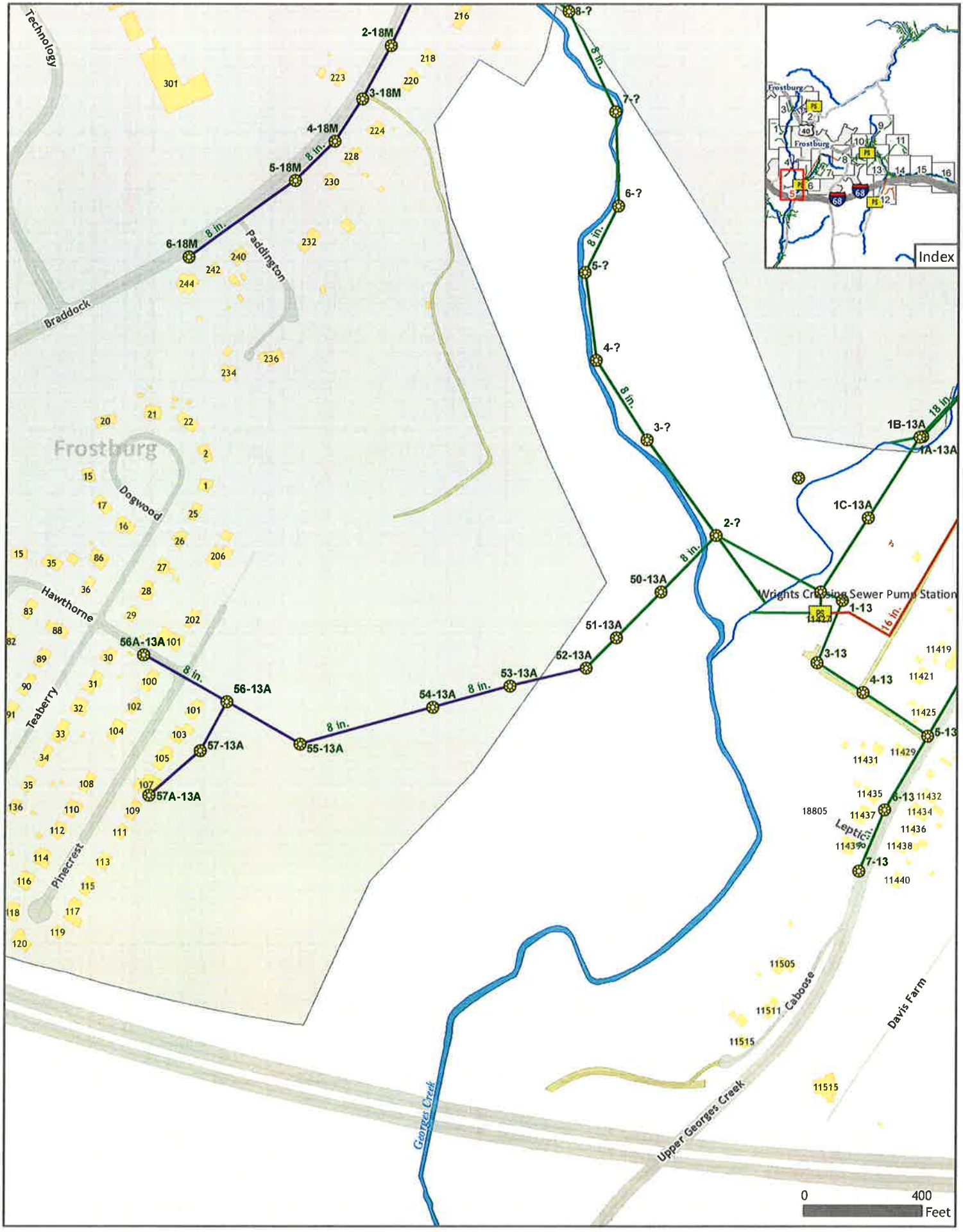



Forest Avenue
Winners
Marthas
Deist Gracie
Water
Winners View
Lower Consol
Bobcat
State
Frostburg
Index
0
400
Feet
8 in.
20-18
19-18
18-18
16-18
17-18
15A-18
15-18
14-18
13-18
11-18
10-18
9-18
8-18
7-18
6-18
5-18
4-18
2-18
1-18
6D-18
6C-18
6A-18
6B-18
31-18
32-18
33-18
34-18
35-18
27-18
28-18
26-18
25-18
24-18
22-18


Timber Ridge
Crest View
Rynex
Shaw
Armstrong
Graham
Lowell
Clary
Nickle
Espy
Delano
Russell
Talcott
Borden
Albert
Smith
Federal
Centennial
First
Main
Alley 23
Mechanic
Tennants
Mount Savage
Sand Spring Run
Frostburg
12-12A
43-12
50-12
11-12
42-12
70-12
10-12A
72-12
73-12
51-12
52-12
16-12
80-12
Centennial Hill Sewer Pump Station
9-12A
41-12
74-12
8-12A
7-12A
6-12A
5-12A
4-12A
34-12
28-12
22-12
79-12
35-12
23-12
18-12
17-12
36-12
75-12
78-12
38-12
29-12
37-12
24-12
19-12
30-12
39-12
25-12
20-12
76-12
21-12
40-12
77-12
8 in.
6 in.
Index
0
400
Feet

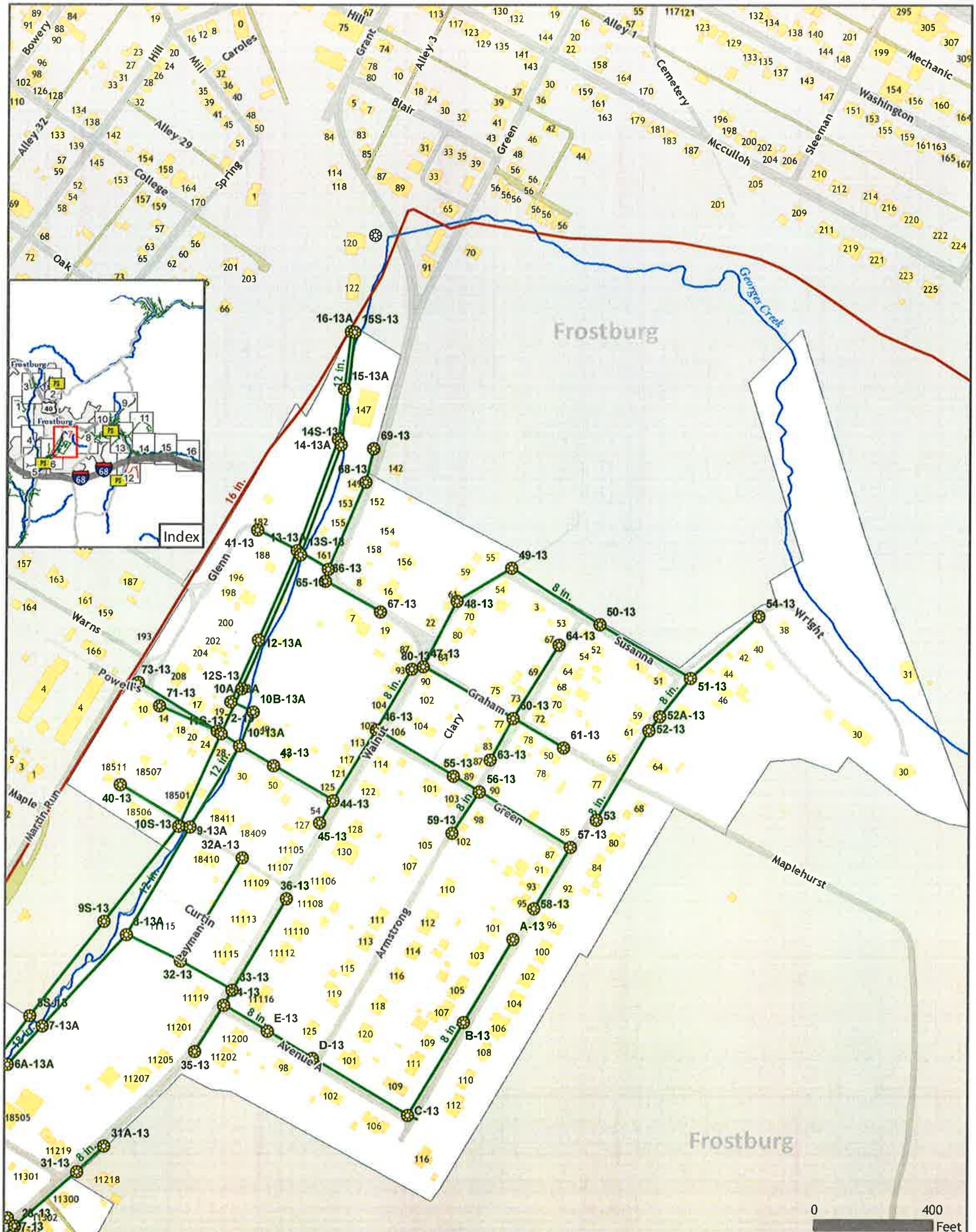

Index
Catherine
National
Durfree
Tisdale
Laurel
Sand Spring Run
Cool Spring
Forest Avenue
Wencks
Mechanic
Armstrong
Centennial
First
Federal
Howard
Alley 23
Alley 22
Alley 21
Alley 58
Ormand
Frost
Hain
Hitchen
Park
High
Albert
Borden
Shaw
Delano
Smith
8 in.
6 in.
5A-12
5-12
12-12
11-12
10-12
9-12
8-12
7-12
4-12
3-12
2-12
1-12
56A-12
56B-12
56C-12
56-12
14-12
13-12
2A-12
2B-12
2C-12
13A-12
3-12A
4-12A
5-12A
6-12A
7-12A
36-12
37-12
38-12
39-12
40-12
0
400
Feet

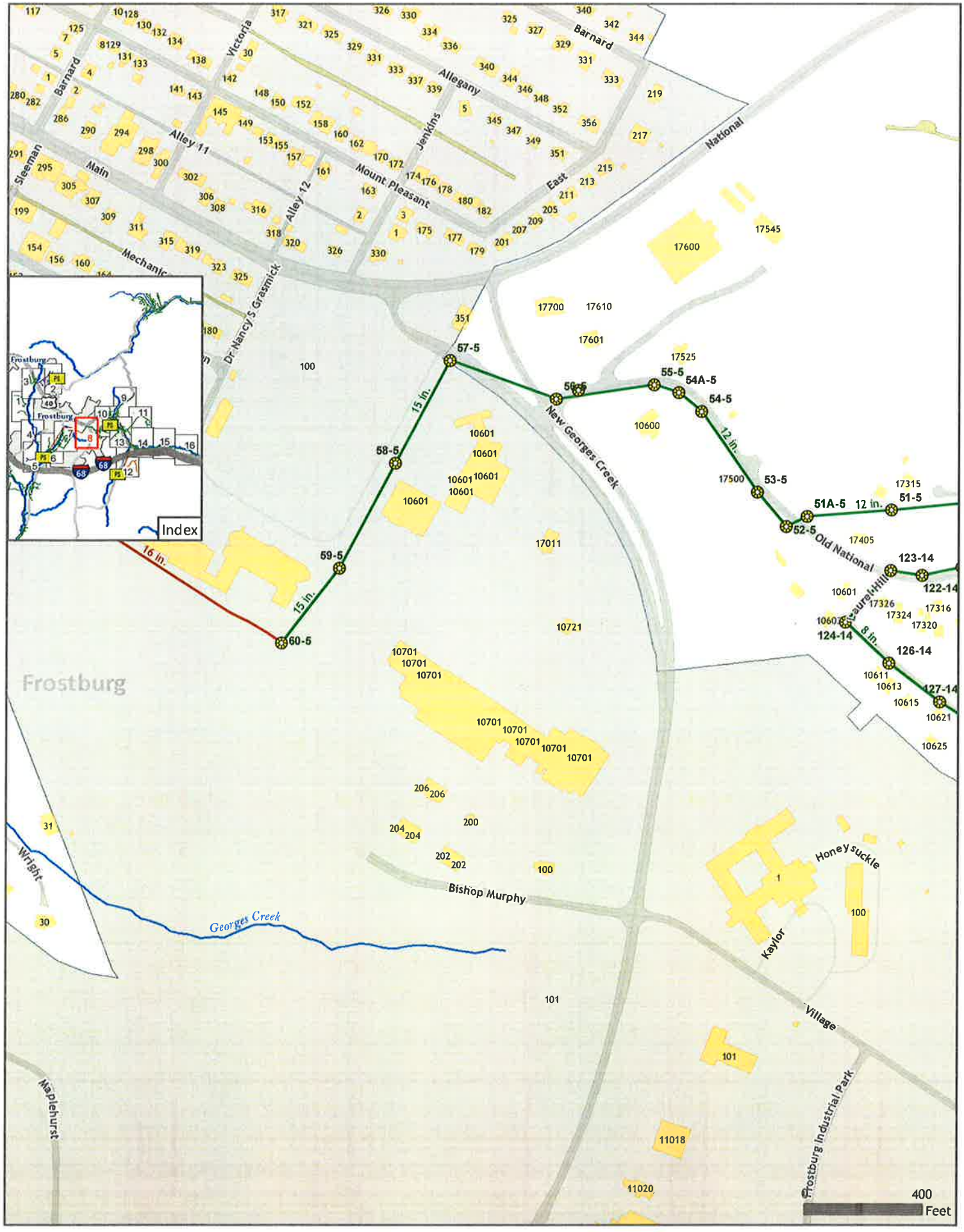

Sandspring
University
Stadium
Sand Spring Run
Frostburg
Braddock
Brady
Technology
Paddington
8 in.
14-18M
15-18M
16-18M
13-18M
12-18M
11-18M
10-18M
9-18M
18-18M
17-18M
19-18M
8-18M
7-18M
10-?
1-18M
9-?
9A-?
8-?
2-18M
3-18M
4-18M
5-18M
6-18M
7-?
6-?
5-?
Index
0
400
Feet

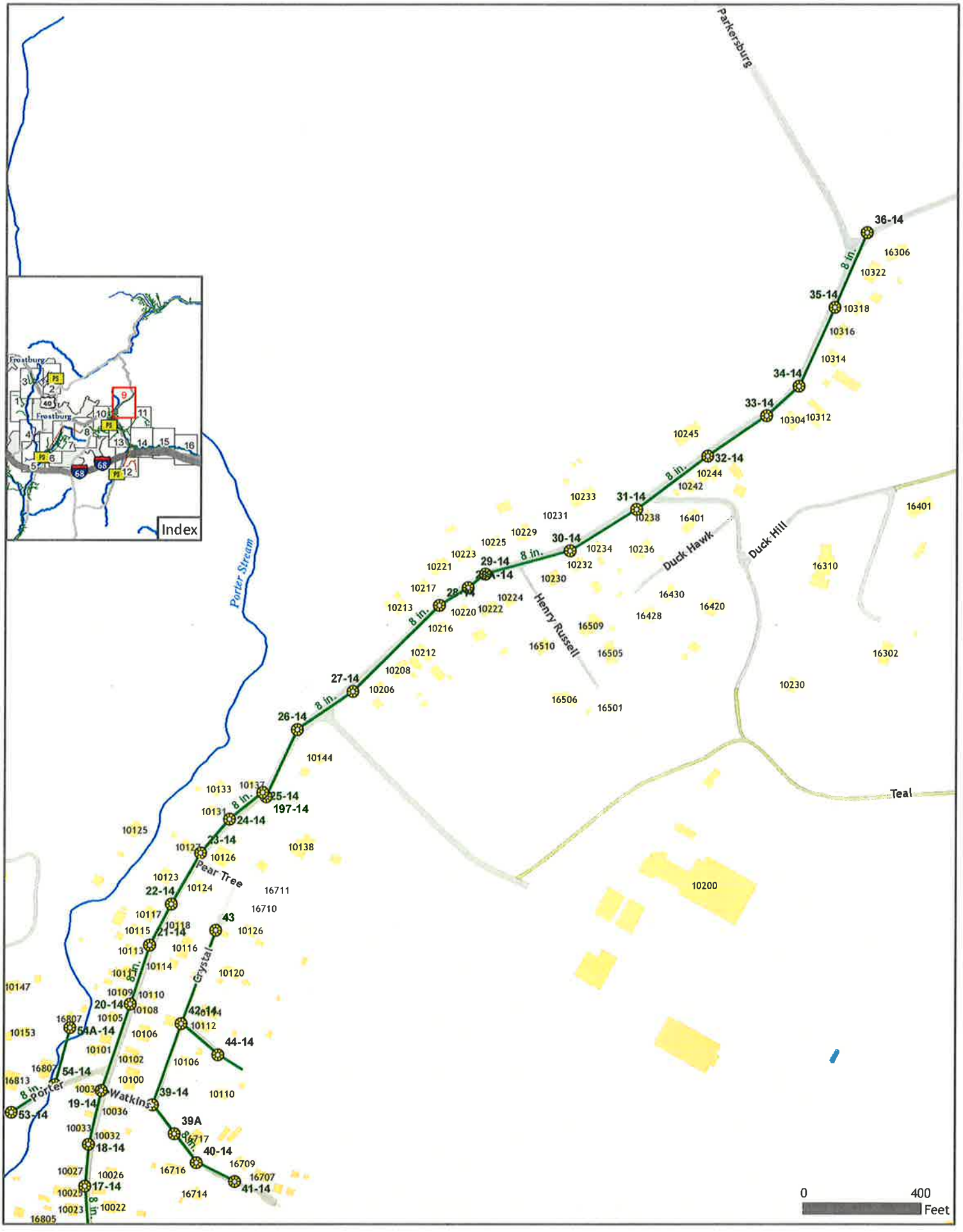

Technology
301
2-18M
3-18M
4-18M
5-18M
6-18M
8 in.
Paddington
Braddock
Frostburg
Dogwood
Hawthorne
Teaberry
Pinecrest
56A-13A
56-13A
57-13A
57A-13A
55-13A
54-13A
53-13A
52-13A
51-13A
50-13A
2-?
3-?
4-?
5-?
6-?
7-?
8-?
1B-13A
1A-13A
1C-13A
18 in.
Wrights Crossing Sewer Pump Station
1-13
16 in.
3-13
4-13
5-13
6-13
7-13
Leptic
Caboose
Davis Farm
George's Creek
Upper Georges Creek
Index
0
400
Feet

Braddock Run

Sheet 6


Frostburg
Georges Creek
16 in.
12 in.
8 in.
Index
Frostburg
16-13A
15S-13
15-13A
14S-13
14-13A
69-13
68-13
13-13
13S-13
66-13
65-13
67-13
41-13
49-13
48-13
50-13
54-13
51-13
52A-13
52-13
12-13A
80-13
47-13
64-13
60-13
61-13
73-13
71-13
12S-13
10A-13A
10B-13A
10-13A
46-13
43-13
55-13
56-13
63-13
40-13
44-13
45-13
10S-13
9-13A
32A-13
59-13
57-13
53
36-13
58-13
9S-13
8-13A
A-13
32-13
33-13
E-13
B-13
D-13
8S-13
7-13A
6A-13A
35-13
C-13
31A-13
31-13
Susanna
Wright
Graham
Clary
Walnut
Green
Maplehurst
Armstrong
Avenue A
Layman
Curtin
Glenn
Warns
Powell's
Maple
Martin Run
Bowery
Hill
Mill
Caroles
Alley 32
Alley 29
College
Spring
Oak
Grant
Alley 3
Blair
Alley 1
Cemetery
Mcculloh
Sleeman
Washington
Mechanic
0
400
Feet


Barnard
Victoria
Allegany
Jenkins
National
East
Main
Alley 11
Alley 12
Mount Pleasant
Sleeman
Mechanic
Dr Nancy S Grasmick
New Georges Creek
Old National
Laurel Hill
Bishop Murphy
Georges Creek
Wright
Honeysuckle
Kaylor
Village
Maplehurst
Frostburg Industrial Park
Frostburg
Index
57-5
58-5
59-5
60-5
55-5
54A-5
54-5
53-5
52-5
51A-5
51-5
123-14
122-14
124-14
126-14
127-14
15 in.
16 in.
12 in.
8 in.
400
Feet


Parkersburg
Index
Porter Stream
Duck Hawk
Duck Hill
Henry Russell
Pear Tree
Crystal
Watkins
Porter
Teal
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34-14
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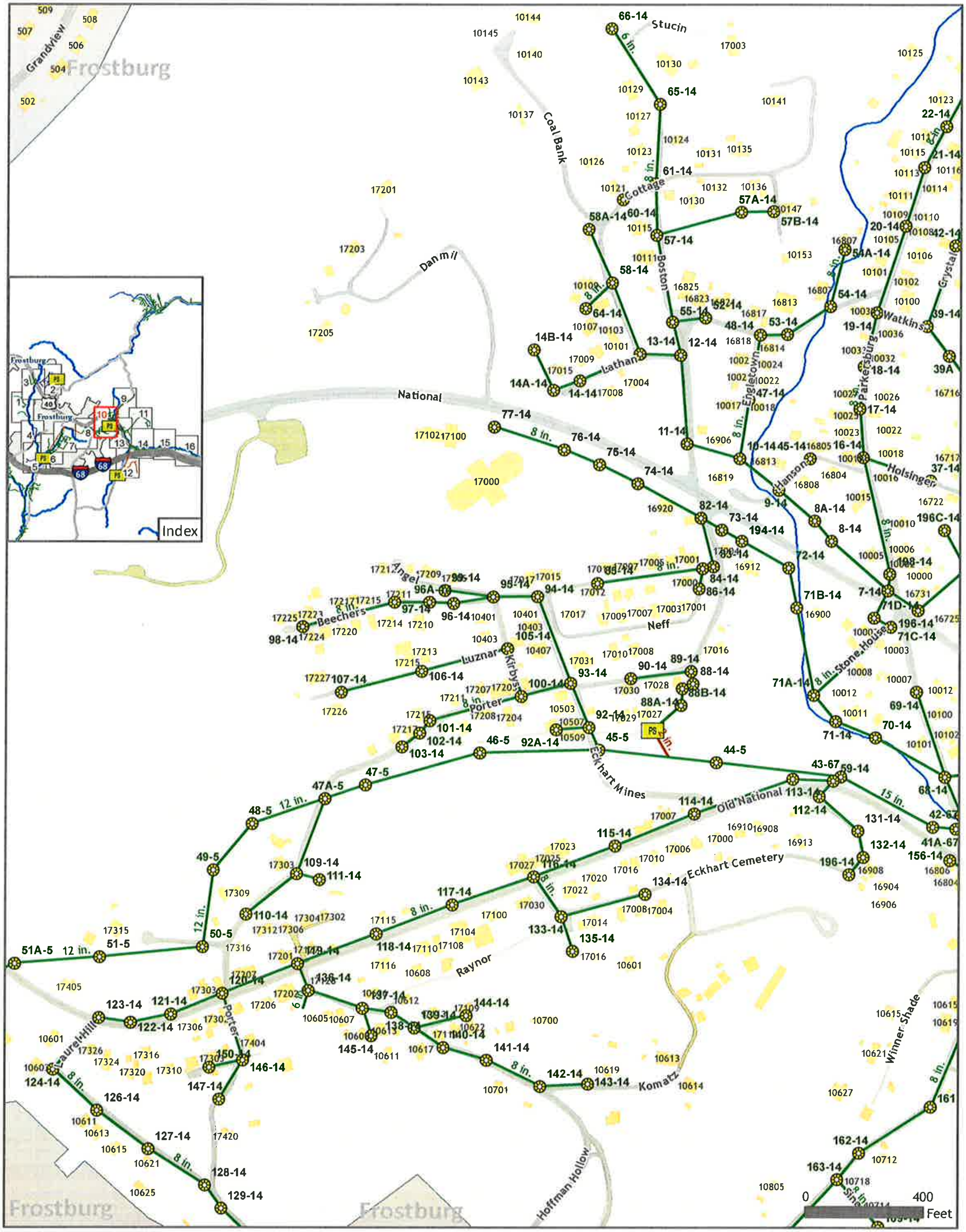
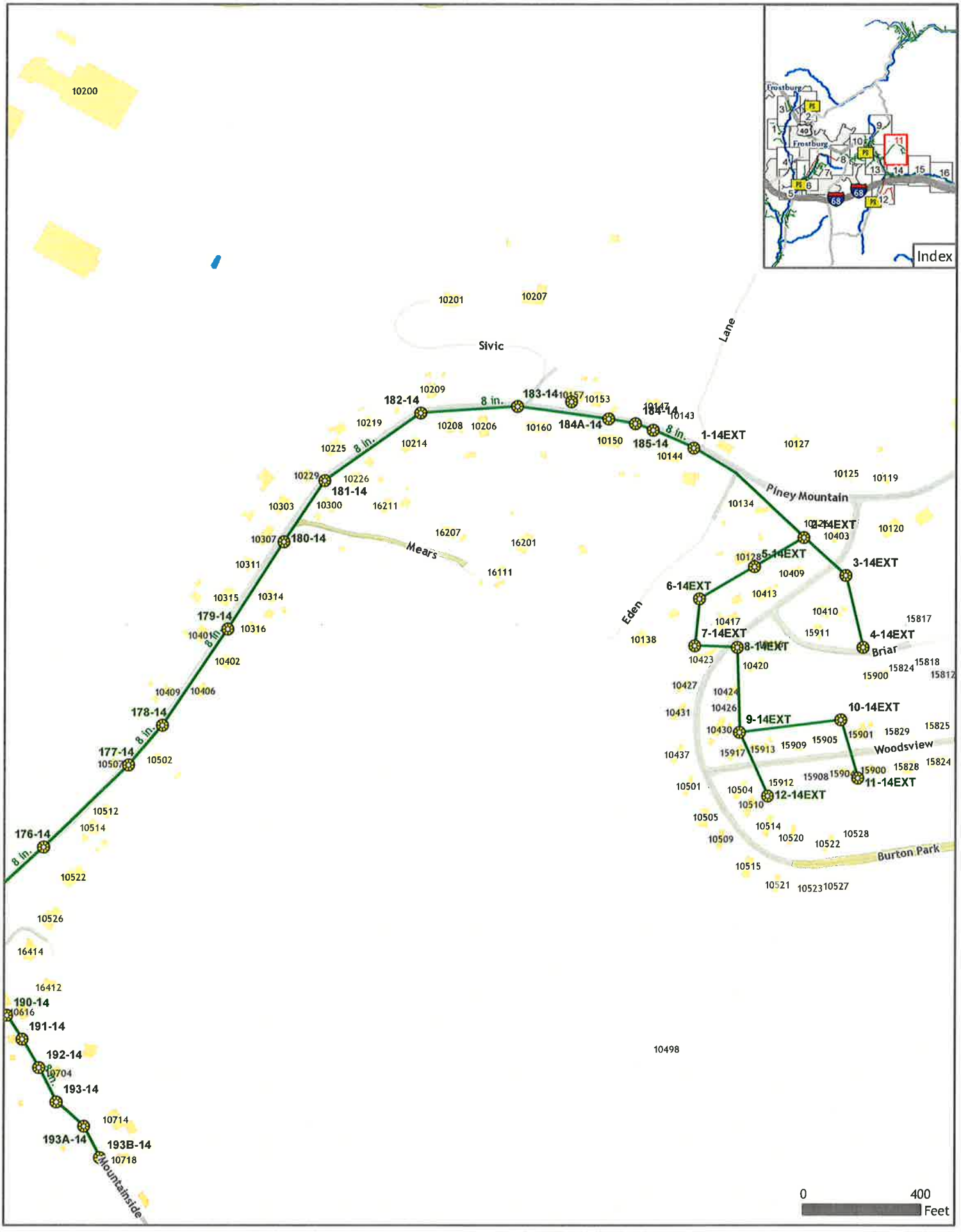
32-14
31-14
30-14
29-14
28-14
27-14
26-14
25-14
197-14
24-14
23-14
22-14
21-14
20-14
19-14
18-14
17-14
39-14
39A
40-14
41-14
42-14
43
44-14
54-14
53-14
56A-14
8 in.
0
400
Feet


Frostburg
Grandview
Stucin
Coal Bank
Cottage
Boston
Danmil
National
Lathan
Engletown
Parkersburg
Watkins
Grystal
Holsinger
Hanson
Stone House
Angel
Beechers
Luznar
Kirby
Porter
Neff
Eckhart Mines
Old National
Eckhart Cemetery
Raynor
Laurel Hill
Komatz
Hoffman Hollow
Winner Shade
8 in.
12 in.
15 in.
6 in.
PS
Index
0
400
Feet


Index
Sivic
Lane
Piney Mountain
Mears
Eden
Briar
Woodsview
Burton Park
Mountainside
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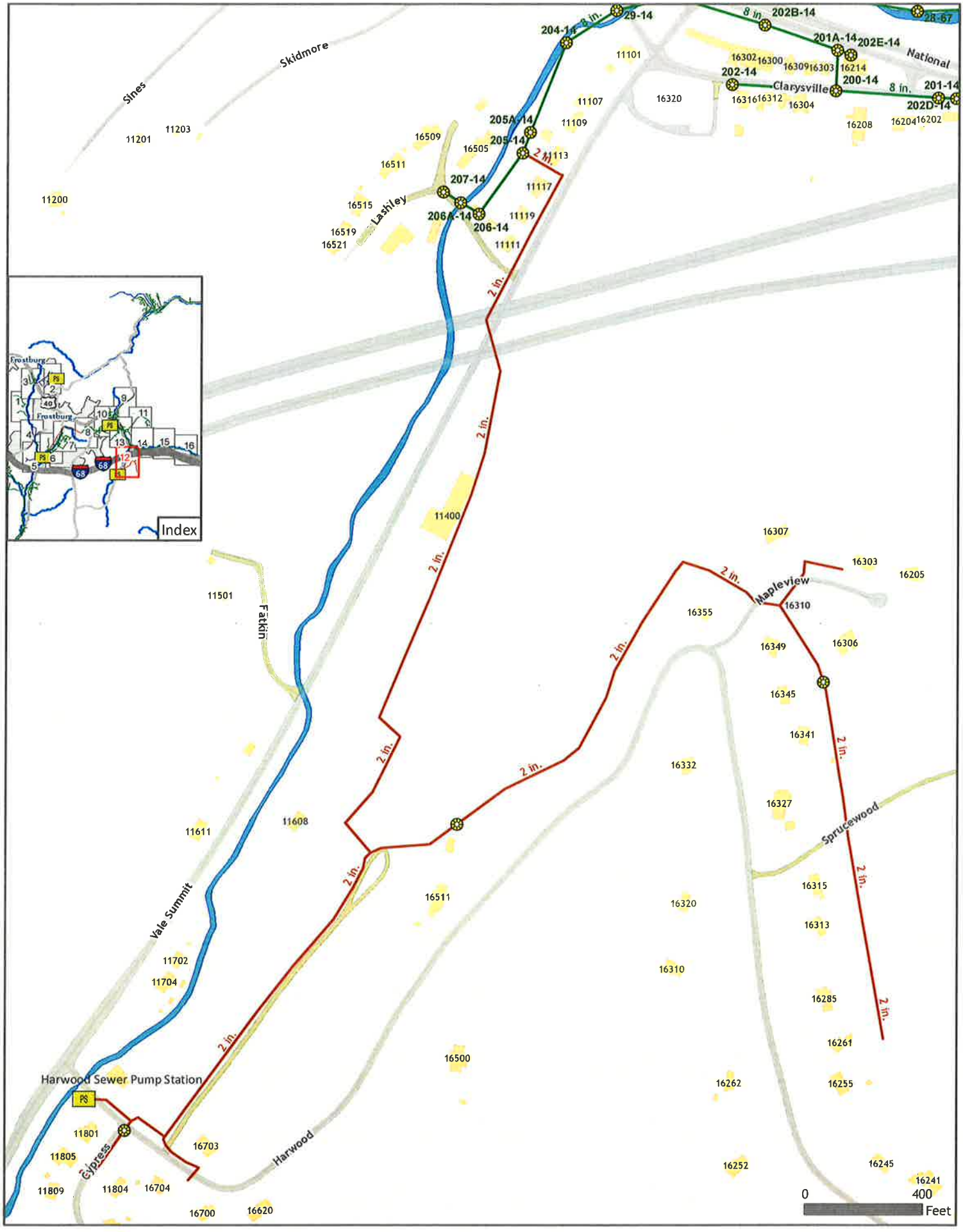
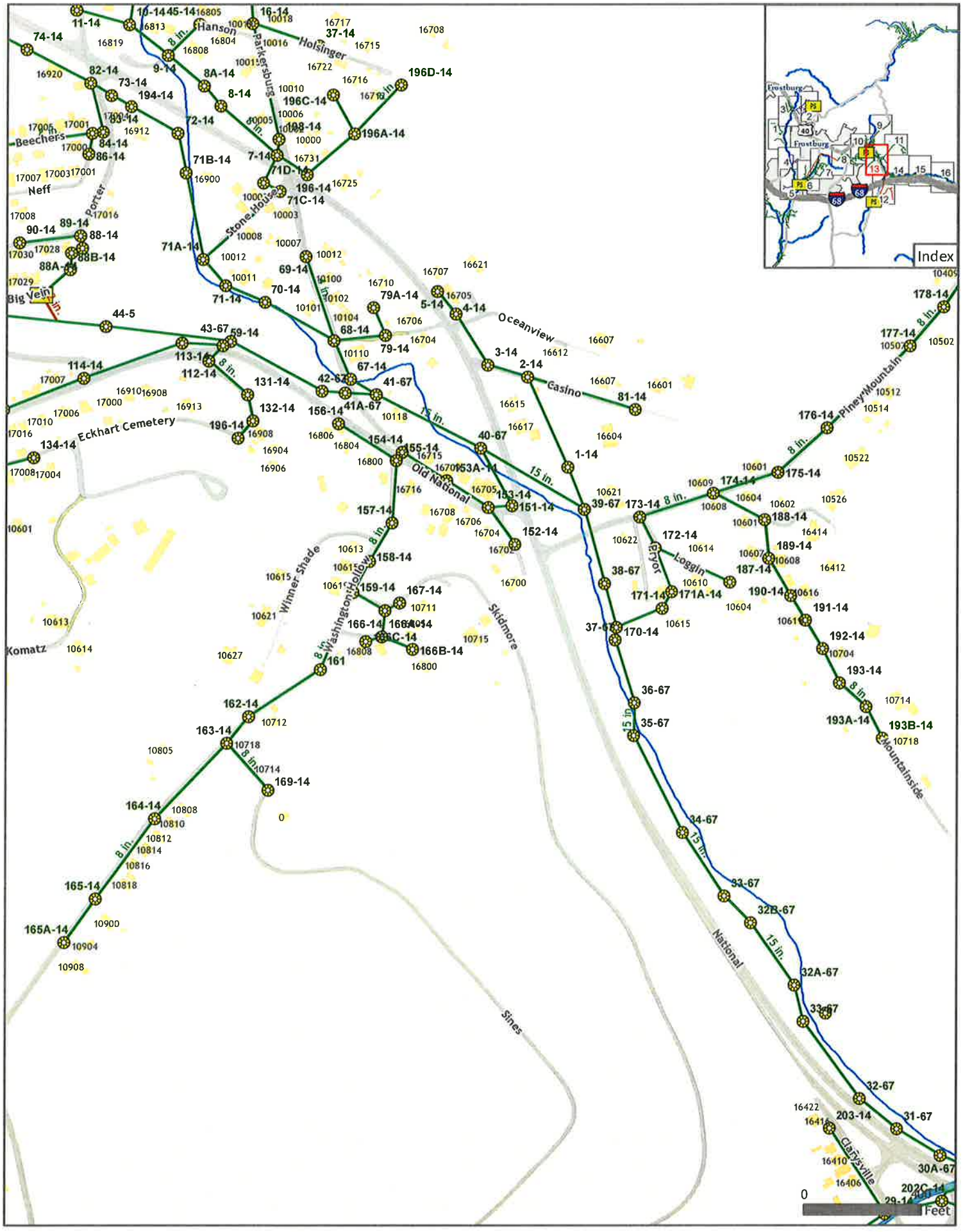
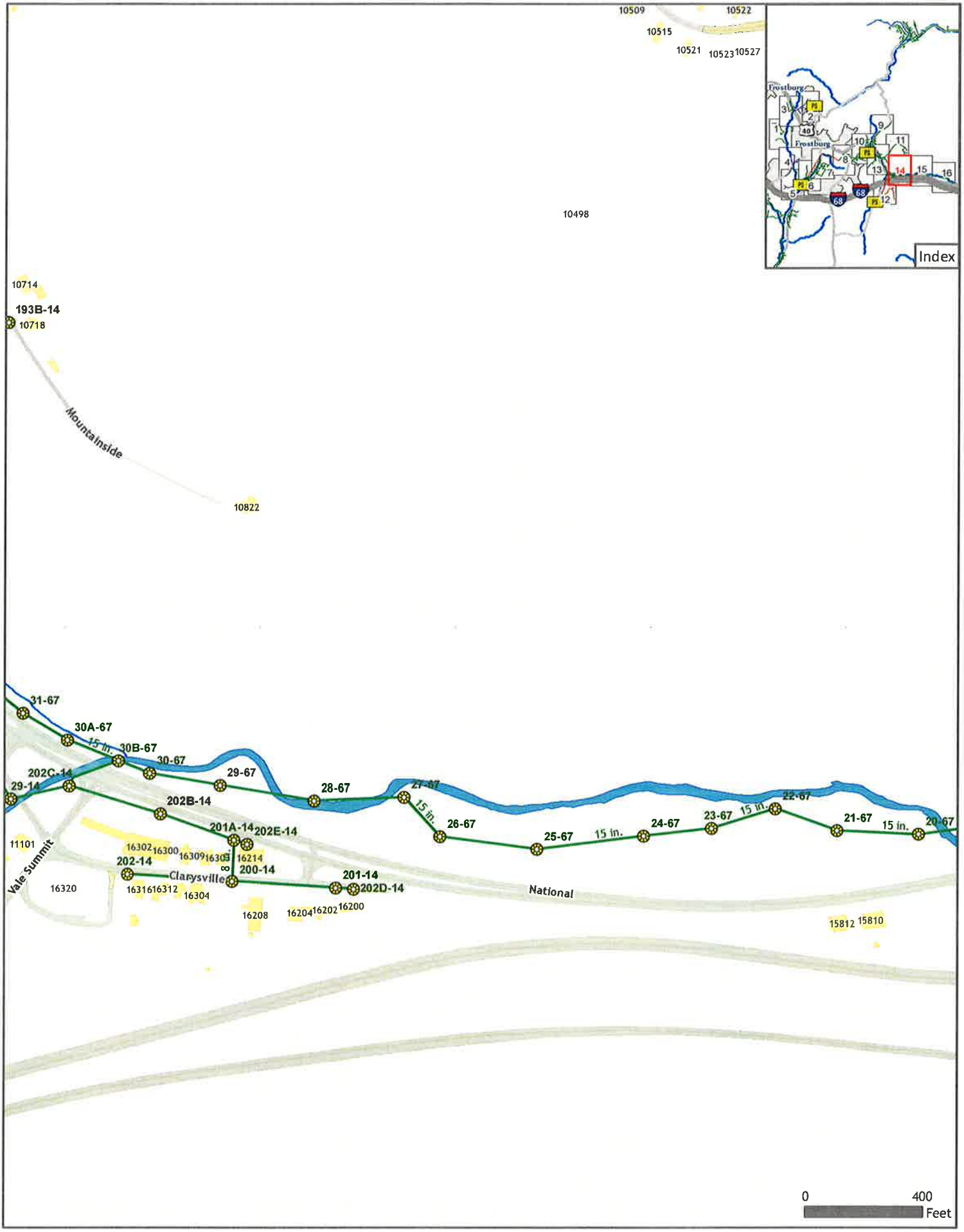
183-14
184A-14
185-14
1-14EXT
2-14EXT
3-14EXT
4-14EXT
5-14EXT
6-14EXT
7-14EXT
8-14EXT
9-14EXT
10-14EXT
11-14EXT
12-14EXT
181-14
180-14
179-14
178-14
177-14
176-14
190-14
191-14
192-14
193-14
193A-14
193B-14
8 in.
0
400
Feet


Skidmore
Sines
Lashley
Fatkin
Vale Summit
Cypress
Harwood
Mapleview
Sprucewood
Clarysville
National
Harwood Sewer Pump Station
PS
204-14
29-14
205A-14
205-14
207-14
206A-14
206-14
202B-14
201A-14
202E-14
202-14
200-14
201-14
202D-14
28-67
8 in.
2 in.
11200
11201
11203
11101
11107
11109
11113
11117
11119
11111
11400
11501
11608
11611
11702
11704
11801
11805
11809
11804
16704
16700
16620
16703
16500
16511
16509
16505
16515
16519
16521
16320
16316
16312
16304
16302
16300
16309
16303
16214
16208
16204
16202
16307
16303
16205
16310
16355
16349
16306
16345
16341
16332
16327
16315
16313
16310
16285
16261
16262
16255
16252
16245
16241
Index
0
400
Feet


Index
Frostburg
Beechers
Neff
Porter
Big Vein
Eckhart Cemetery
Komatz
Hanson
Parkersburg
Holsinger
Stone House
Winner Shade
Washington Hollow
Old National
Skidmore
Sines
Oceanview
Casino
Piney Mountain
Loggin
Mountainside
Clarysville
National
0
Feet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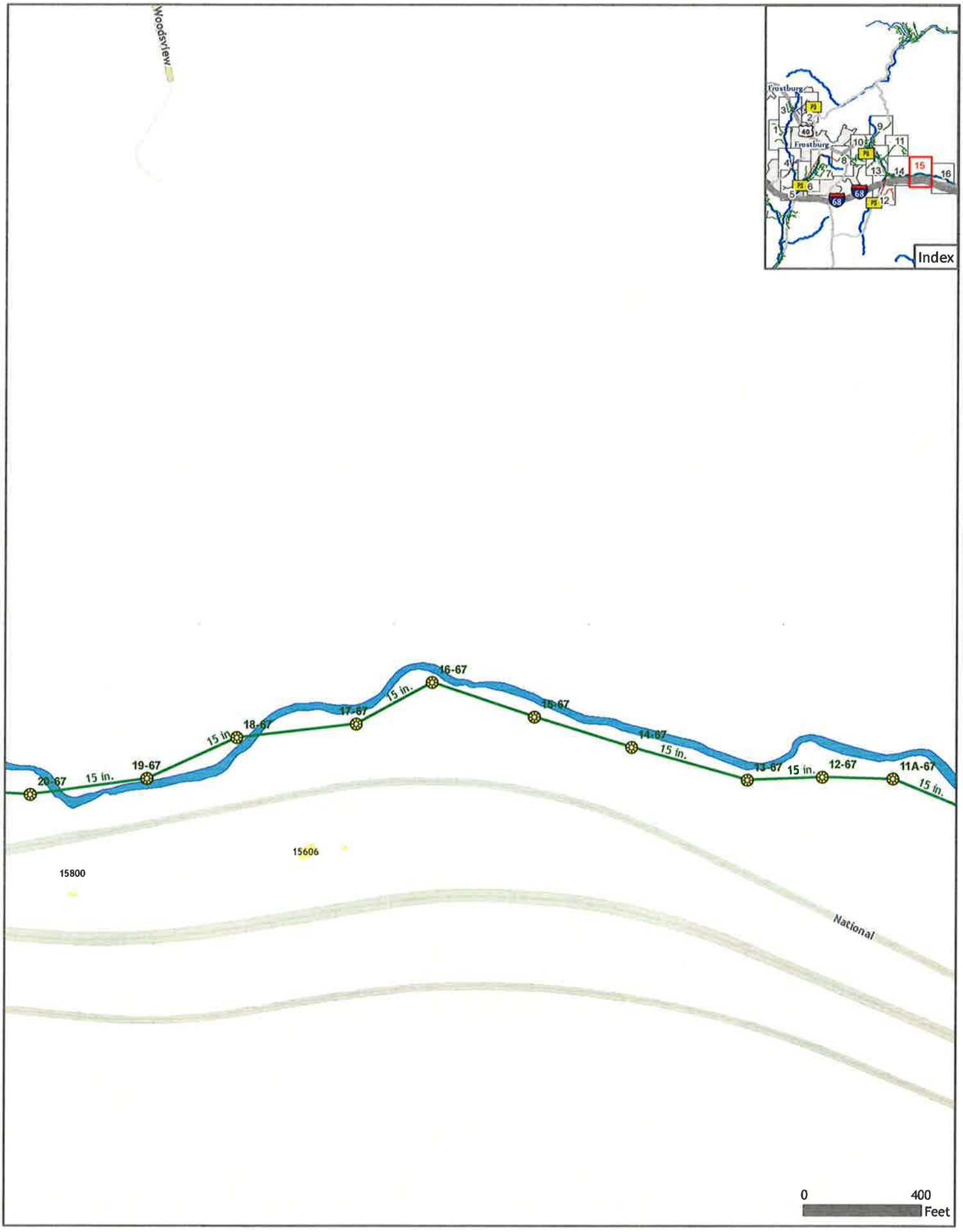
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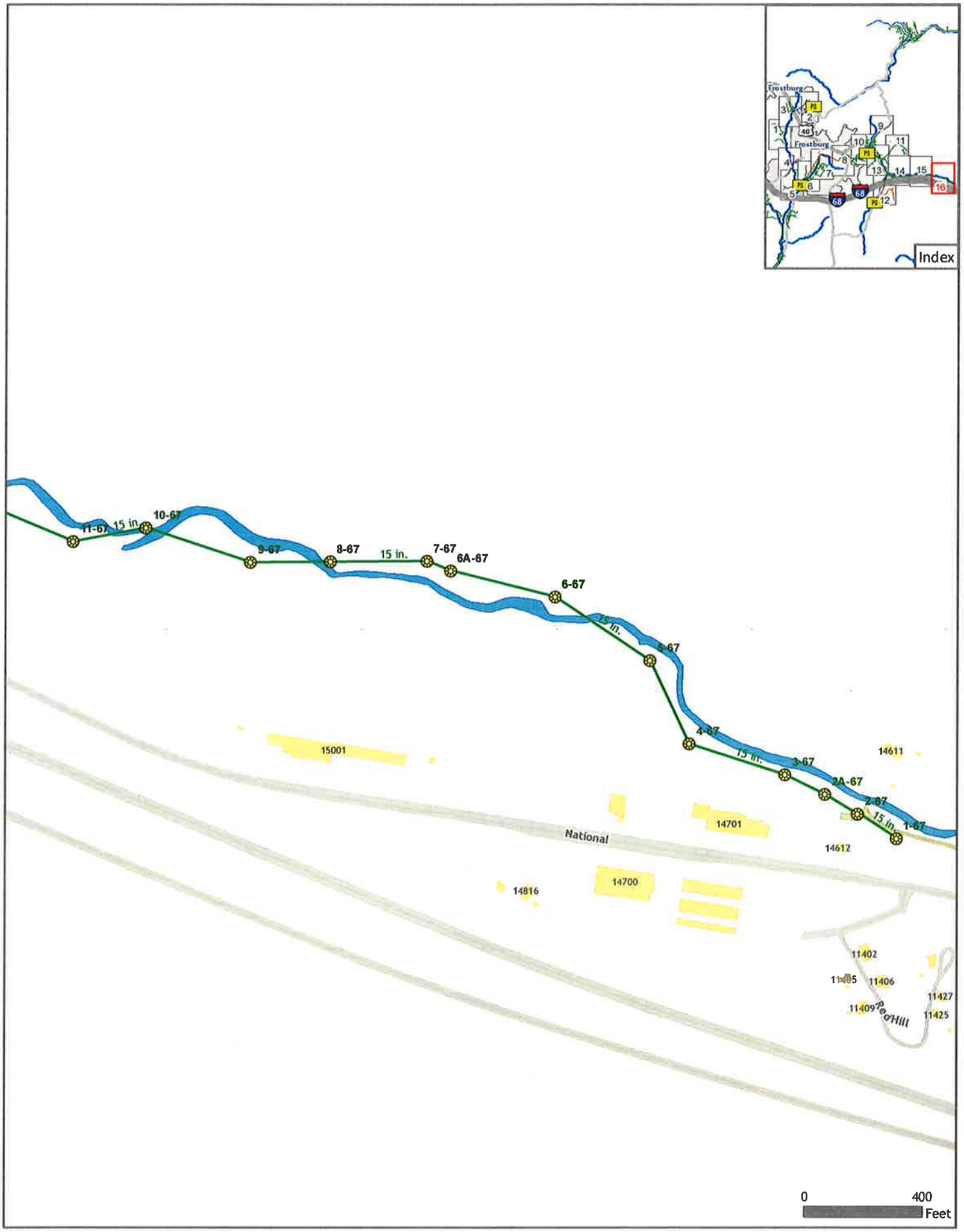
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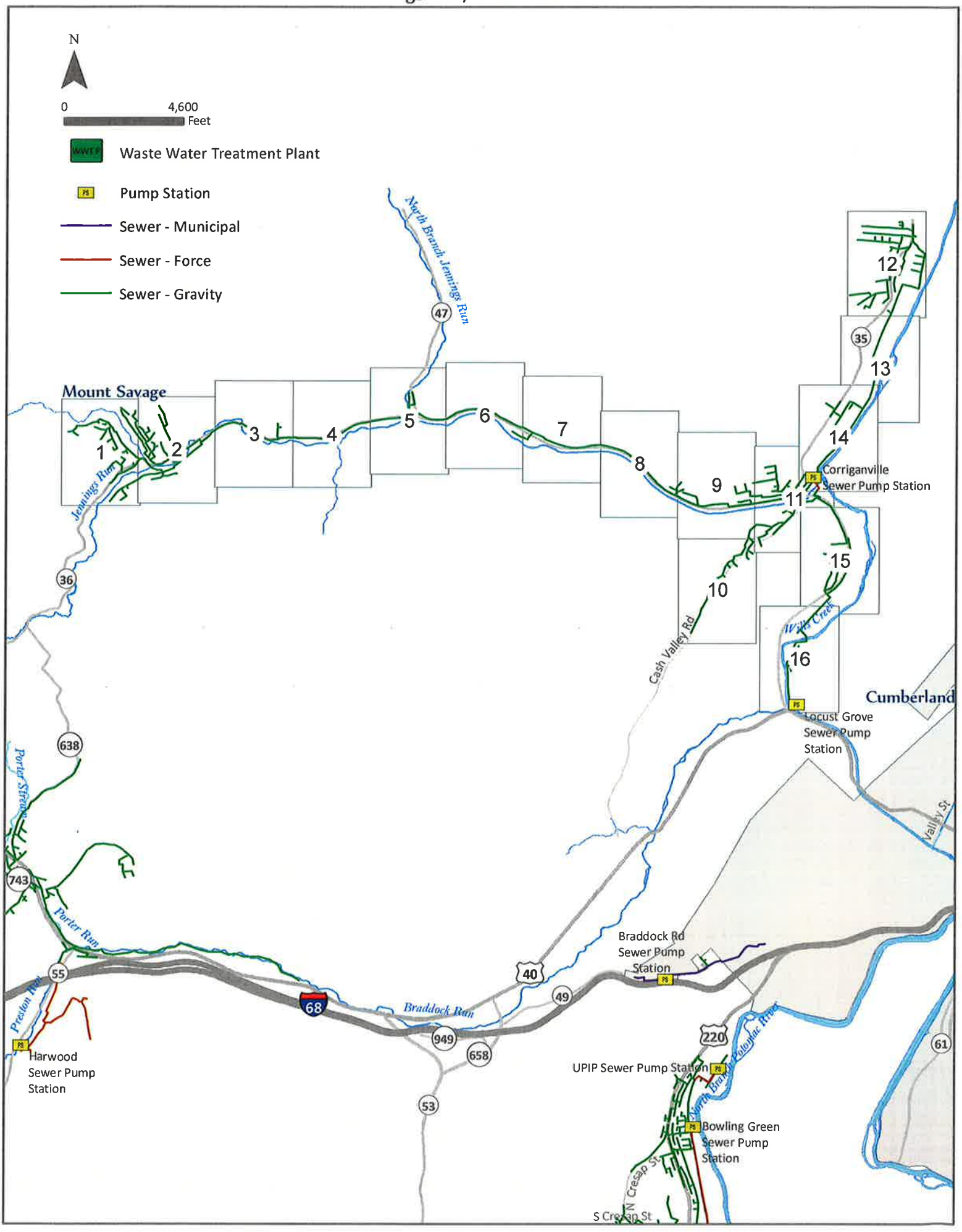

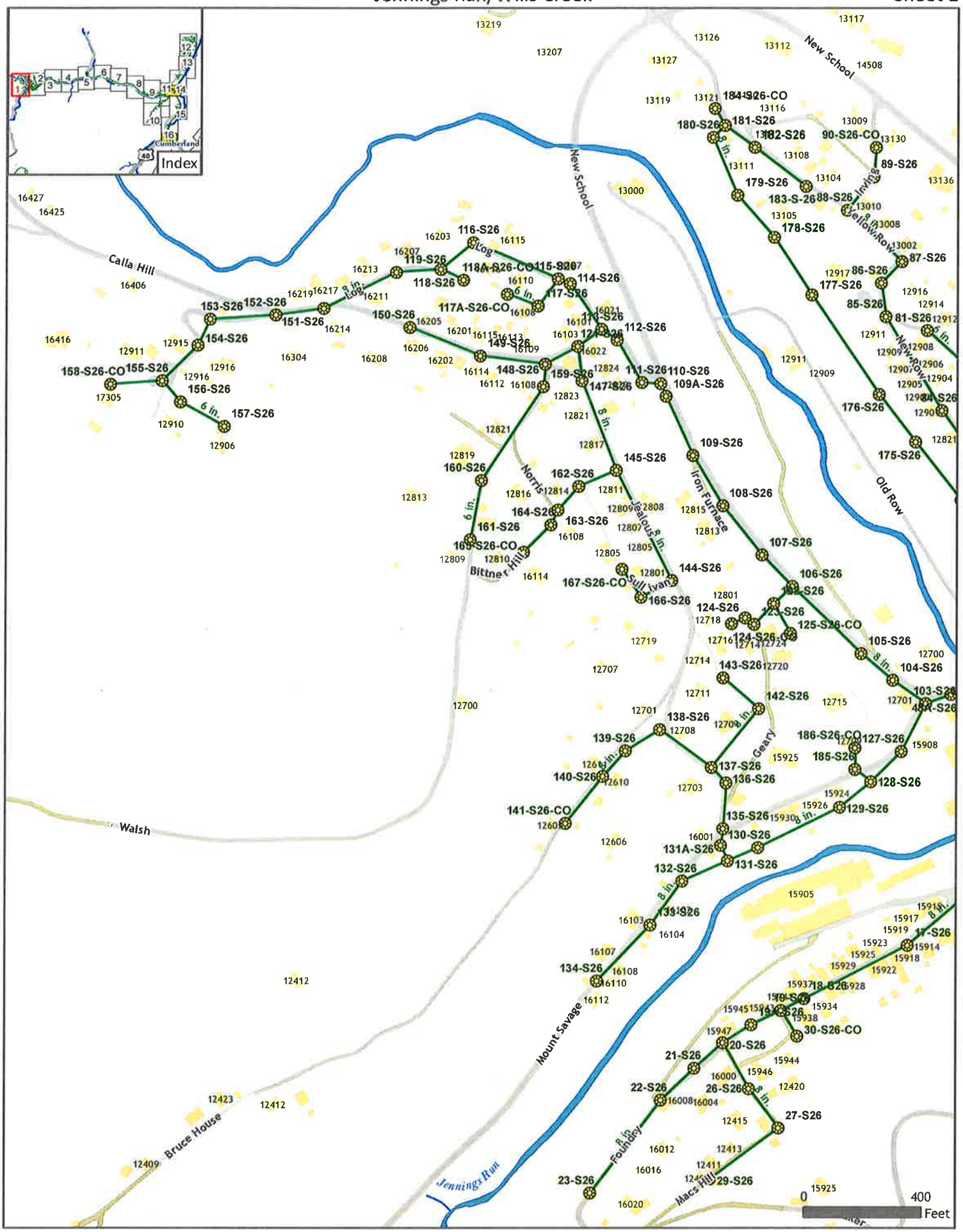
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Geary
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Bruce House
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Foundry
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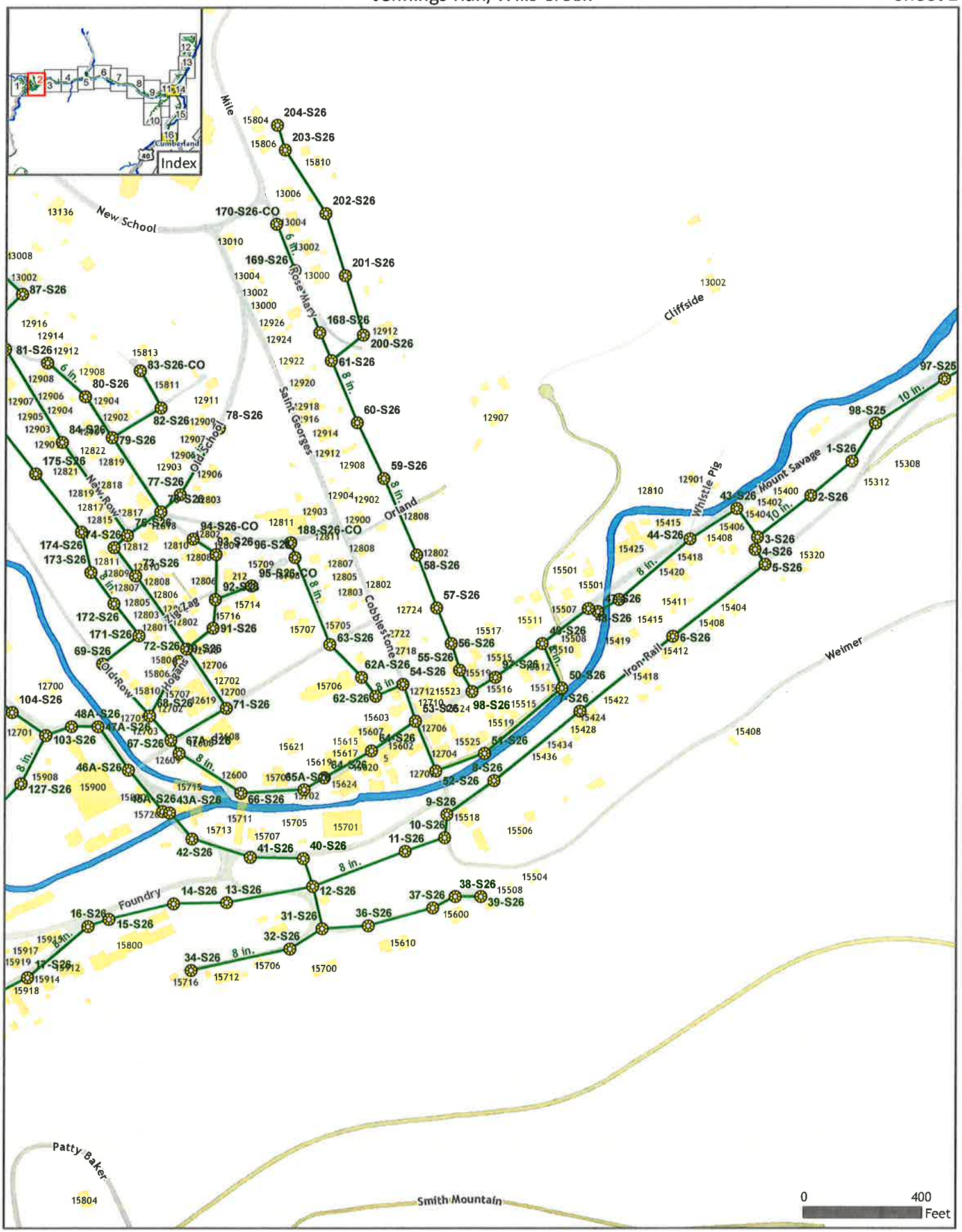
400
Feet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Old Row
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Rose Mary
Orland
Cobblestone
Iron Rail
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Foundry
Patty Baker
Smith Mountain
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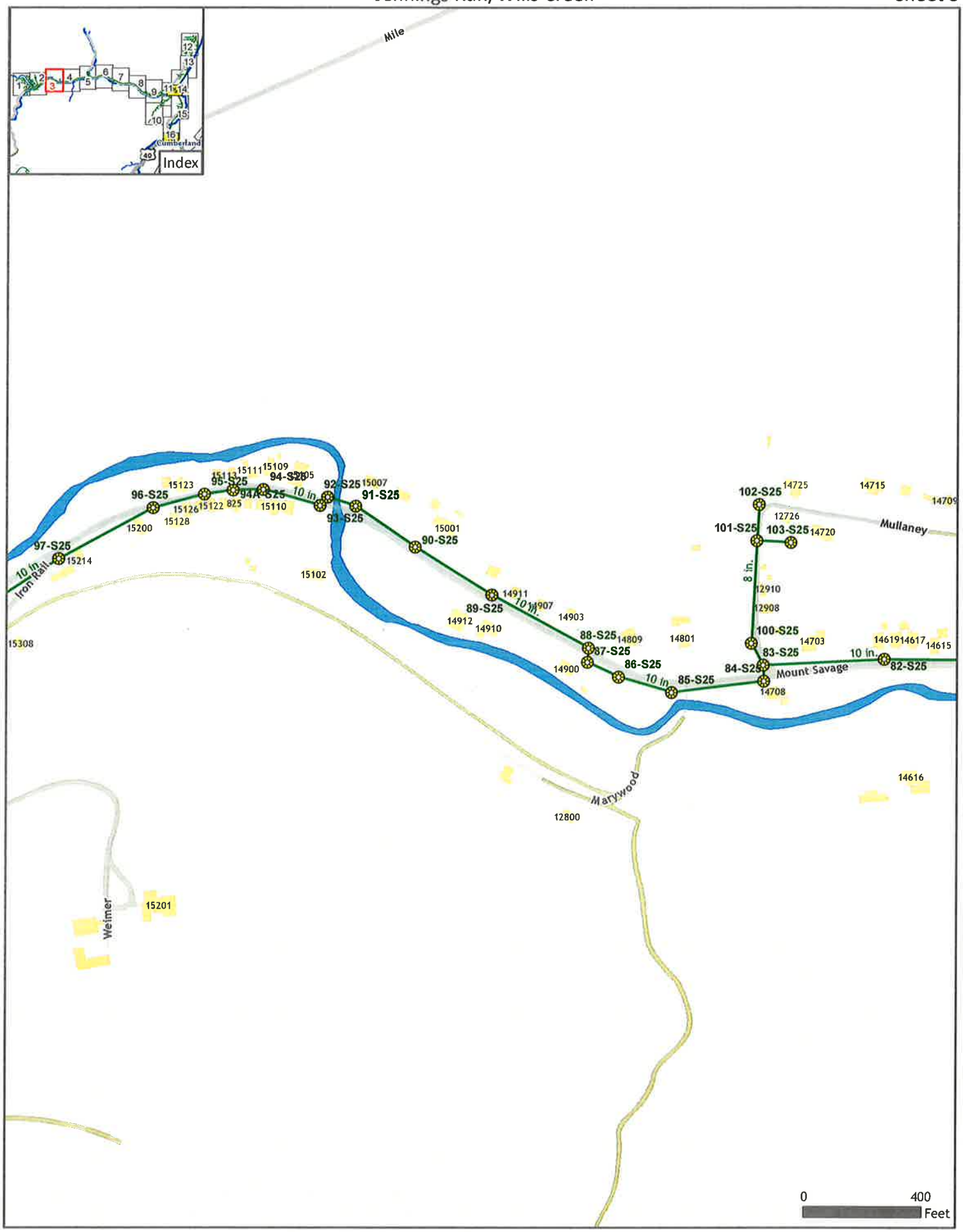
400
Feet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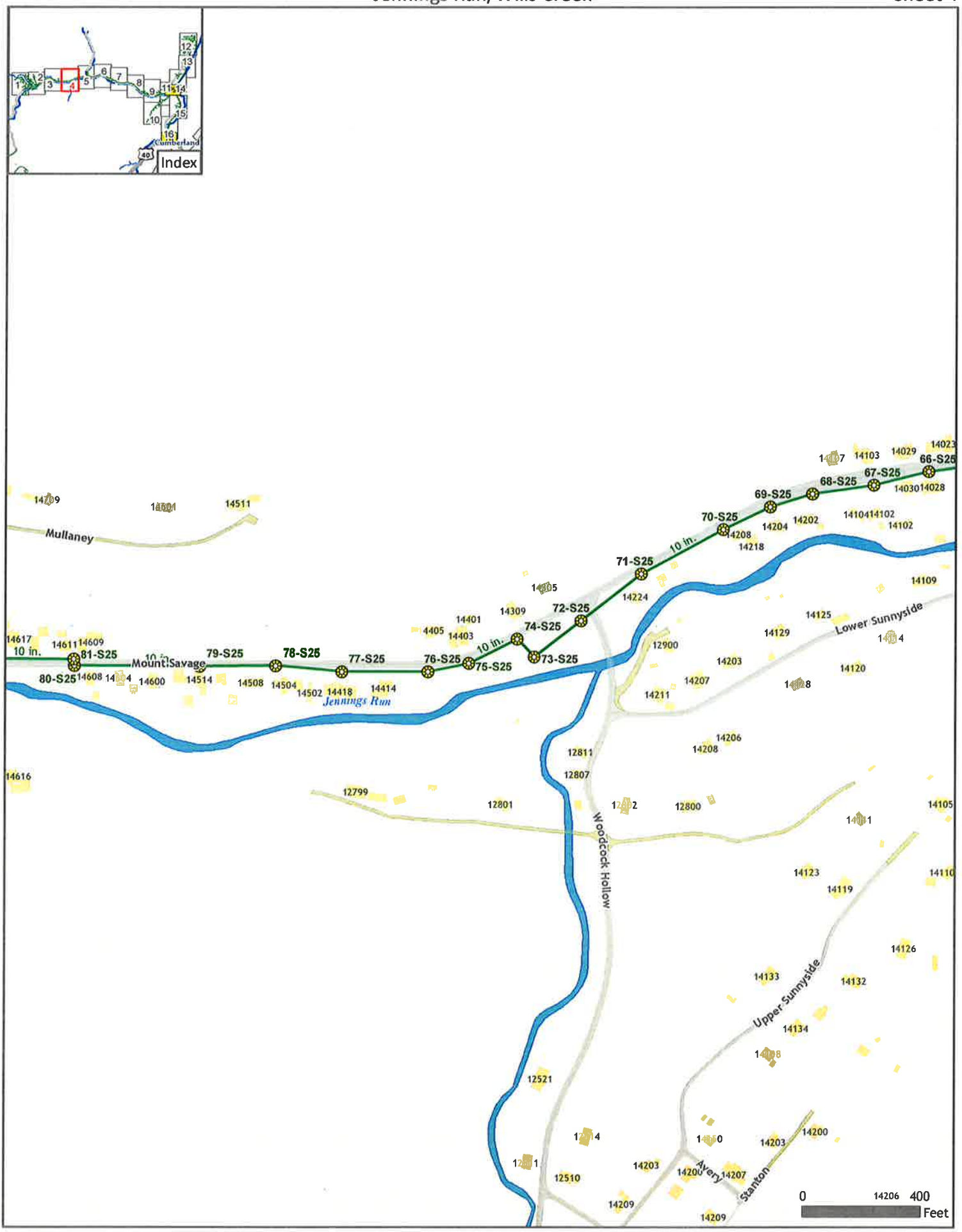
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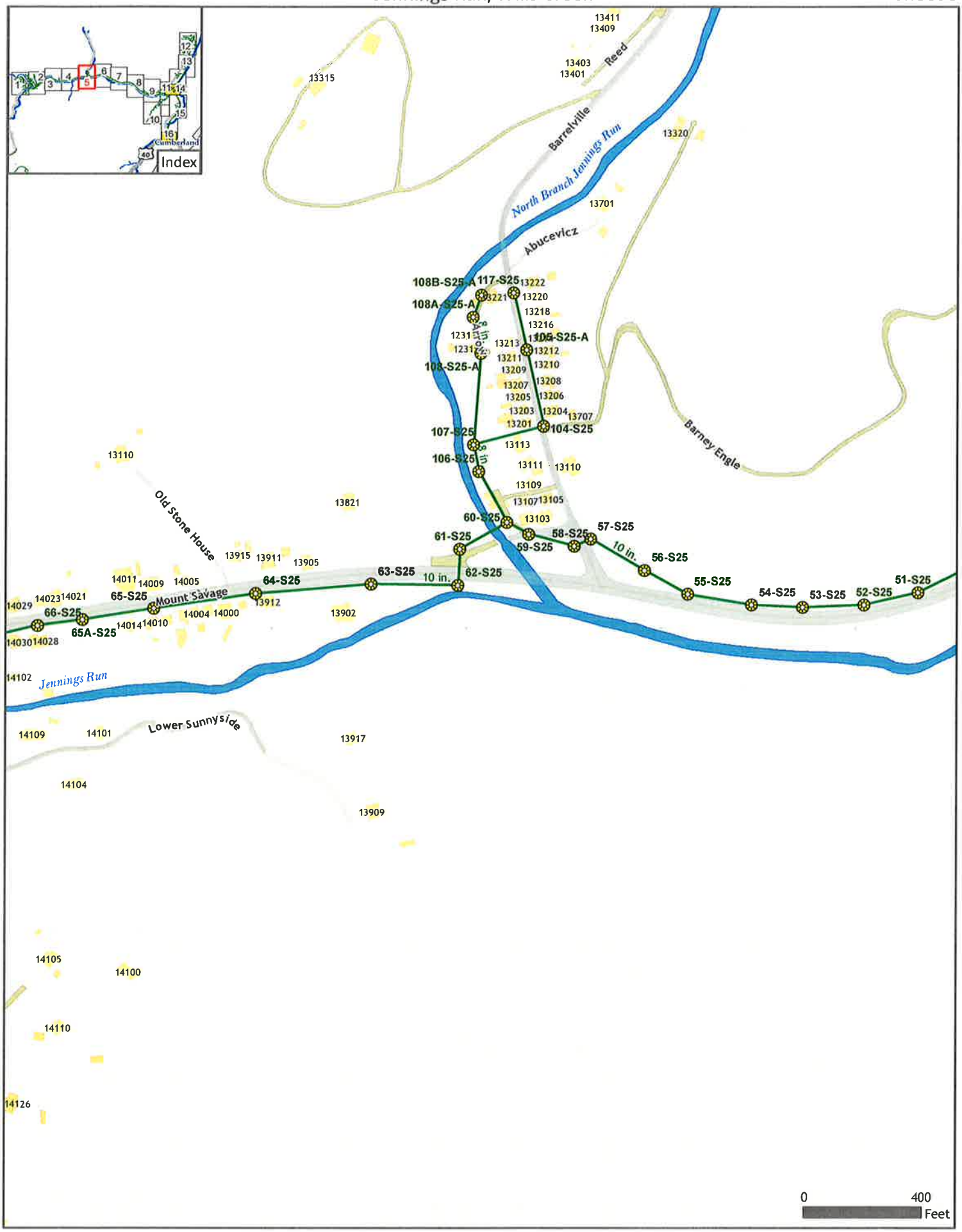
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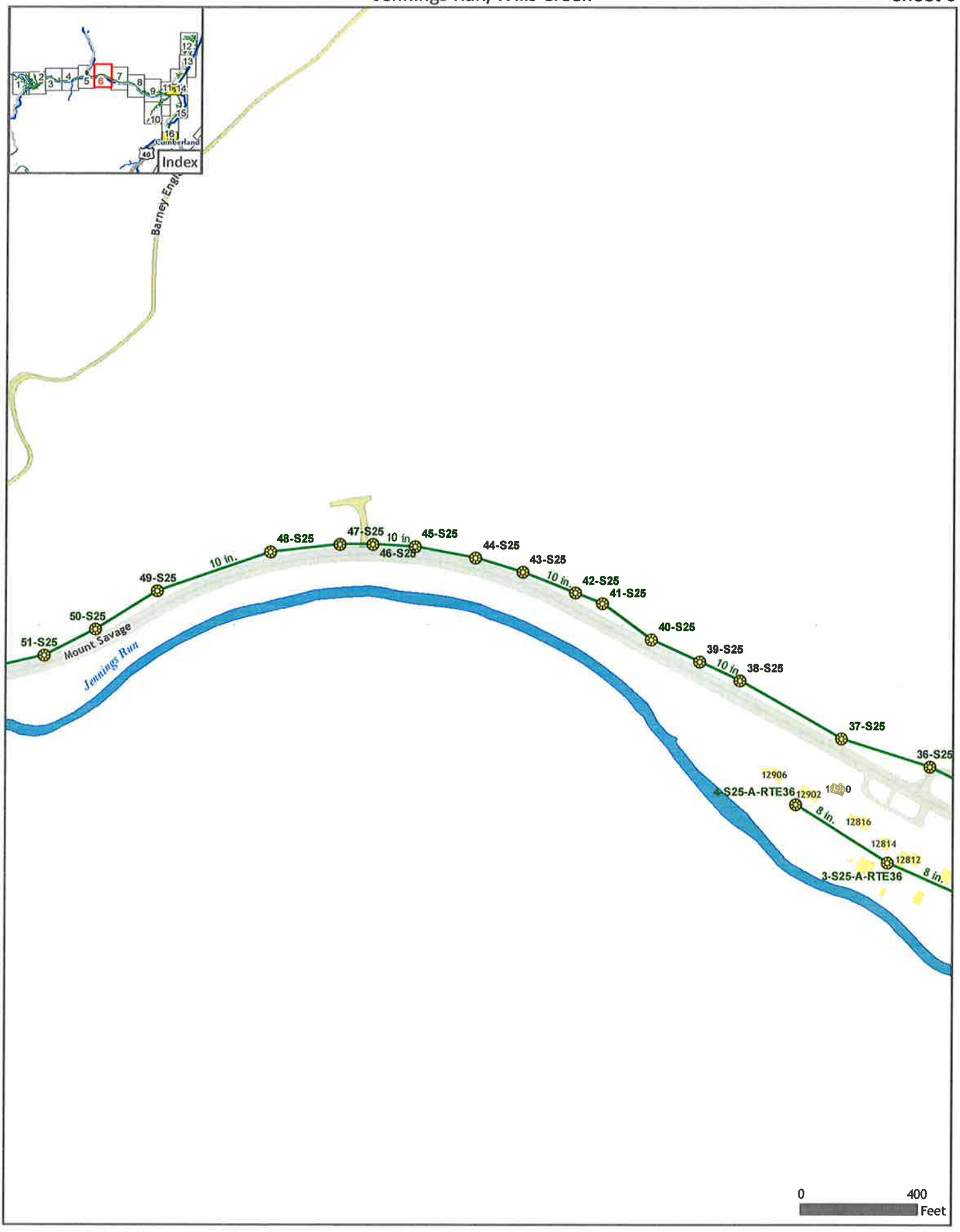
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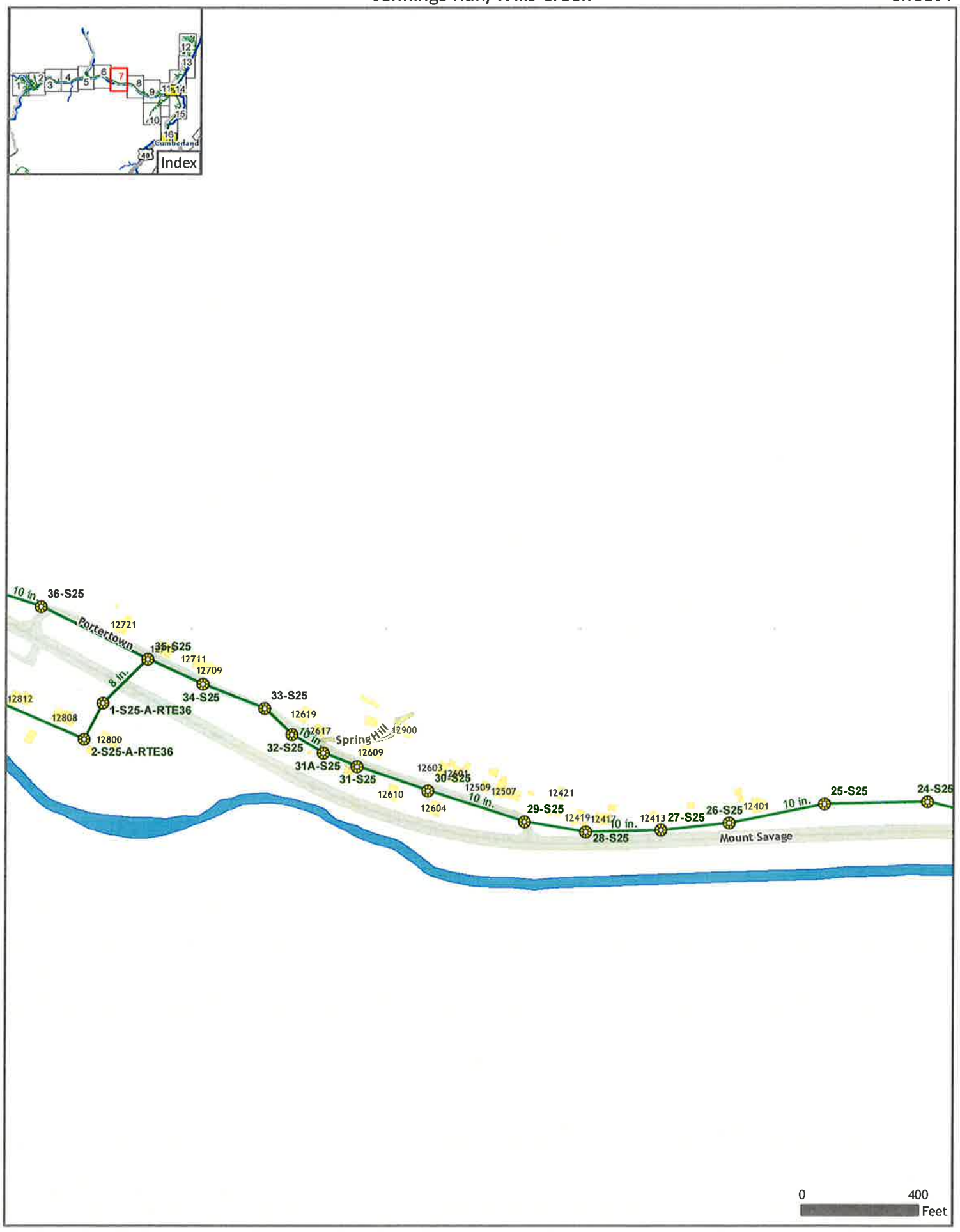
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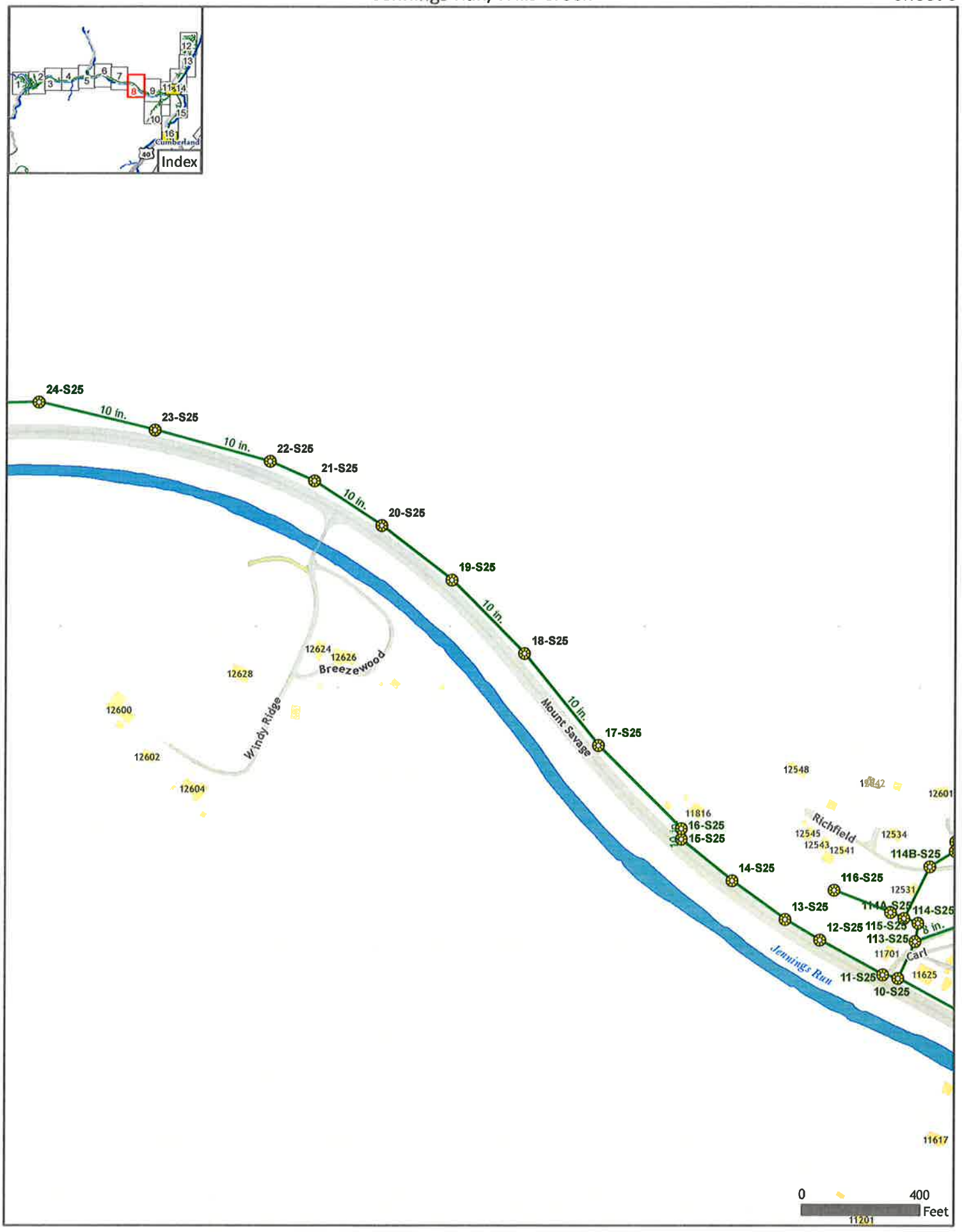
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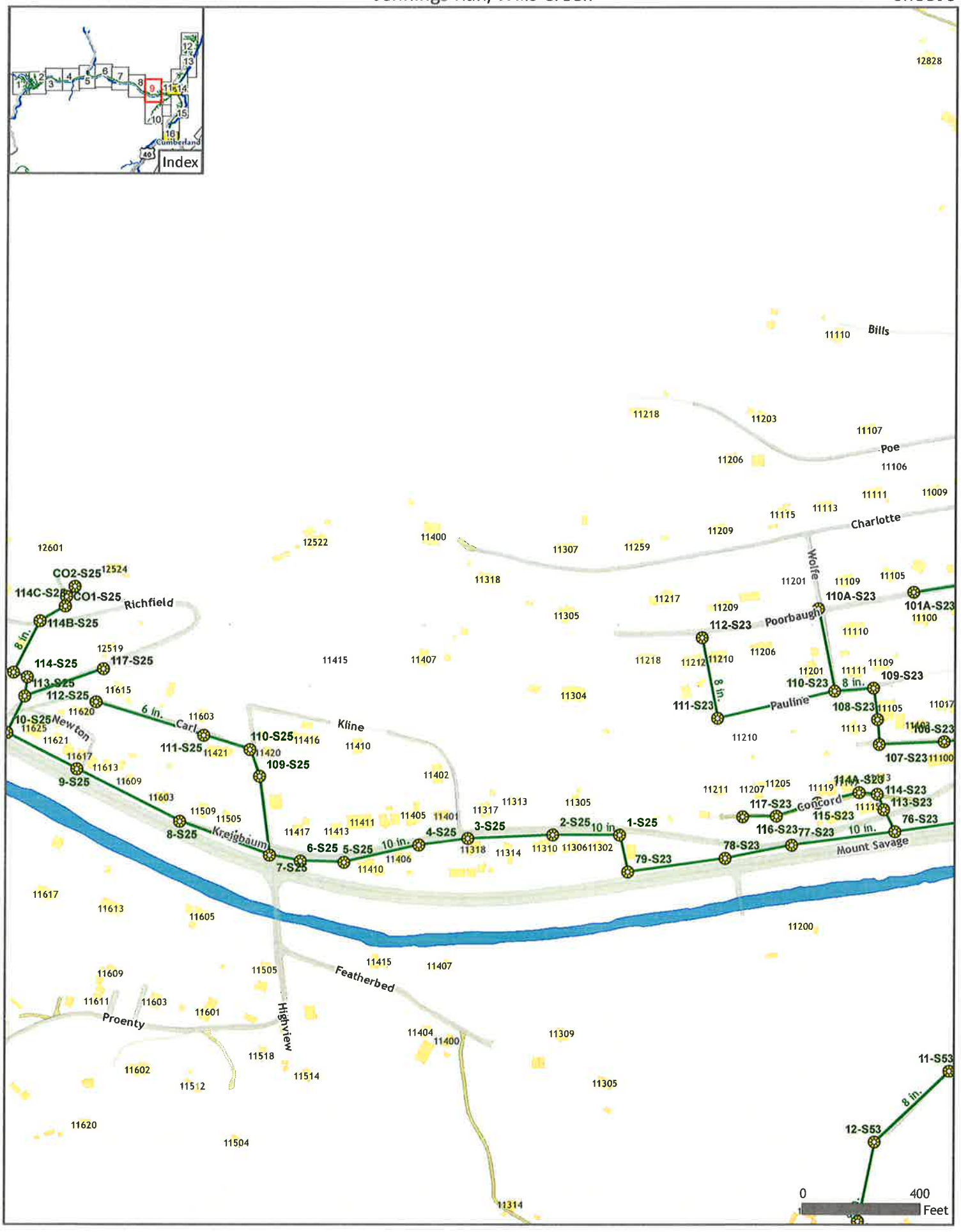
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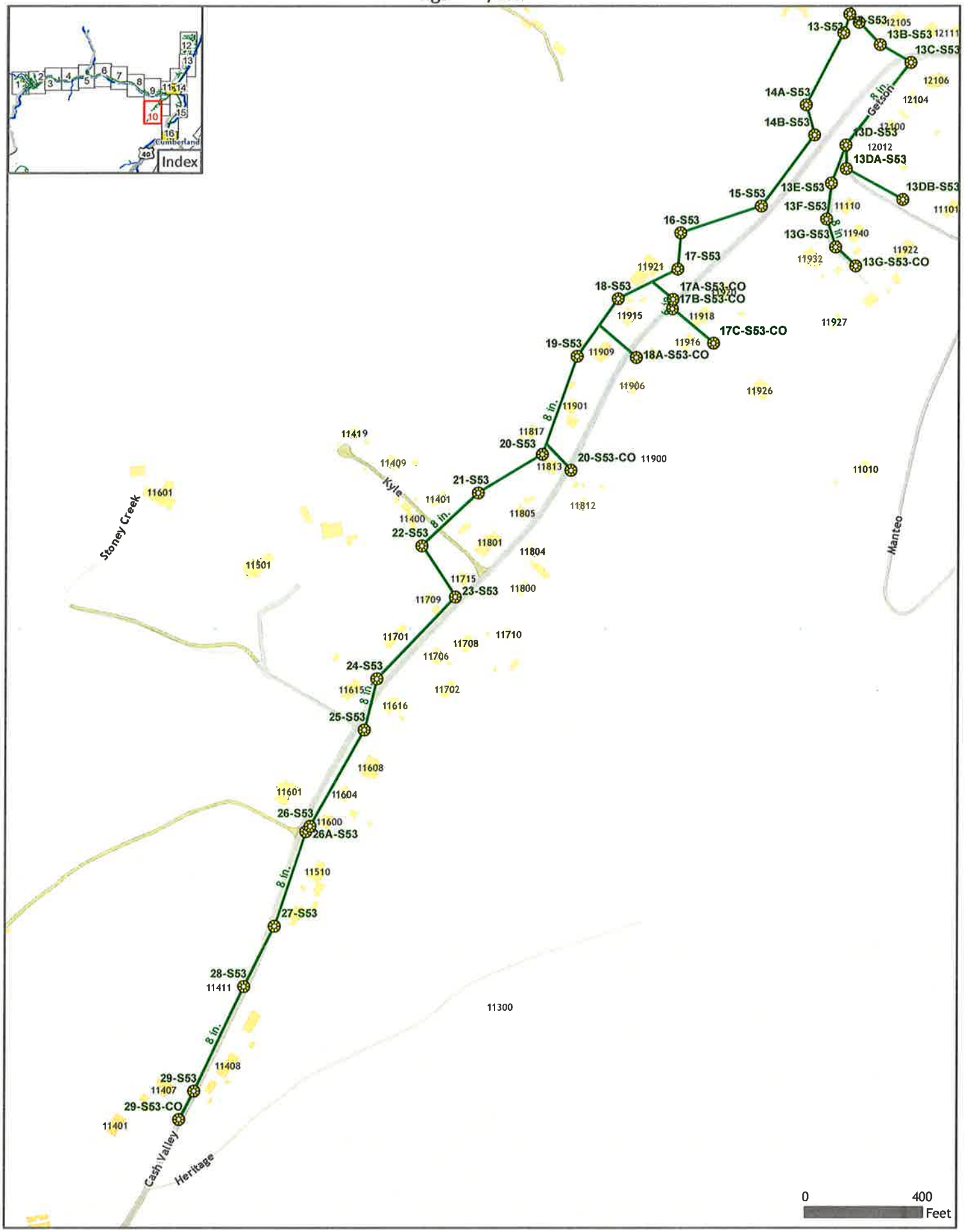
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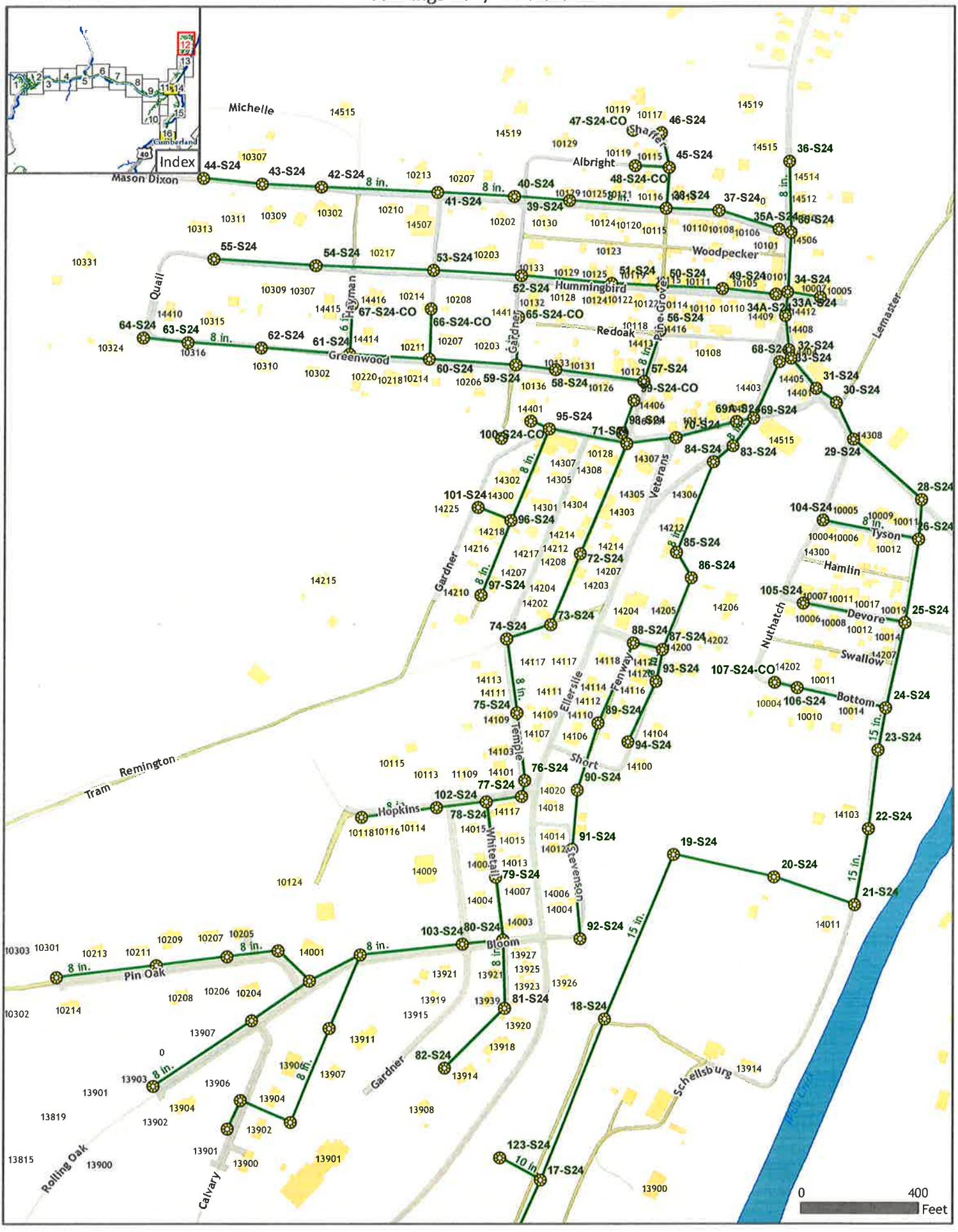
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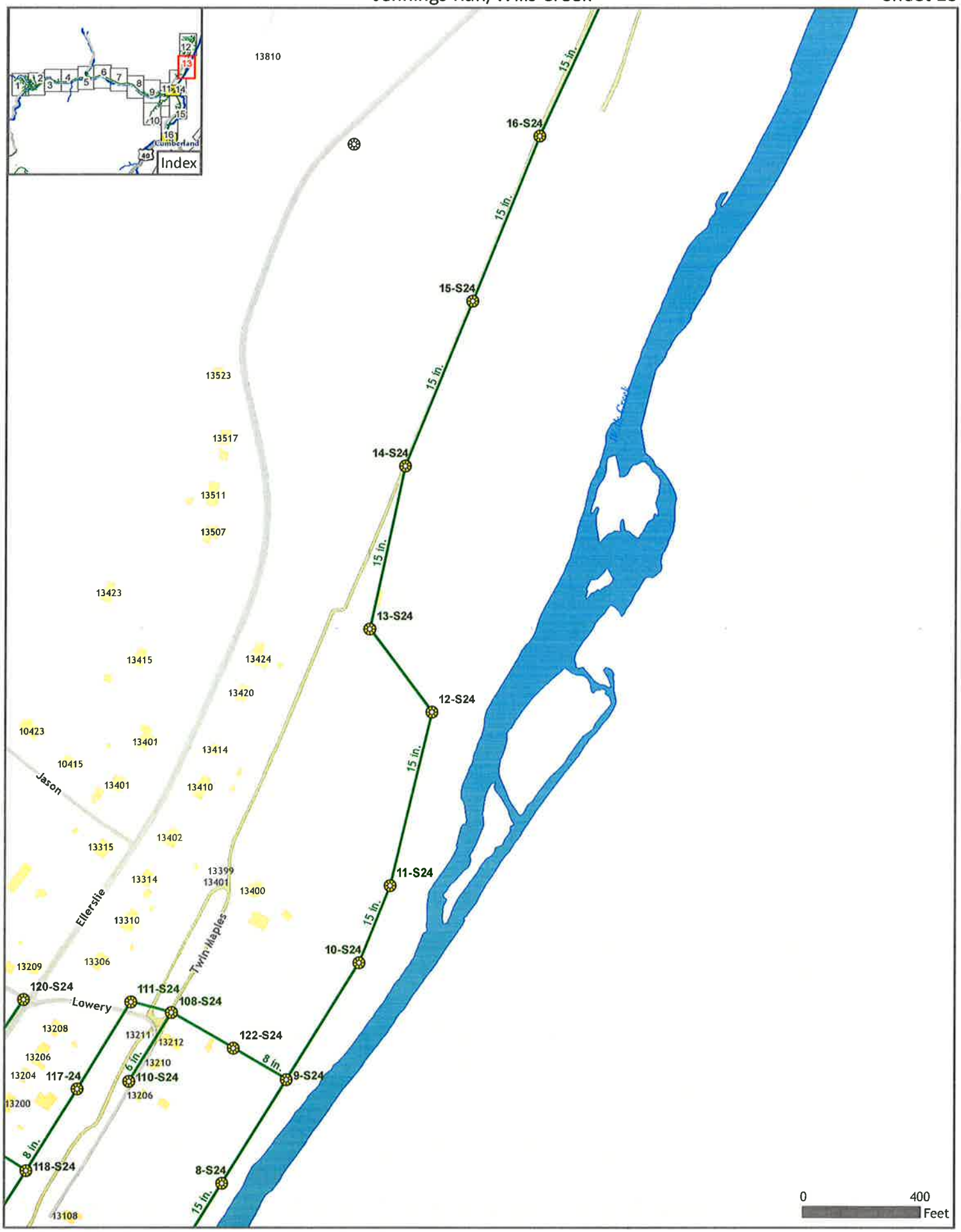
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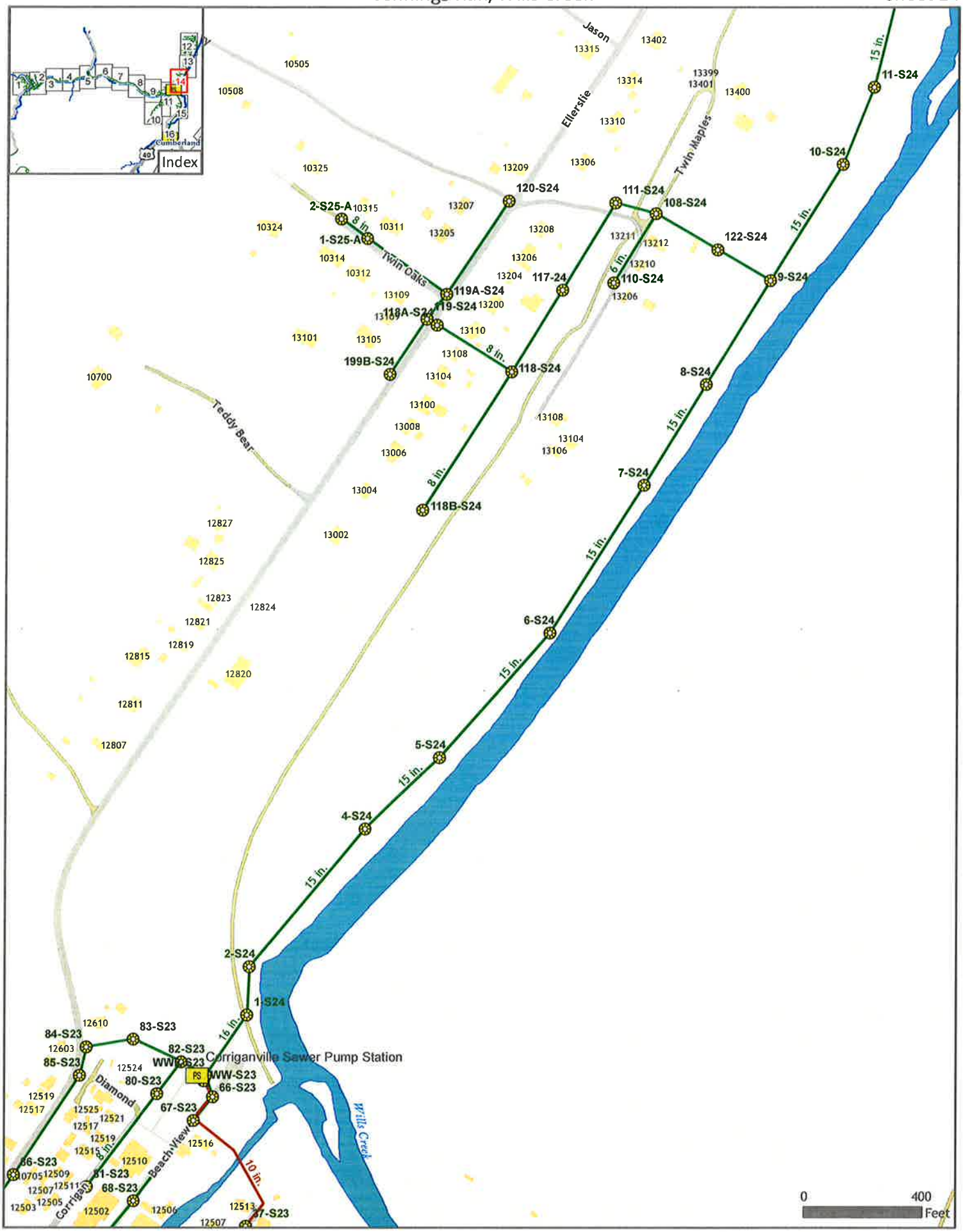
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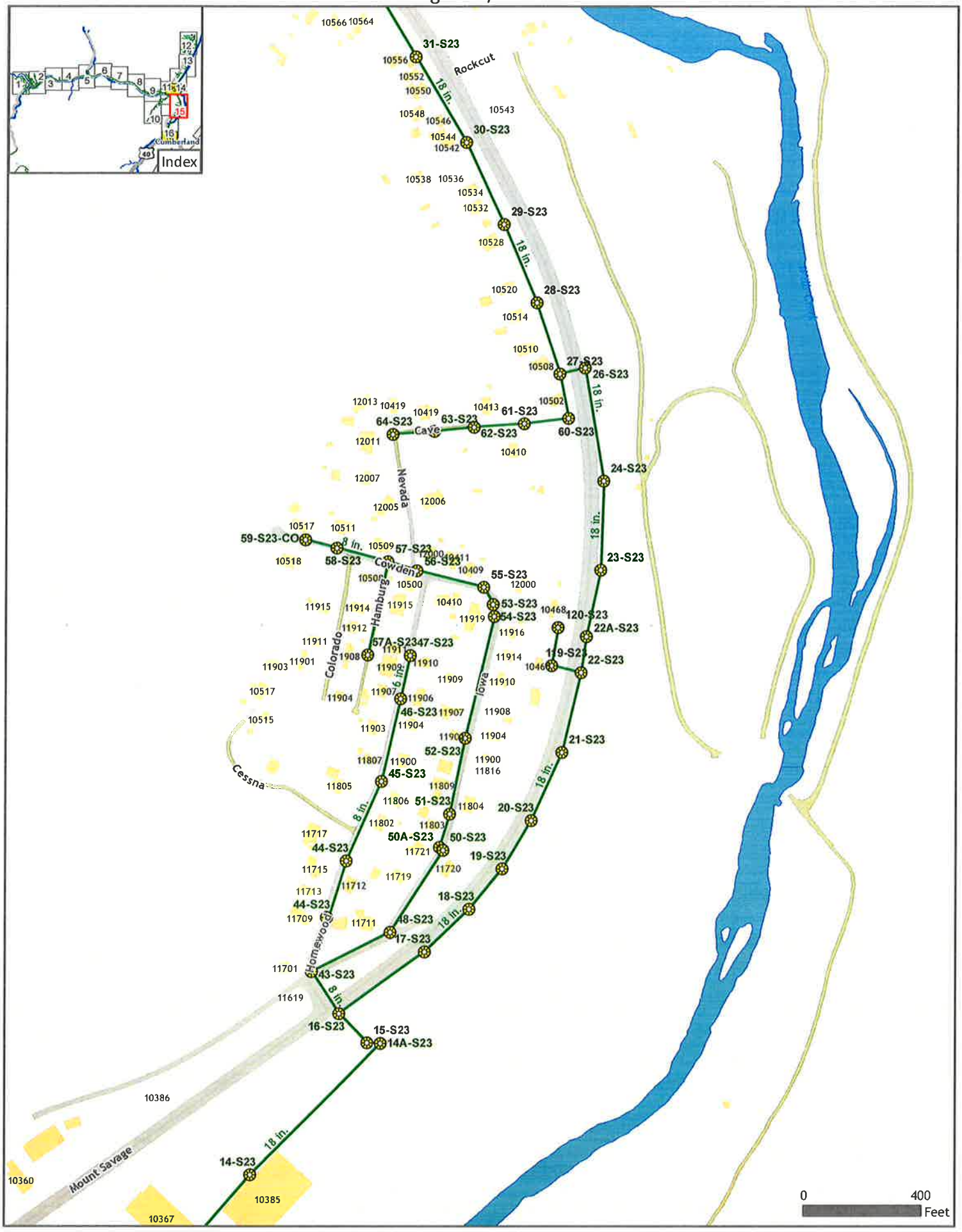
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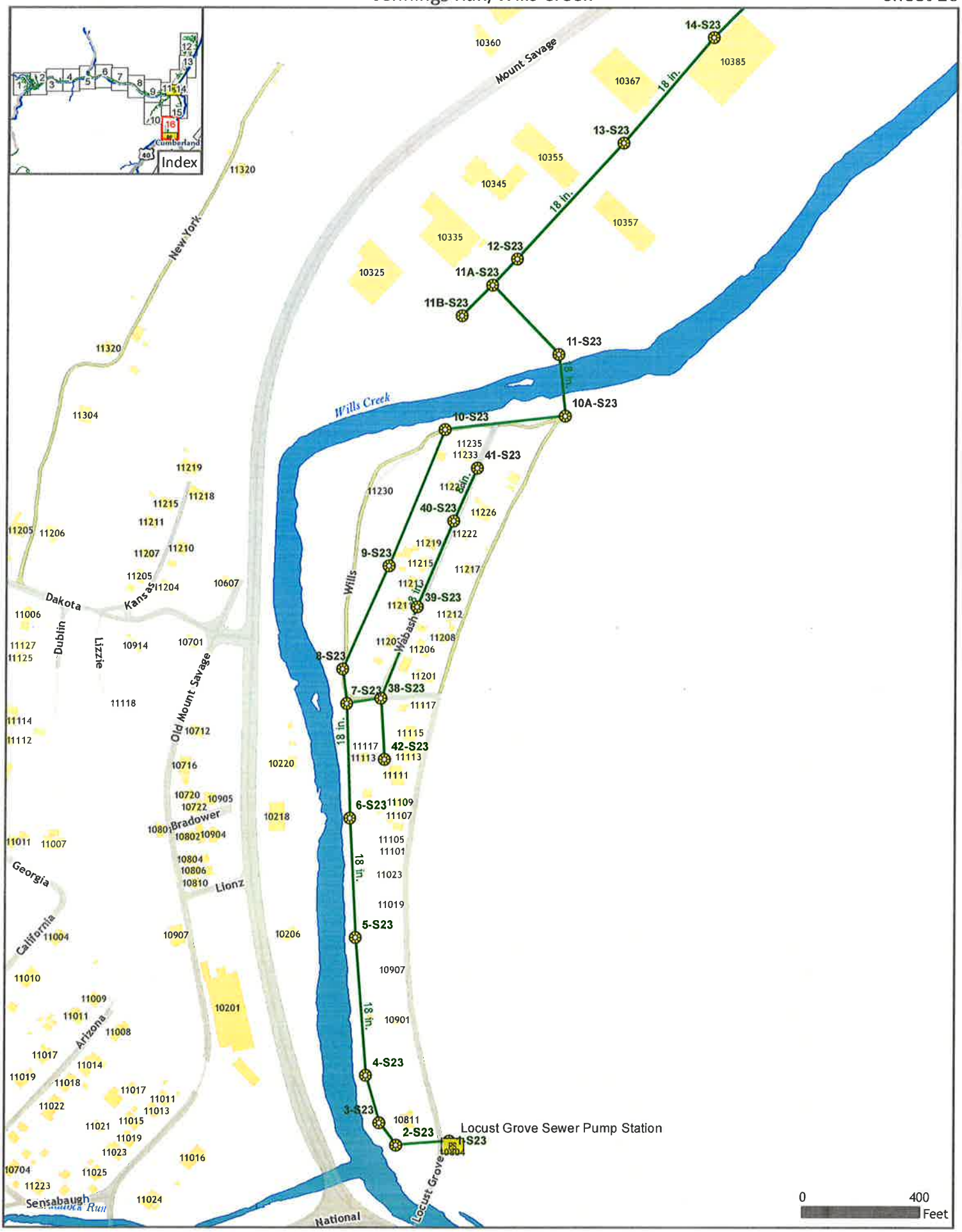
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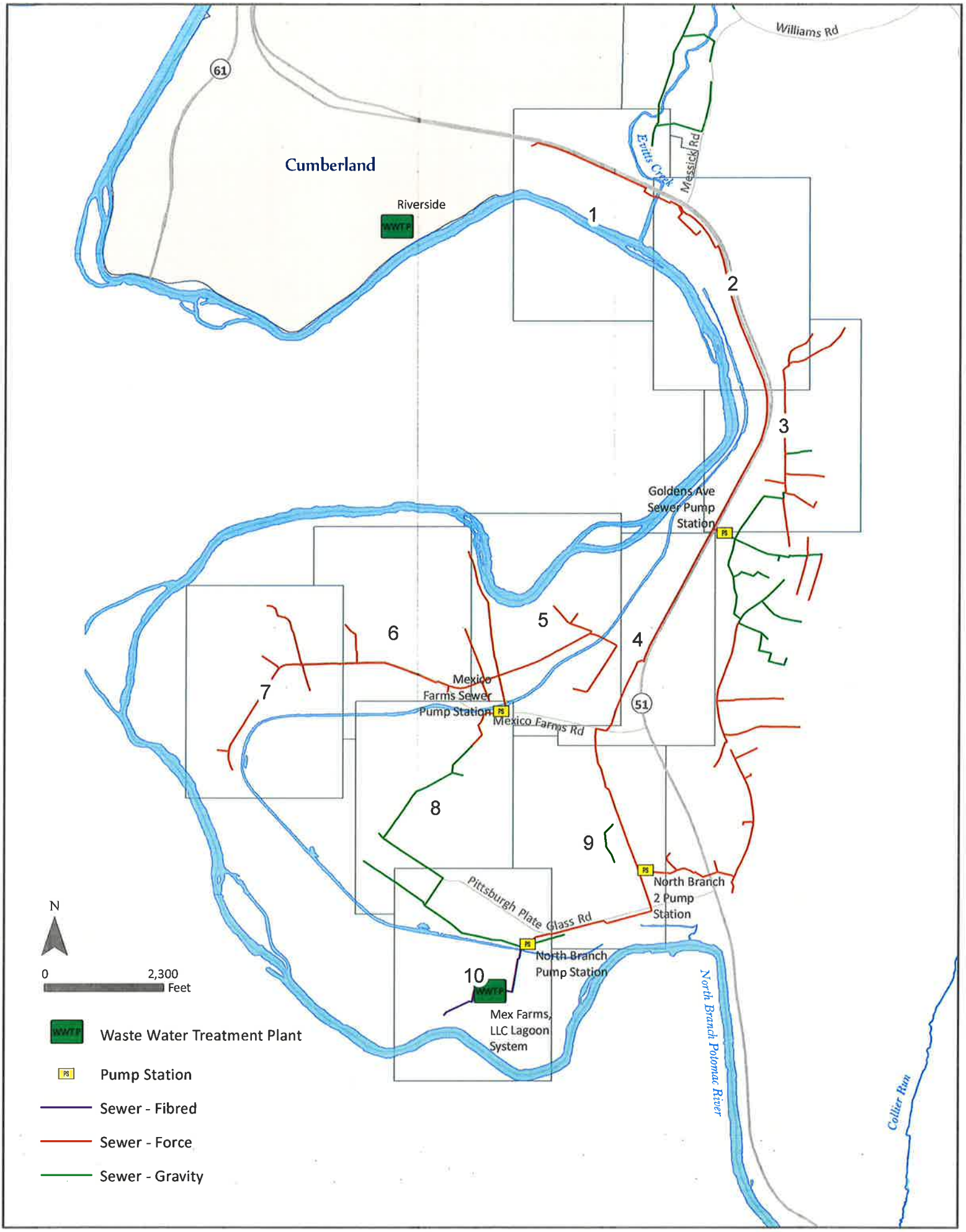

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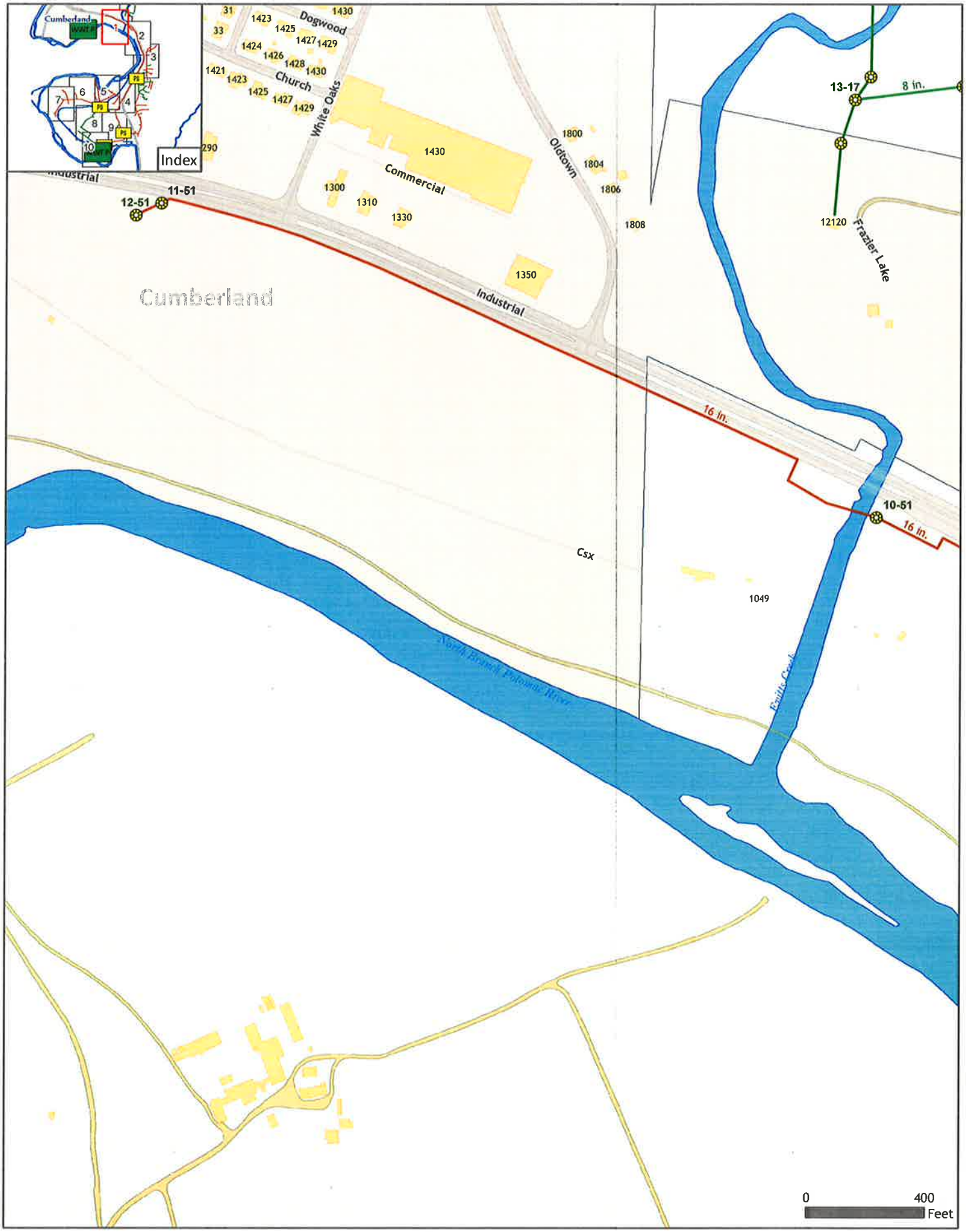
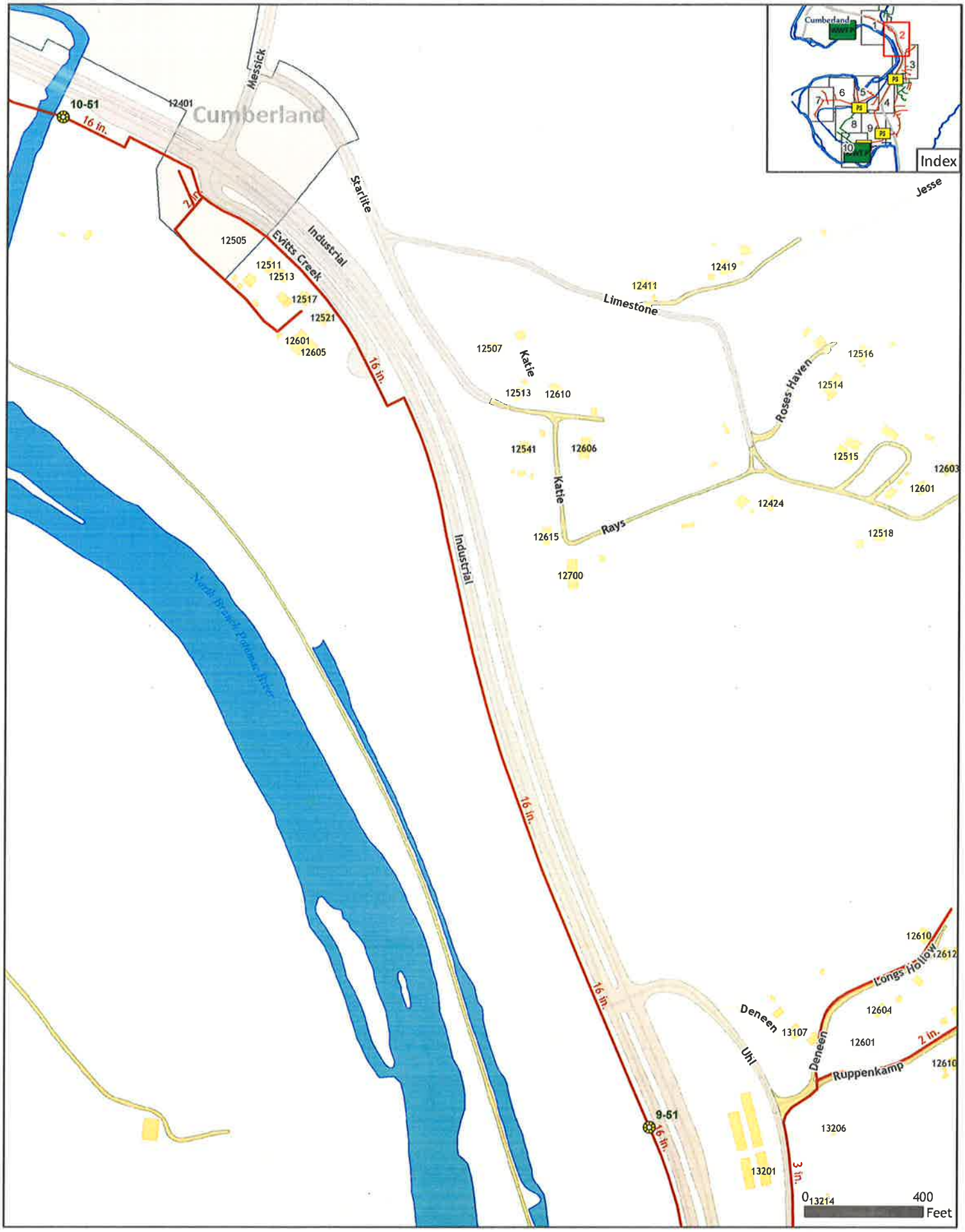
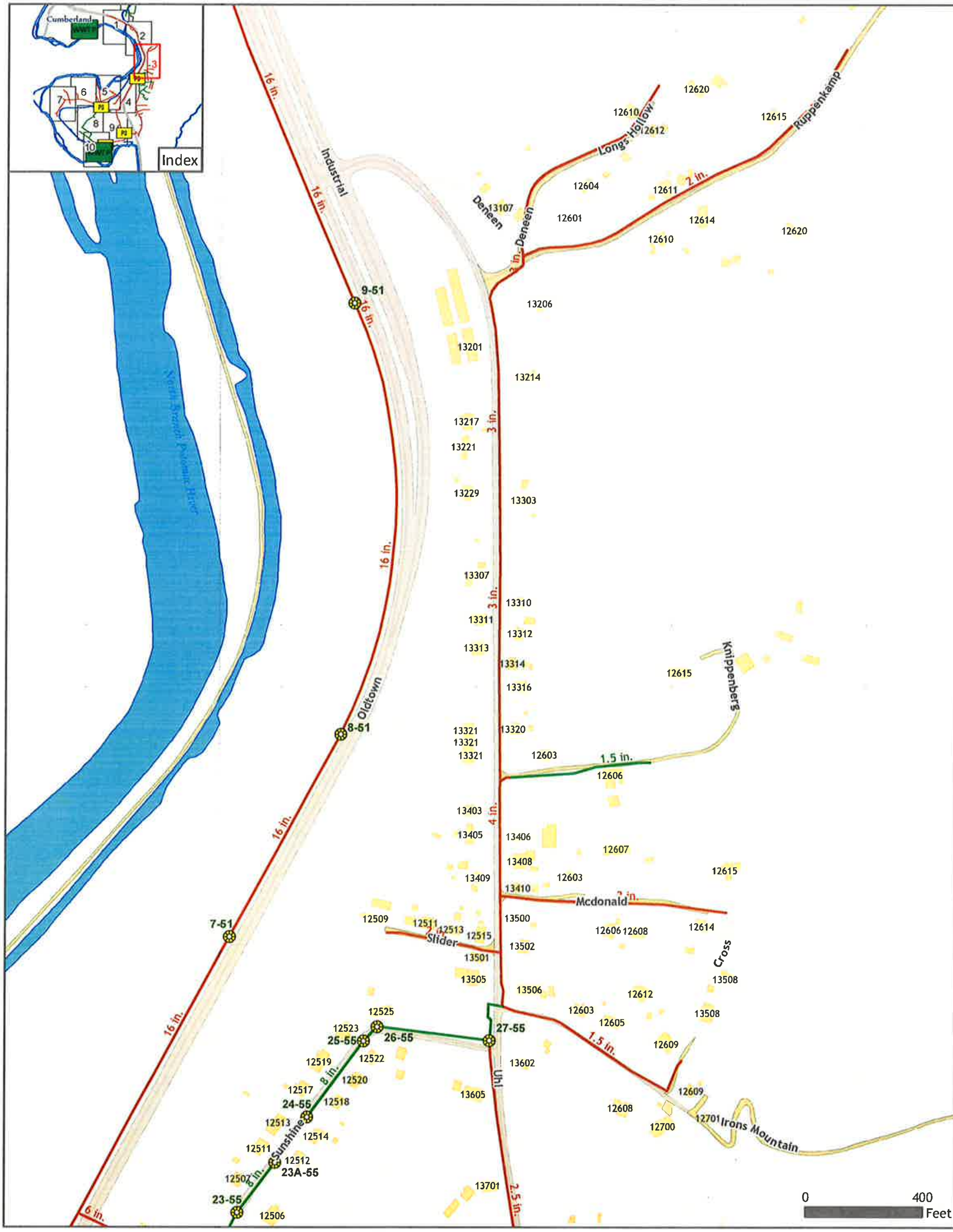


Mexico Farms

Sheet 2



Mexico Farms


Index
Cumberland
WWTP
1
2
3
4
5
6
7
8
9
10
North Branch Potomac River
Industrial
Oldtown
Deneen
Longs Hollow
Ruppenkamp
Knippenberg
Mcdonald
Slider
Cross
Uhl
Irons Mountain
Sunshine
16 in.
3 in.
2 in.
4 in.
1.5 in.
2.5 in.
8 in.
6 in.
9-51
8-51
7-51
27-55
26-55
25-55
24-55
23A-55
23-55
12620
12610
12612
12615
12604
12611
13107
12601
12614
12610
12620
13206
13201
13214
13217
13221
13229
13303
13307
13310
13311
13312
13313
13314
13316
12615
13321
13321
13321
13320
12603
12606
13403
13405
13406
12607
13408
13409
12603
12615
13410
12509
12511
12513
12515
13500
12606 12608
12614
13502
13501
13505
13506
13508
12612
12603
12605
13508
12525
12523
12522
12609
12519
13602
12520
12517
12518
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12608
12513
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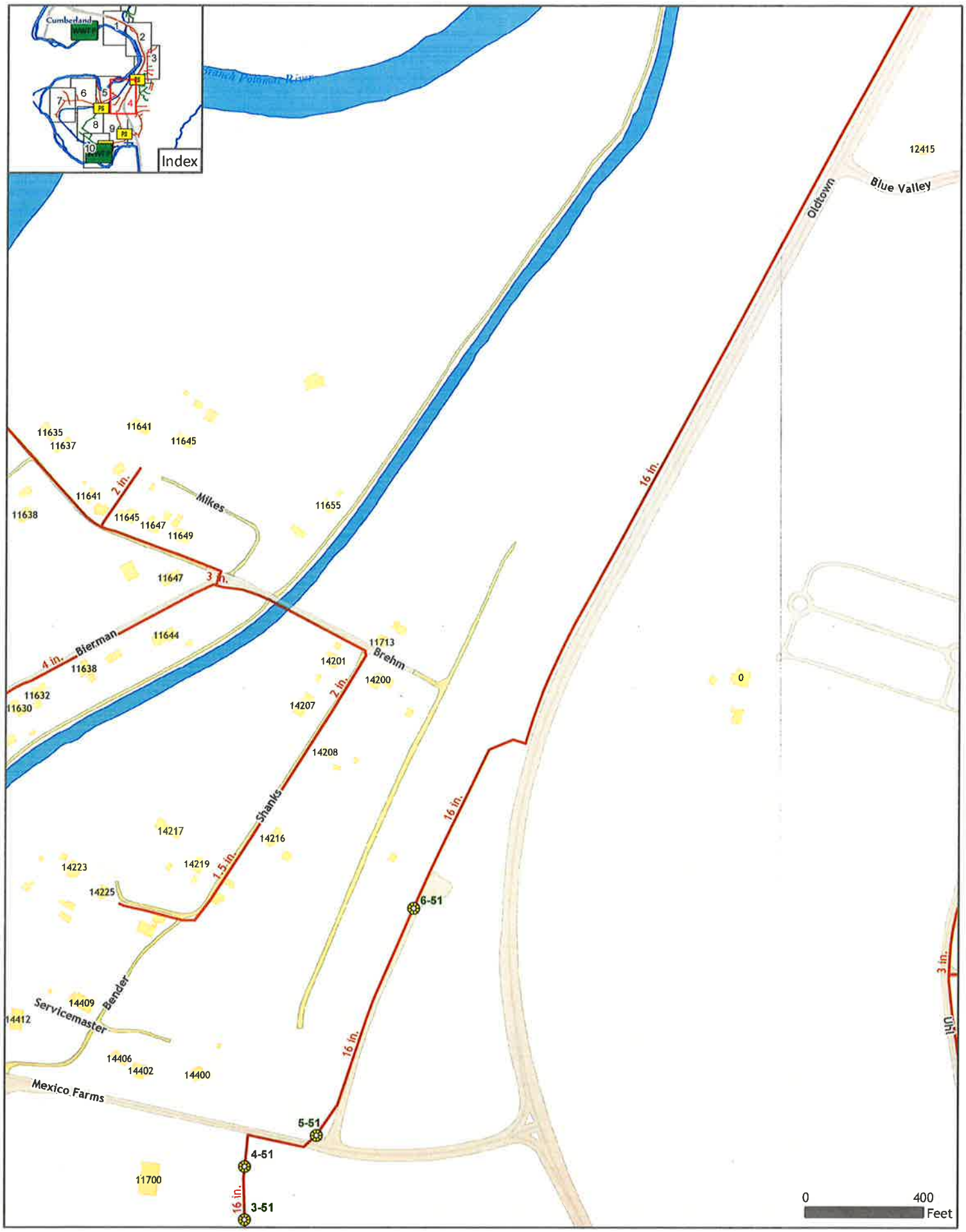
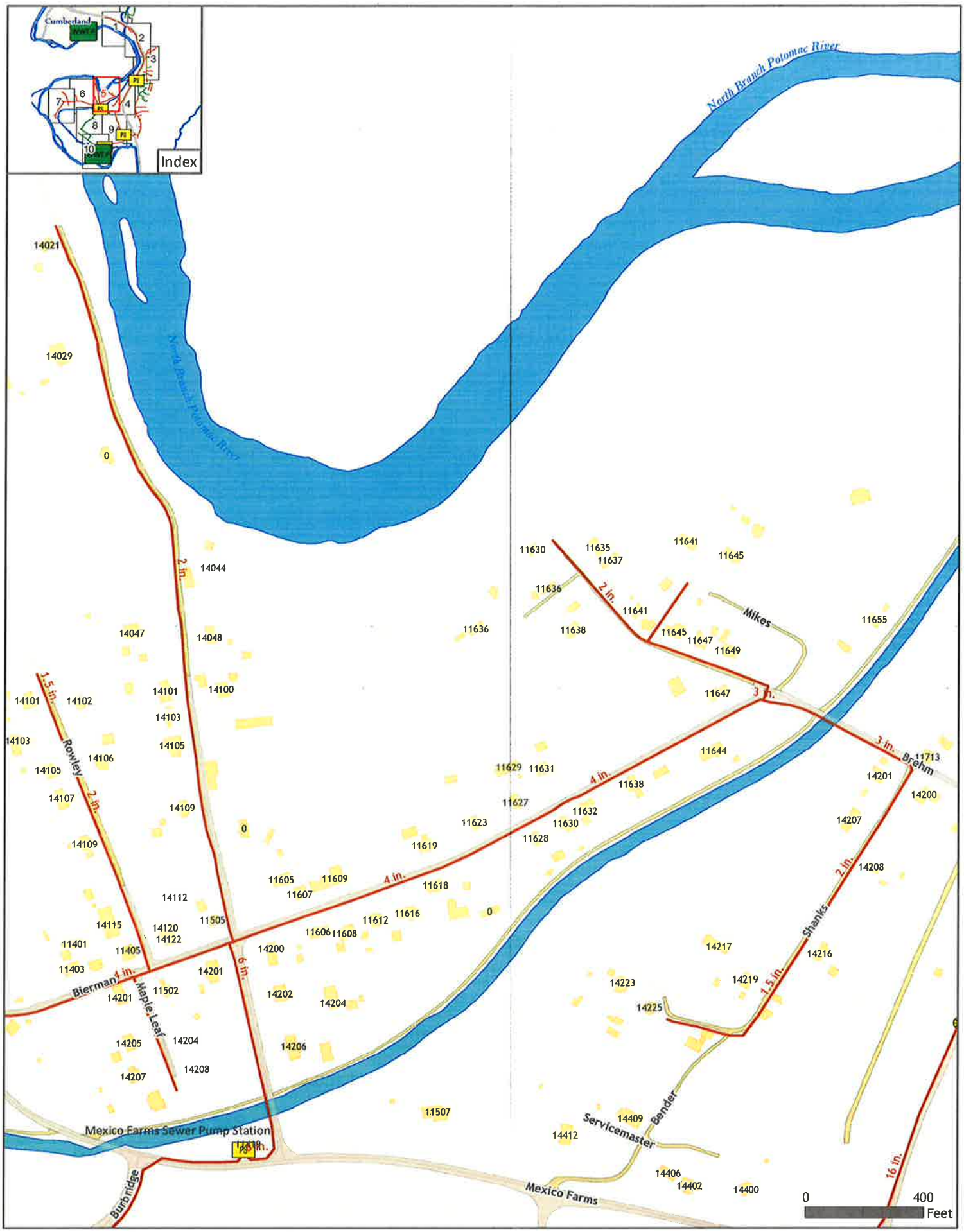
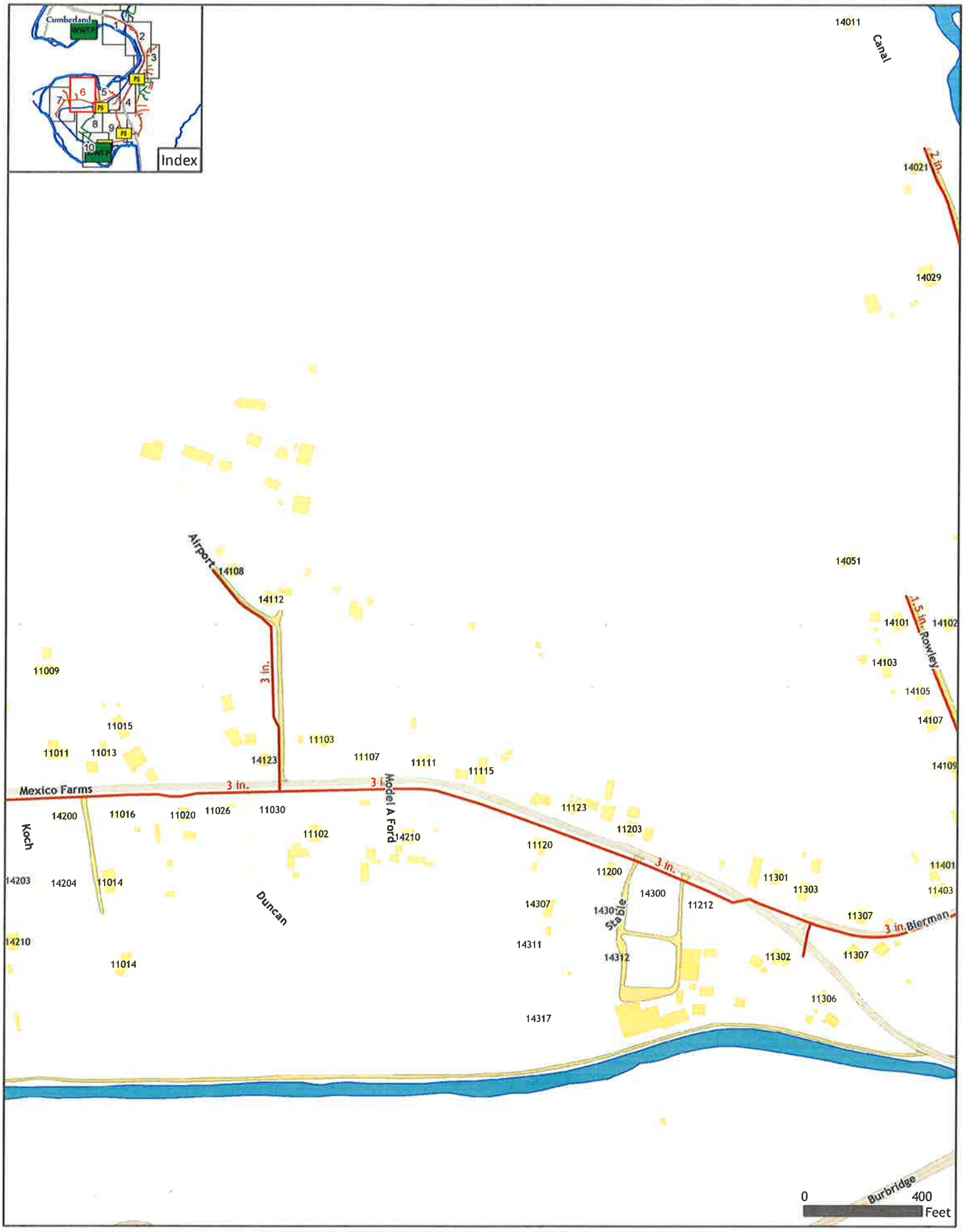
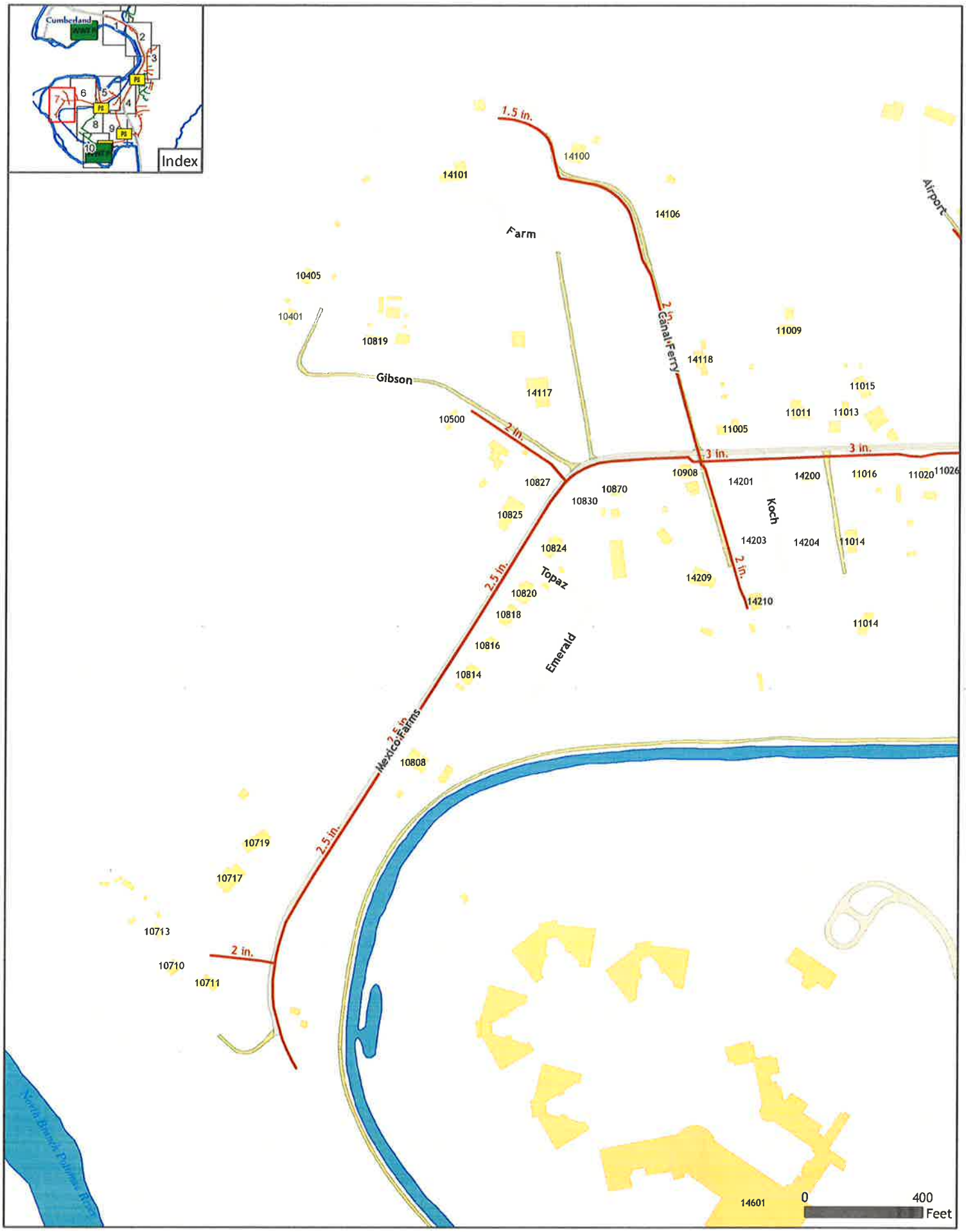
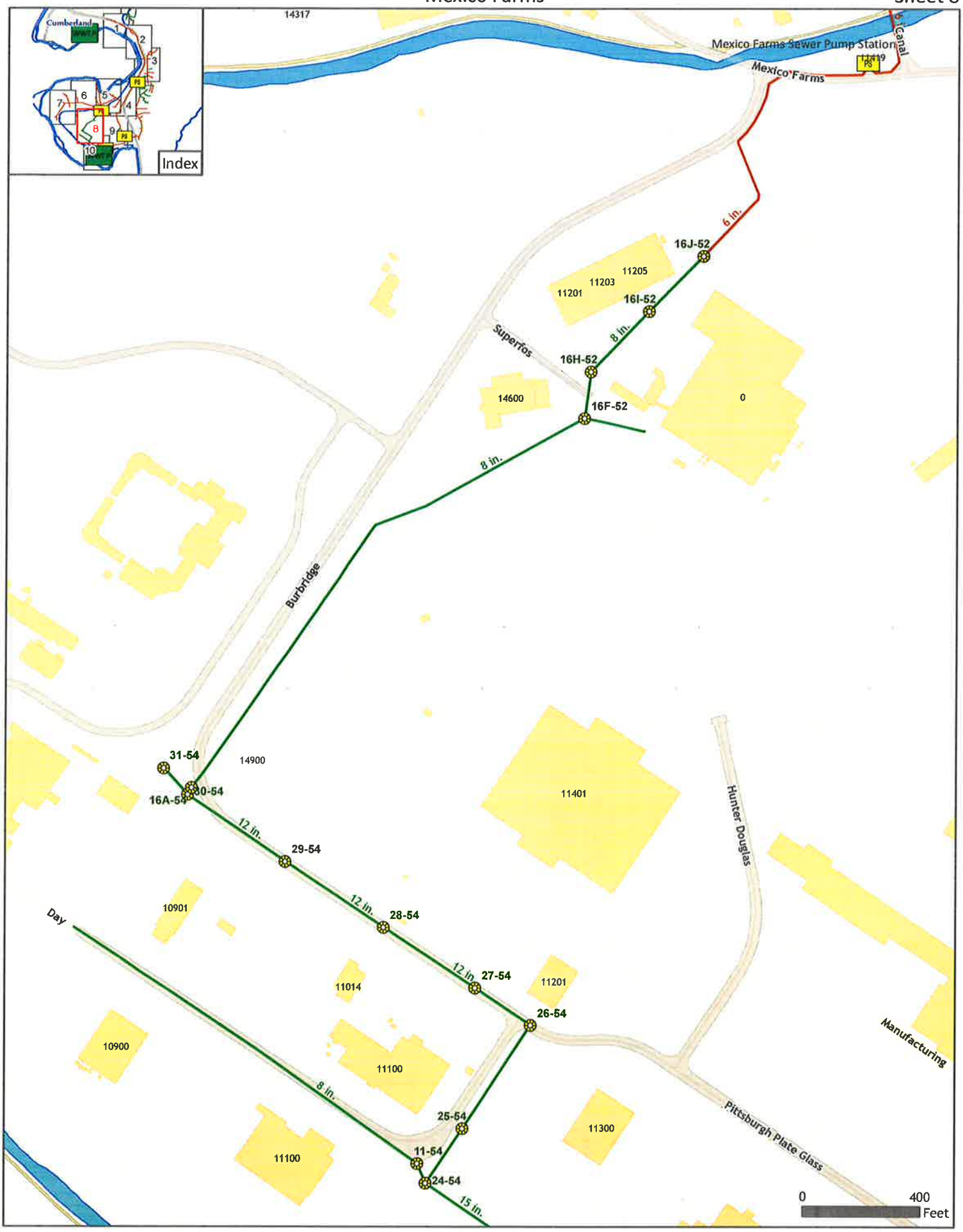
12700
12701
12511
12512
12507
13701
12506
0
400
Feet

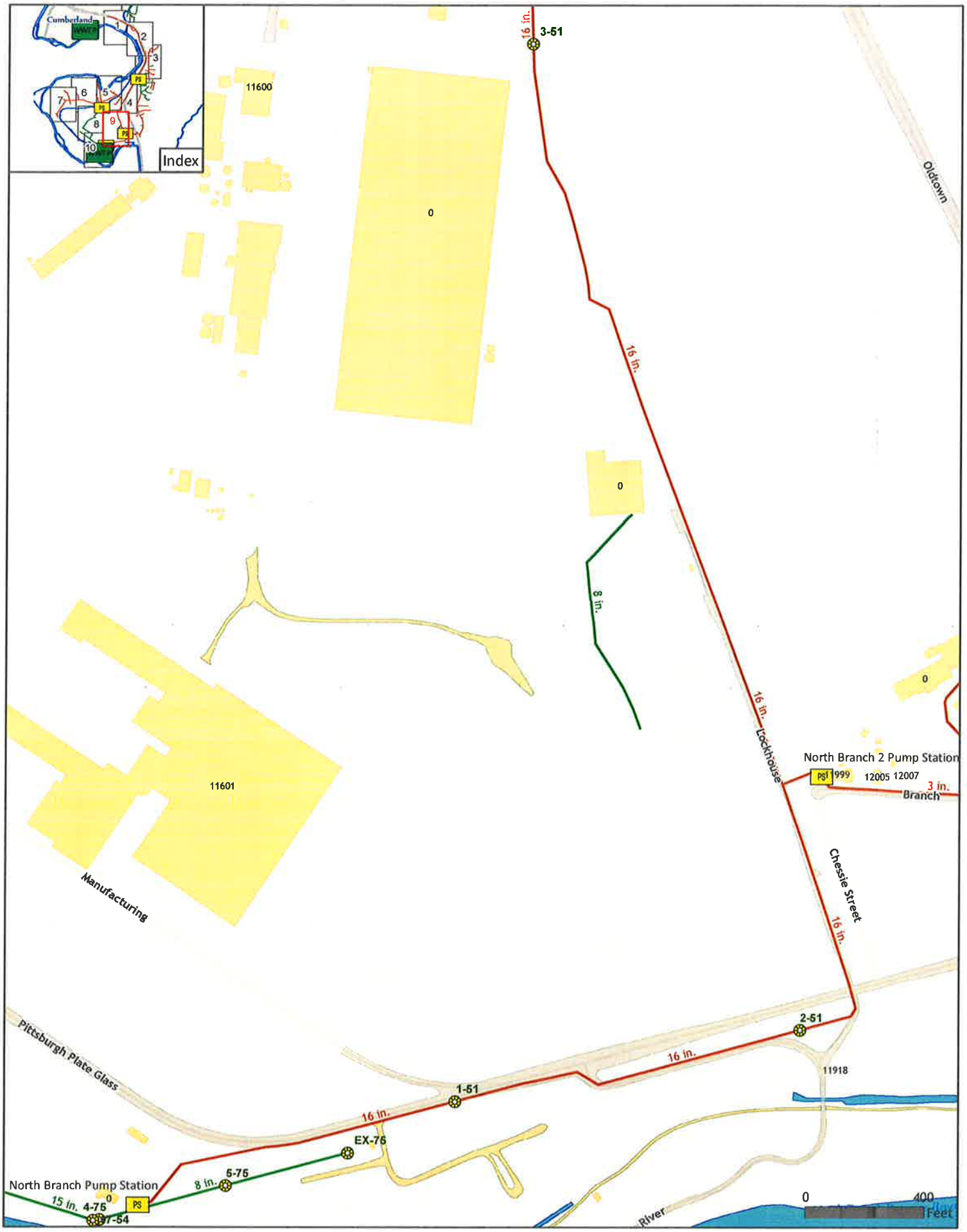

Index
Cumberland
Branch Potomac River
12415
Oldtown
Blue Valley
16 in.
11635
11637
11641
11645
11641
2 in.
Mikes
11638
11645
11647
11649
11655
11647
3 in.
4 in.
Bierman
11644
11638
11632
11630
11713
Brehm
14201
14200
2 in.
14207
14208
Shanks
14217
14216
14223
14219
1.5 in.
14225
6-51
16 in.
16 in.
14409
Servicemaster
Bender
14412
14406
14402
14400
Mexico Farms
5-51
4-51
11700
16 in.
3-51
0
3 in.
0
400
Feet


Cumberland WWTP
Index
North Branch Potomac River
Mexico Farms Sewer Pump Station
Rowley
Bierman
Maple Leaf
Burbridge
Mikes
Brehm
Shanks
Bender
Servicemaster
Mexico Farms
2 in.
3 in.
4 in.
6 in.
1.5 in.
16 in.
0
400
Feet


Cumberland
WWTP
1
2
3
4
5
6
7
8
9
10
P1
P2
P3
P4
Index
14011
Canal
2 in.
14021
14029
14051
Airport
14108
14112
3 in.
11009
11015
11011
11013
14123
11103
11107
11111
11115
Mexico Farms
3 in.
3 in.
Model A Ford
14200
11016
11020
11026
11030
11102
14210
Koch
14203
14204
11014
Duncan
14210
11014
11123
11203
11120
11200
3 in.
11301
11303
11403
14307
14300
11212
14308
Stable
11307
3 in. Bierman
14311
14312
11302
11307
11306
14317
14101
14102
1.5 in. Rowley
14103
14105
14107
14109
11401
0
400
Feet
Burbridge

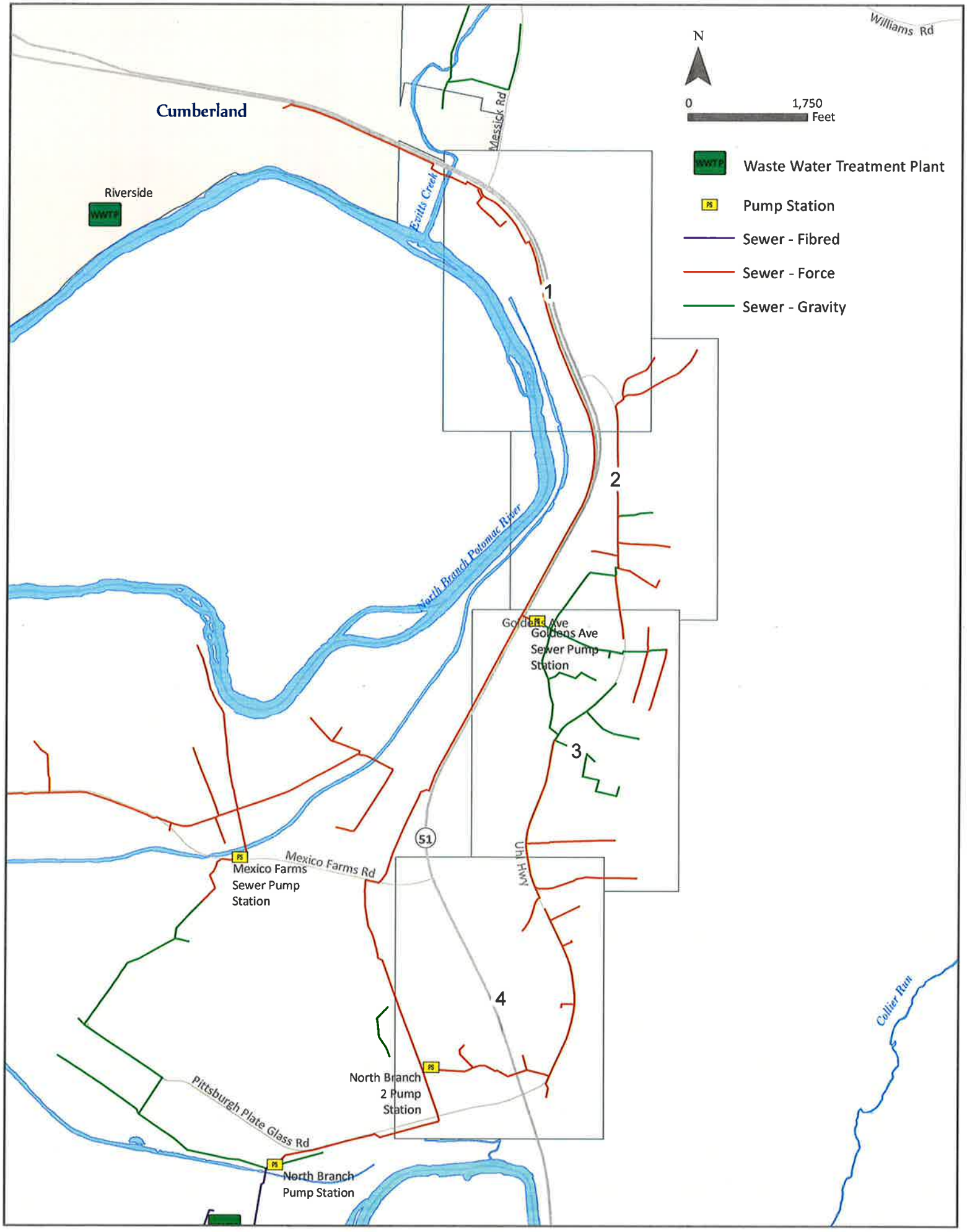

Index
1.5 in.
14100
14101
14106
Farm
Airport
10405
10401
10819
Gibson
2 in.
Canal Ferry
11009
14118
14117
11015
11011
11013
10500
2 in.
11005
3 in.
3 in.
10908
14201
14200
11016
11020
11026
10827
10870
10830
Koch
10825
14203
14204
11014
10824
2.5 in.
Topaz
14209
2 in.
10820
14210
10818
11014
10816
Emerald
10814
2.5 in.
Mexico Farms
10808
10719
10717
2.5 in.
10713
2 in.
10710
10711
14601
0
400
Feet

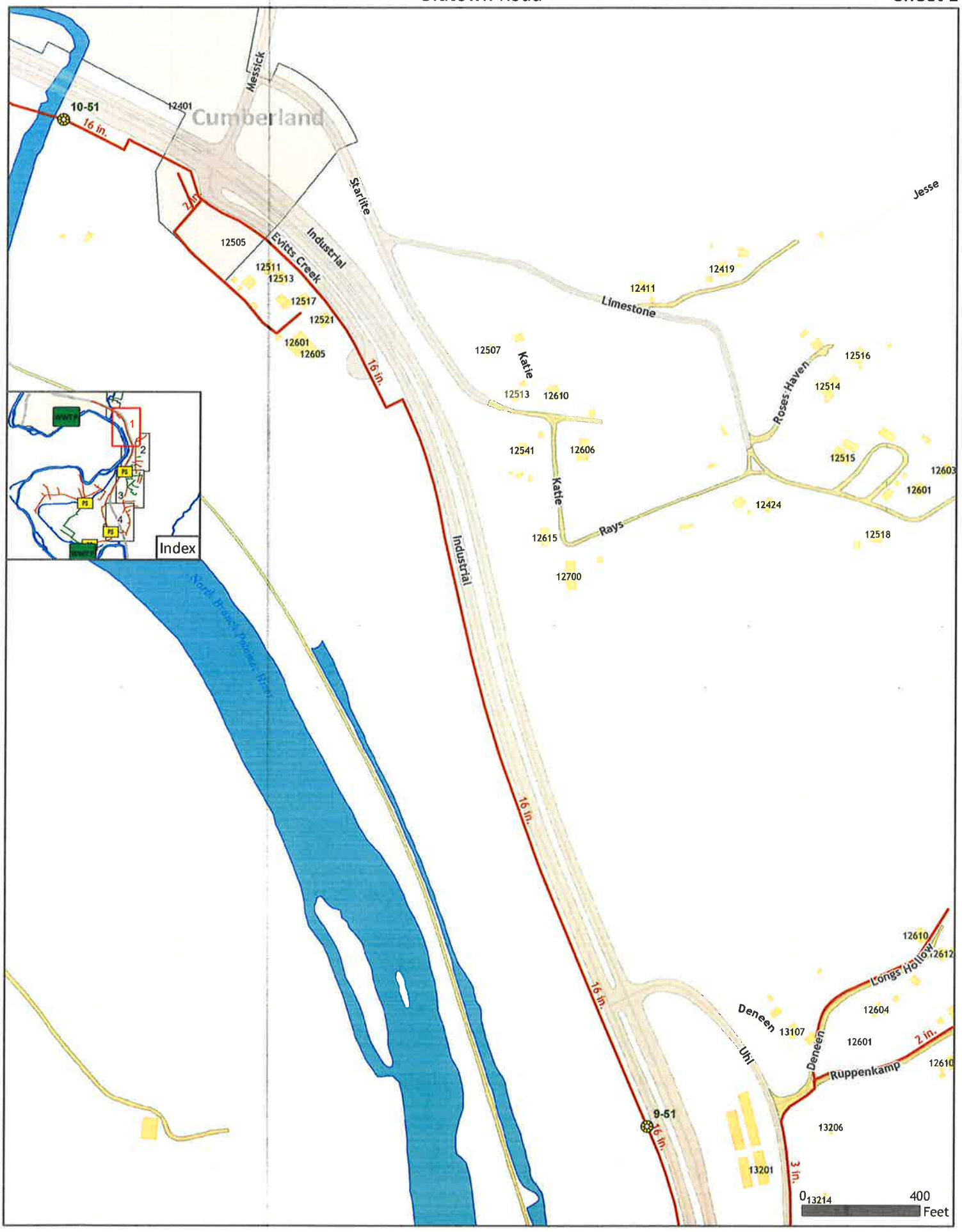

Index
14317
Mexico Farms Sewer Pump Station
11419
Mexico Farms
6" Canal
6 in.
16J-52
11205
11203
11201
16I-52
8 in.
Superfos
16H-52
14600
16F-52
0
8 in.
Burbridge
31-54
14900
16A-54
30-54
12 in.
29-54
11401
Hunter Douglas
10901
Day
12 in.
28-54
12 in.
27-54
11201
11014
26-54
10900
11100
Manufacturing
8 in.
25-54
11300
Pittsburgh Plate Glass
11-54
11100
24-54
15 in.
0
400
Feet

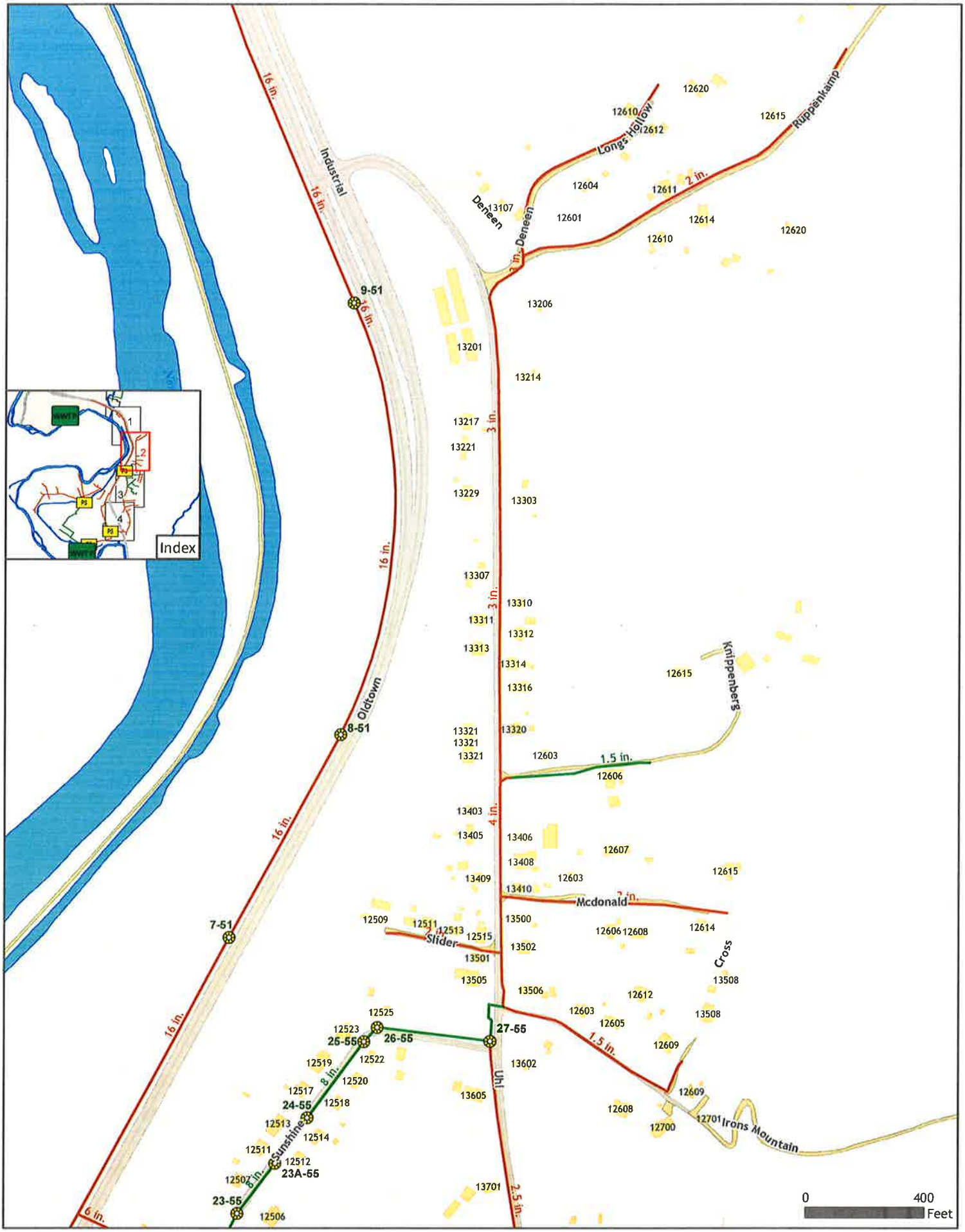

Cumberland WWTP
1
2
3
4
5
6
7
8
9
10
PS
PS
PS
WWTP
Index
11600
0
16 in.
3-51
16 in.
Oldtown
0
8 in.
0
16 in.
Lockhouse
North Branch 2 Pump Station
PS
999
12005 12007
3 in.
Branch
11601
Manufacturing
Chessie Street
16 in.
2-51
16 in.
11918
Pittsburgh Plate Glass
1-51
16 in.
EX-76
8 in.
5-75
North Branch Pump Station
15 in.
4-75
0
PS
7-54
River
0
400
Feet


Cumberland
WWTP
Index
27-54
12 in.
26-54
25-54
11-54
24-54
23-54
15 in.
22-54
21-54
20-54
15 in.
19-54
18-54
11201
11300
11400
11600
11601
11100
11116
Hunter Douglas
Pittsburgh Plate Glass
Manufacturing
North Branch Pump Station
PS
16 in.
5-75
4-75
17-54
10 in.
3-75
River
10 in.
2-75
1-75
Mex Farms, LLC Lagoon System
WWTP
3A-75
2A-75
8 in.
O.F.3-75
1A-75
O.F.2-75
O.F.1-75
North Branch Potomac River
0
100
Feet

Oldtown Road Index

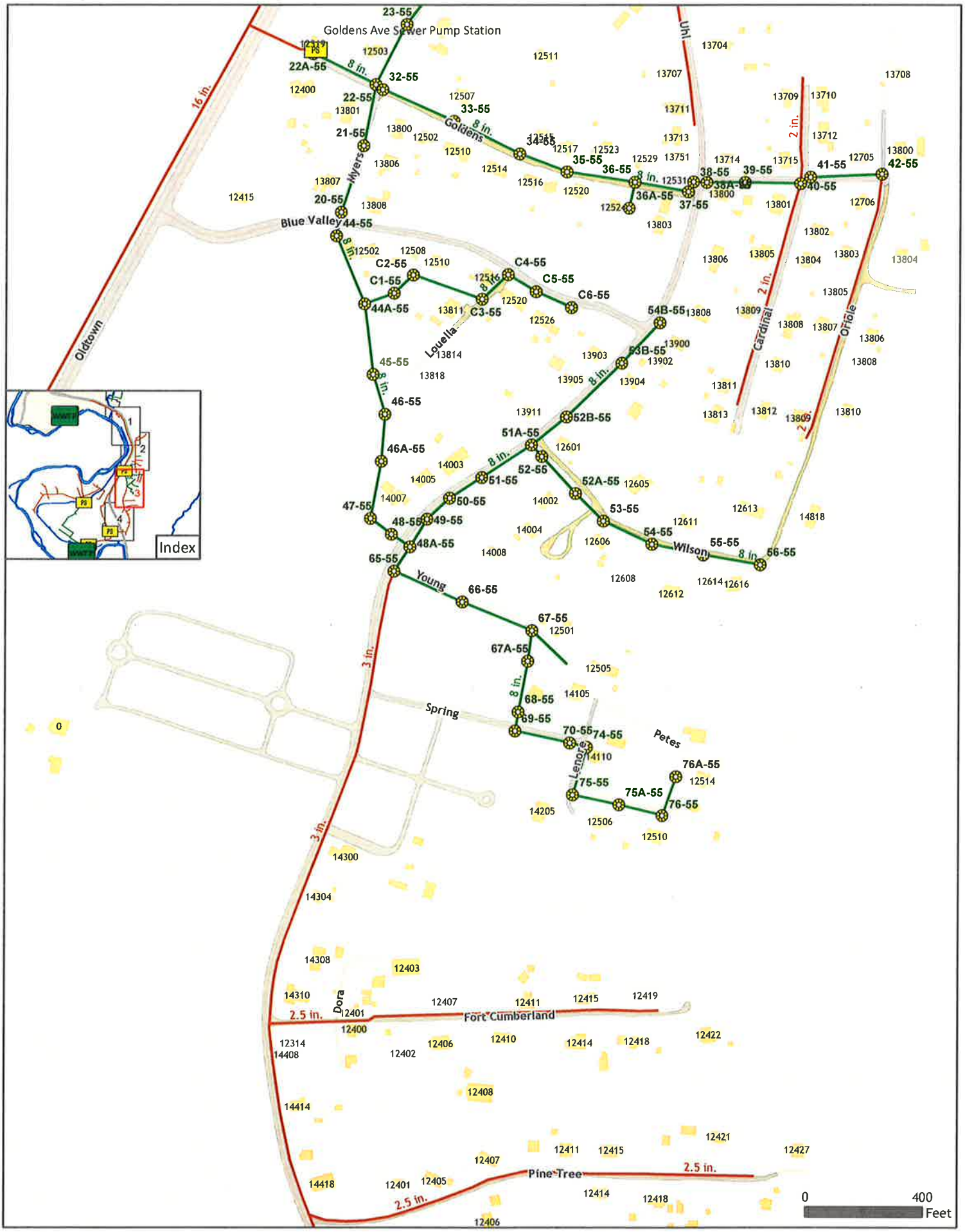


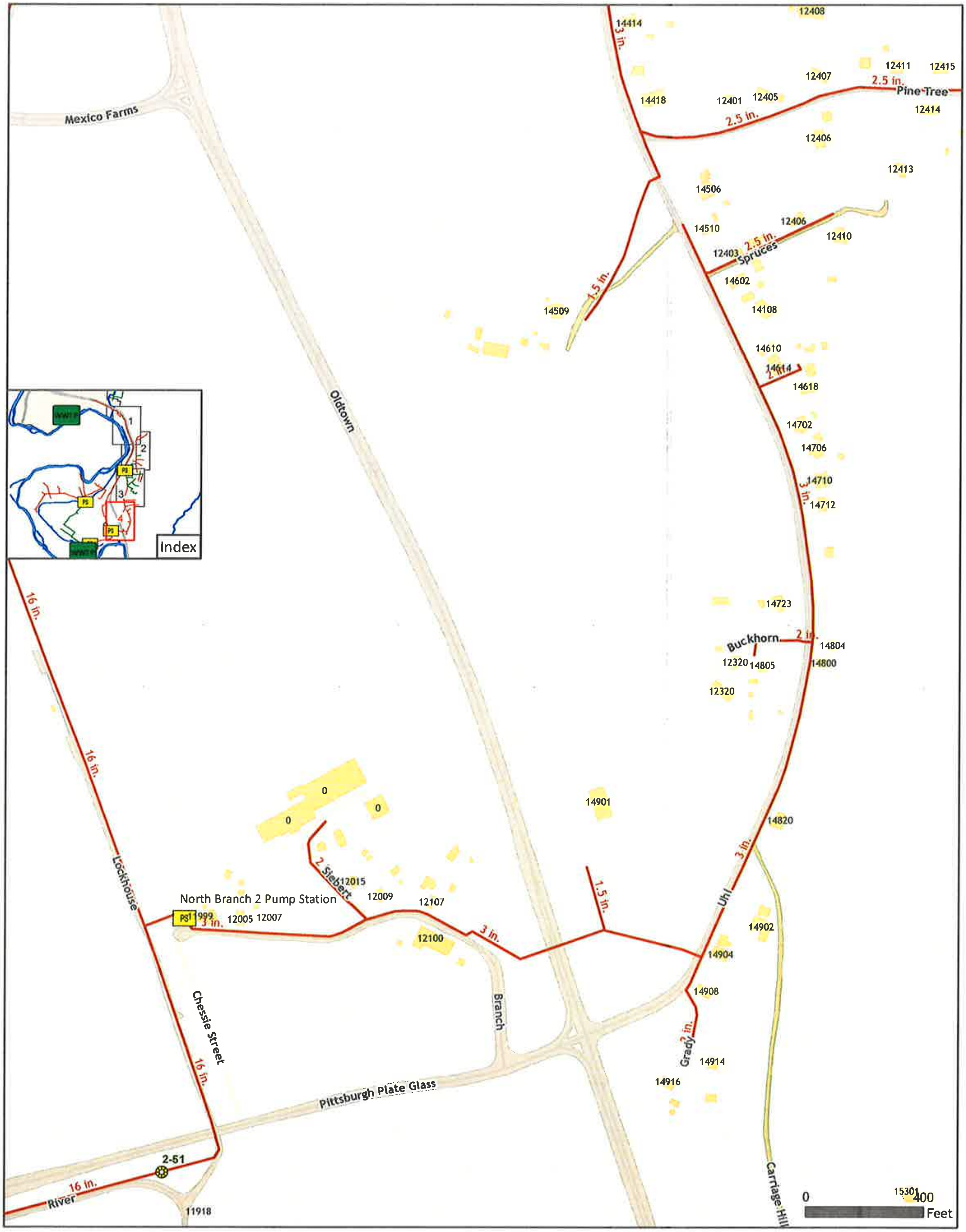

Messick
Cumberland
10-51
16 in.
12401
2 in.
12505
Evitts Creek
Industrial
Starite
12511
12513
12517
12521
12601
12605
16 in.
Jesse
12419
12411
Limestone
12507
Katie
12513
12610
12516
Roses Haven
12514
12541
12606
12515
12603
12601
Katie
Rays
12424
12615
12518
12700
Industrial
Index
North Branch Potomac River
16 in.
16 in.
12610
Longs Hollow
12612
Deneen
13107
12604
12601
2 in.
Deneen
Ruppenkamp
12610
Uhl
9-51
16 in.
13206
13201
3 in.
0 13214 400
Feet


16 in.
Industrial
16 in.
9-51
16 in.
16 in.
8-51
Oldtown
16 in.
7-51
16 in.
6 in.
23-55
6 in.
23A-55
6 in.
Sunshine
8 in.
24-55
8 in.
25-55
26-55
27-55
Deneen
2 in.
Deneen
Longs Hollow
2 in.
Ruppenkamp
3 in.
3 in.
3 in.
4 in.
1.5 in.
Knippenberg
2 in.
Mcdonald
2 in.
Slider
Cross
1.5 in.
Irons Mountain
Uhl
2.5 in.
12620
12610
12612
12615
12604
12611
13107
12601
12614
12620
12610
13206
13201
13214
13217
13221
13229
13303
13307
13310
13311
13312
13313
13314
13316
13321
13320
13321
13321
12603
12606
12615
13403
13405
13406
12607
13408
13409
12603
12615
13410
12509
12511
12513
12515
13500
12606
12608
12614
13502
13501
13505
13506
13508
12612
12603
13508
12525
12523
12605
12609
12519
12522
13602
12517
12520
13605
12609
12518
12608
12513
12514
12700
12701
12511
12512
12507
13701
12506
0
400
Feet

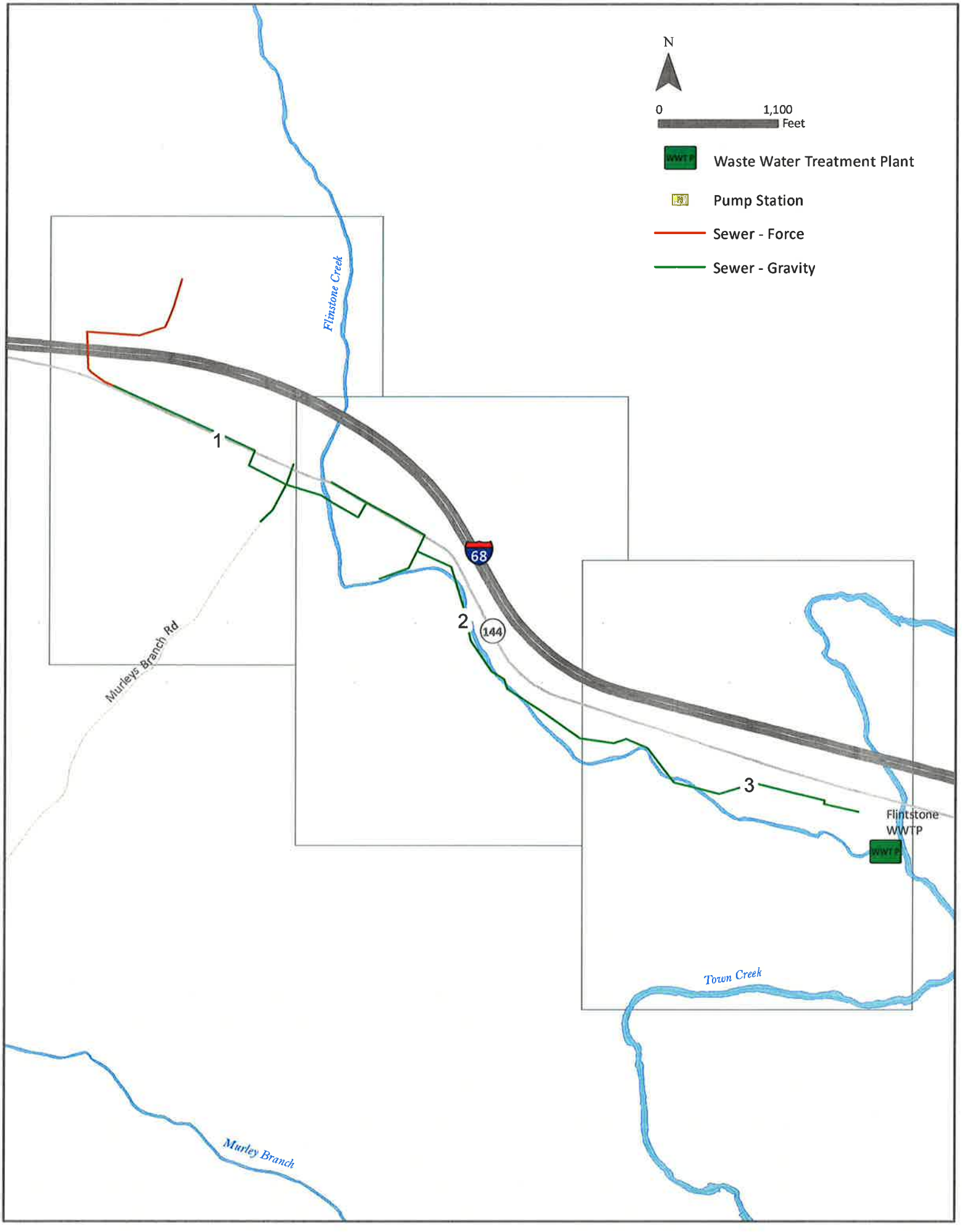
Oldtown Road

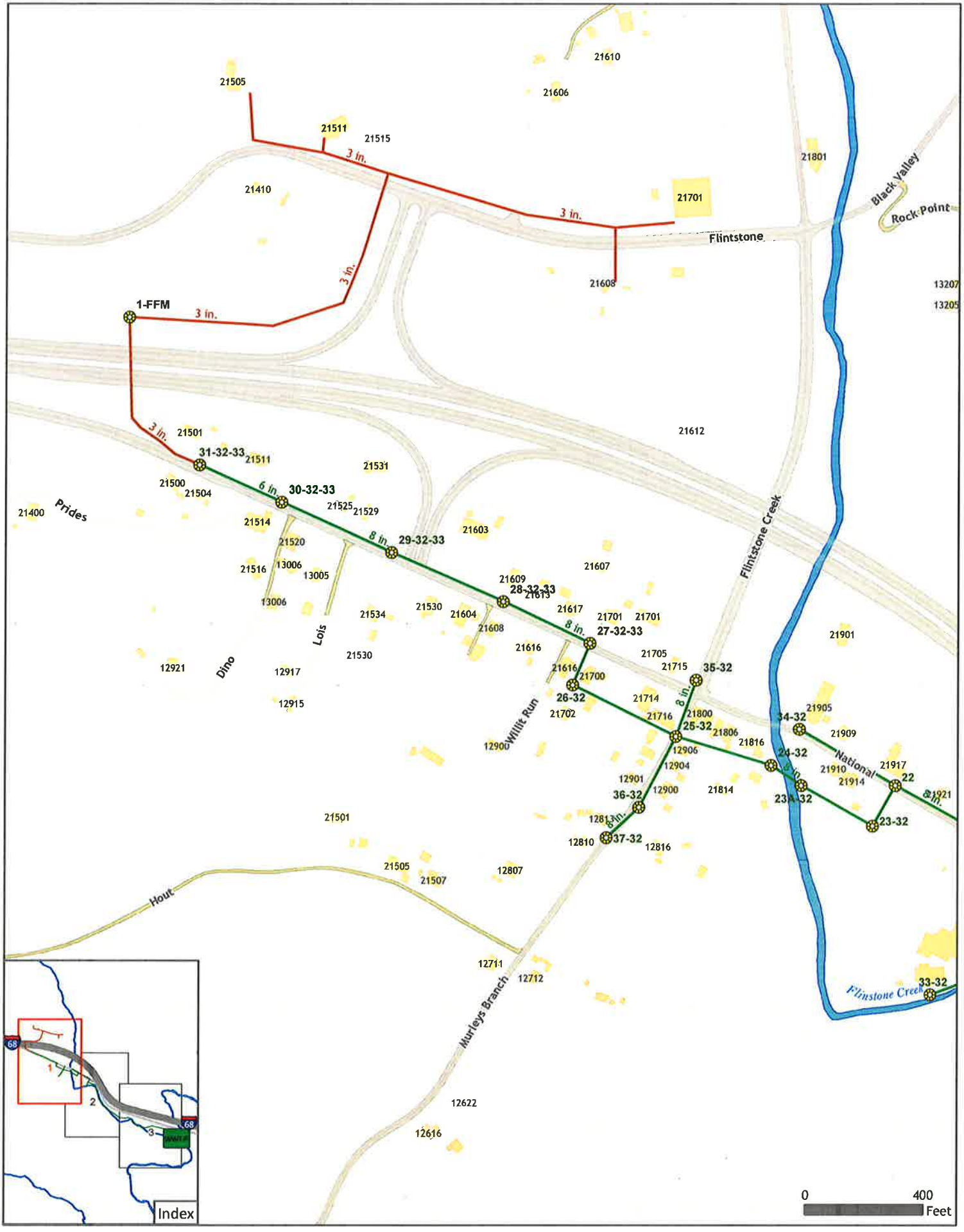
Sheet 3



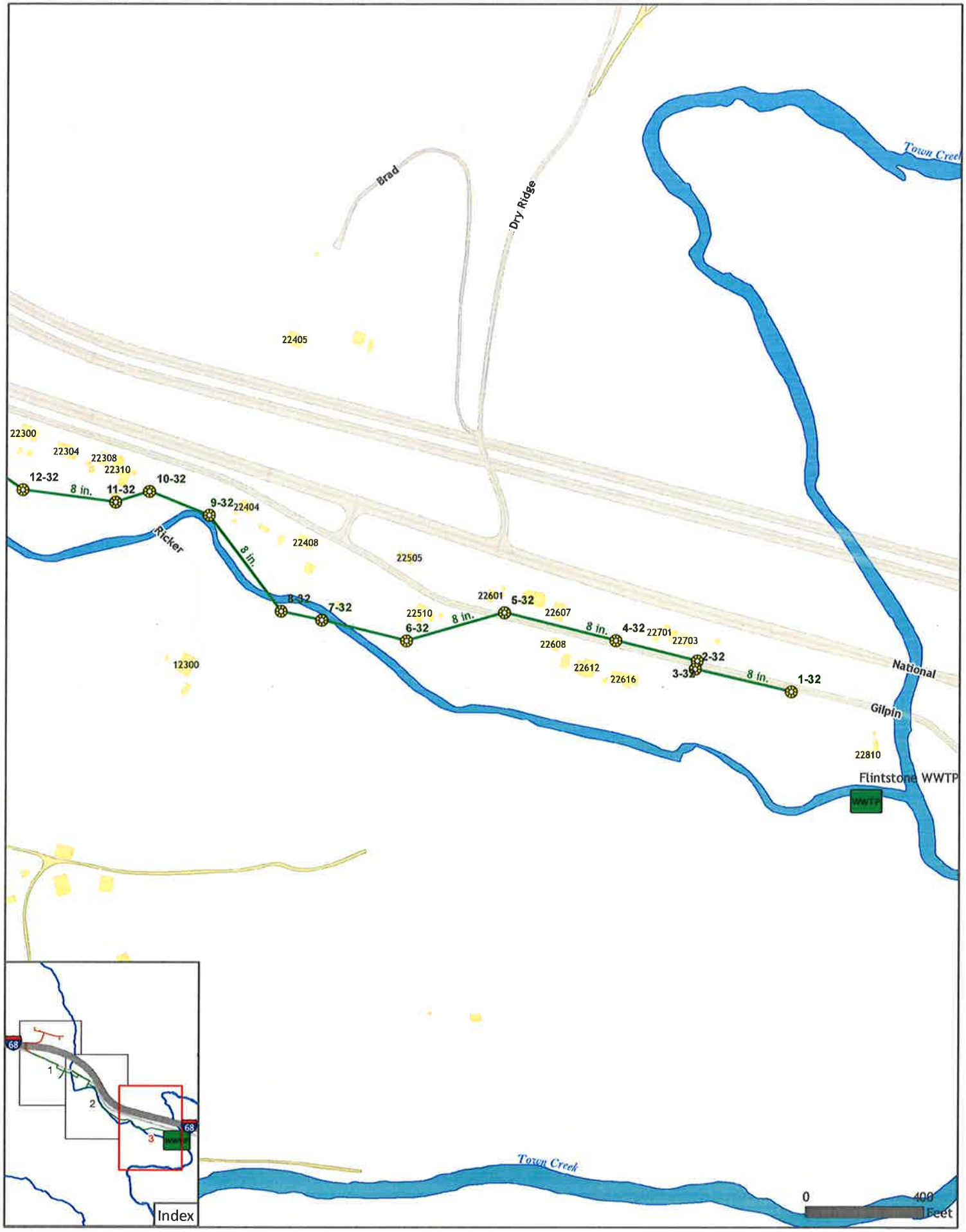

Mexico Farms
Oldtown
Pine Tree
Spruces
Buckhorn
Uhl
Grady
Carriage Hill
Lockhouse
Chessie Street
Branch
Siebert
Pittsburgh Plate Glass
River
North Branch 2 Pump Station
PS
2-51
16 in.
3 in.
2.5 in.
1.5 in.
2 in.
14414
12408
12411
12415
12407
14418
12401
12405
12414
12406
12413
14506
14510
12406
12410
12403
14602
14108
14509
14610
14614
14618
14702
14706
14710
14712
14723
14804
12320
14805
14800
12320
14901
14820
0
12015
12009
12107
11999
12005
12007
12100
14902
14904
14908
14914
14916
11918
15301
Index
1
2
3
4
WWTP
0
400
Feet

Flintstone Index

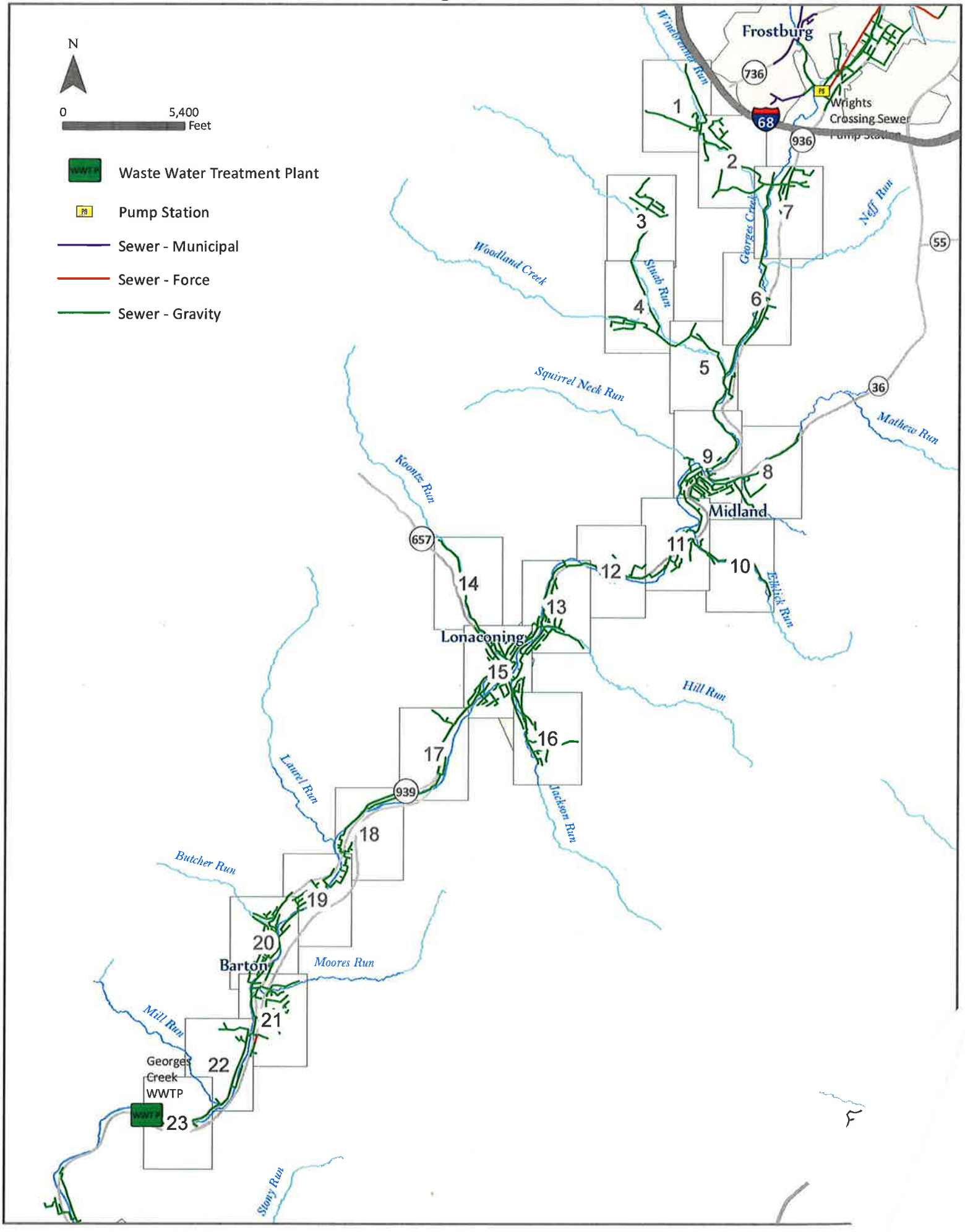


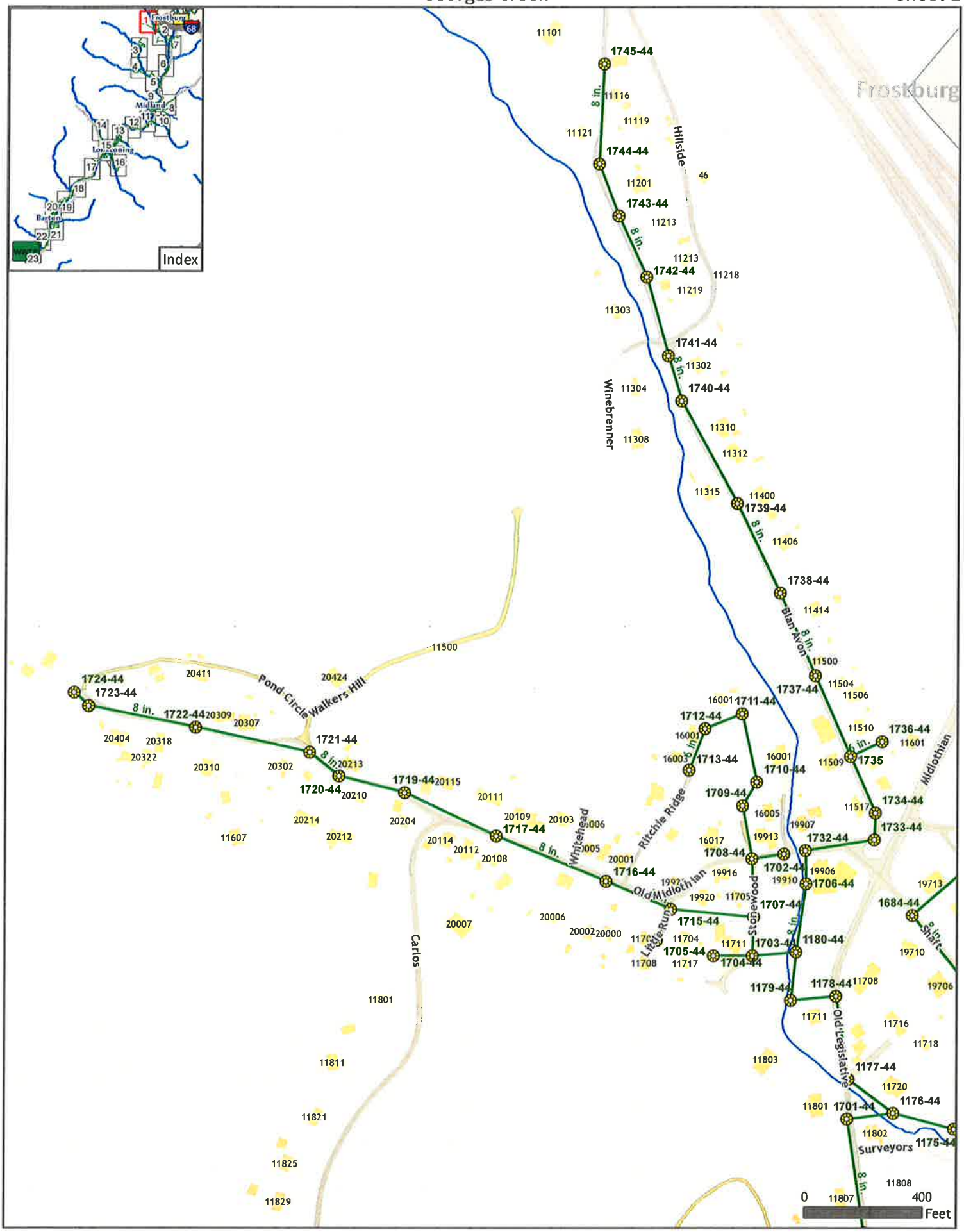

21610
21606
21505
21511
21515
3 in.
21801
21410
21701
Black Valley
Rock Point
Flintstone
3 in.
3 in.
21608
13207
13205
1-FFM
3 in.
3 in.
21501
21612
31-32-33
21511
21531
21500
21504
6 in.
30-32-33
21400
Prides
21525
21529
21514
21603
8 in.
29-32-33
21520
21516
13006
13005
21607
21609
28-32-33
21613
13006
21534
21530
21604
21617
21701
21701
8 in.
27-32-33
21608
21616
Flintstone Creek
21901
Lois
21530
21705
21715
35-32
12921
Dino
12917
21616
21700
26-32
21714
8 in.
12915
21702
21716
21800
25-32
21806
21816
34-32
21905
21909
Willit Run
12900
12906
12904
24-32
National
21910
21914
21917
22
21921
8 in.
12901
12900
21814
36-32
8 in.
23-32
21501
12813
8 in.
12810
37-32
12816
21505
21507
12807
Hout
12711
12712
Flintstone Creek
33-32
Murleys Branch
12622
12616
68
1
2
3
68
Index
0
400
Feet


Flintstone Creek
21901
35-32
21800
National
34-32
21905
21909
8 in.
21806
21816
24-32
21910
21914
21917
22
21923
21814
23A-32
8 in.
21921
8 in.
21927
23-32
21-32
22005
2011
20-32
19-32
22000
22014
8 in.
18-32
32-32
33-32
Flintstone Creek
17-32
8 in.
16-32
15A-32
15-32
14-32
8 in.
22201
Gilpin
13-32
8 in.
382
22300
22304
22308
22310
12-32
8 in.
11-32
10-32
Ricker
12310
Town Creek
12211
0
400
Feet
Index
68
1
2
3
68
BMTP


Brad
Dry Ridge
Town Creek
22405
22300
22304
22308
22310
12-32
8 in.
11-32
10-32
9-32
22404
Ricker
22408
22505
8 in.
8-32
7-32
22510
6-32
8 in.
22601
5-32
22607
8 in.
4-32
22701
22703
22608
22612
22616
3-32
2-32
8 in.
1-32
12300
National
Gilpin
22810
Flintstone WWTP
WWTP
Town Creek
0
400
Feet
Index
68
1
2
3
68
WWTP

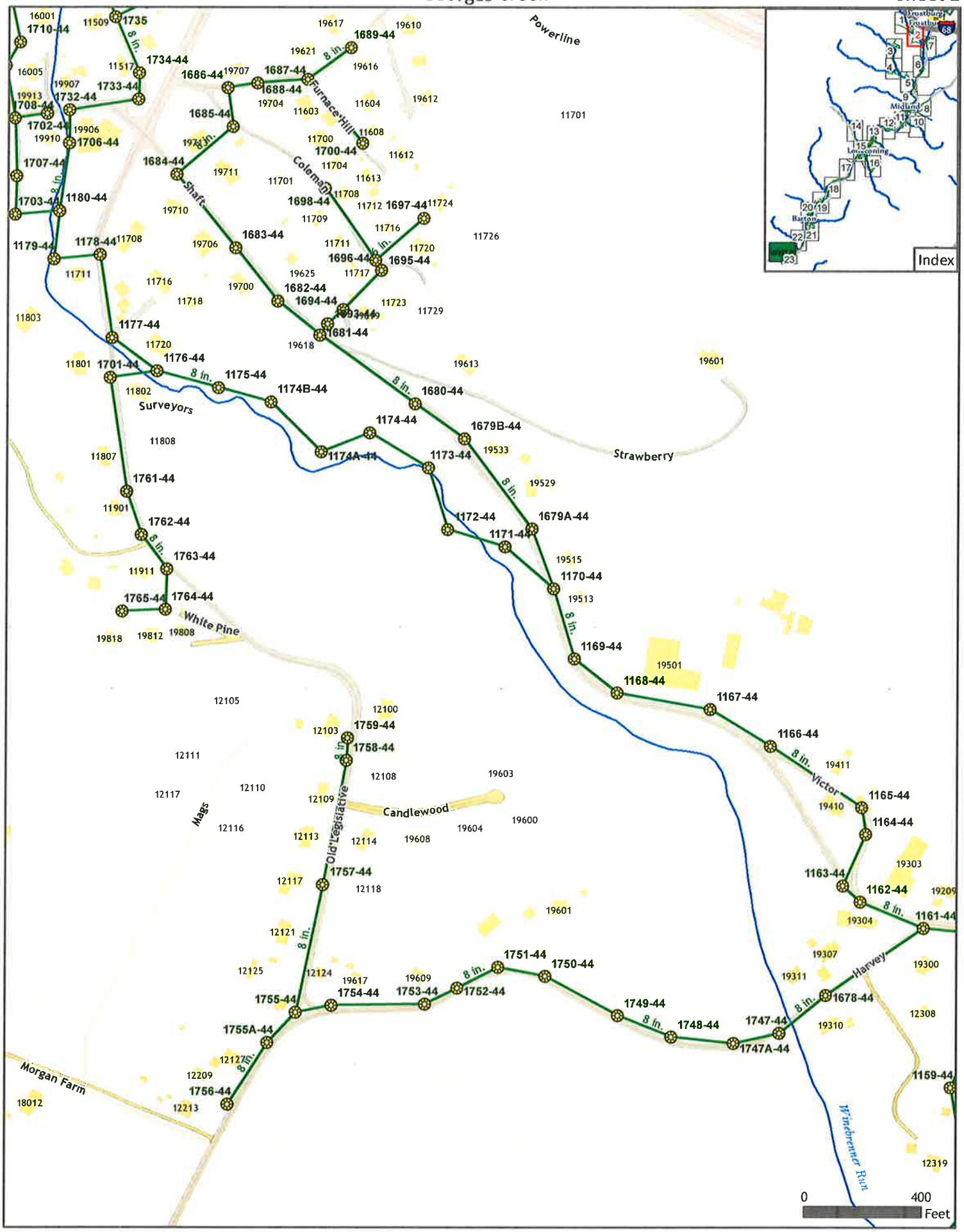
Georges Creek Index

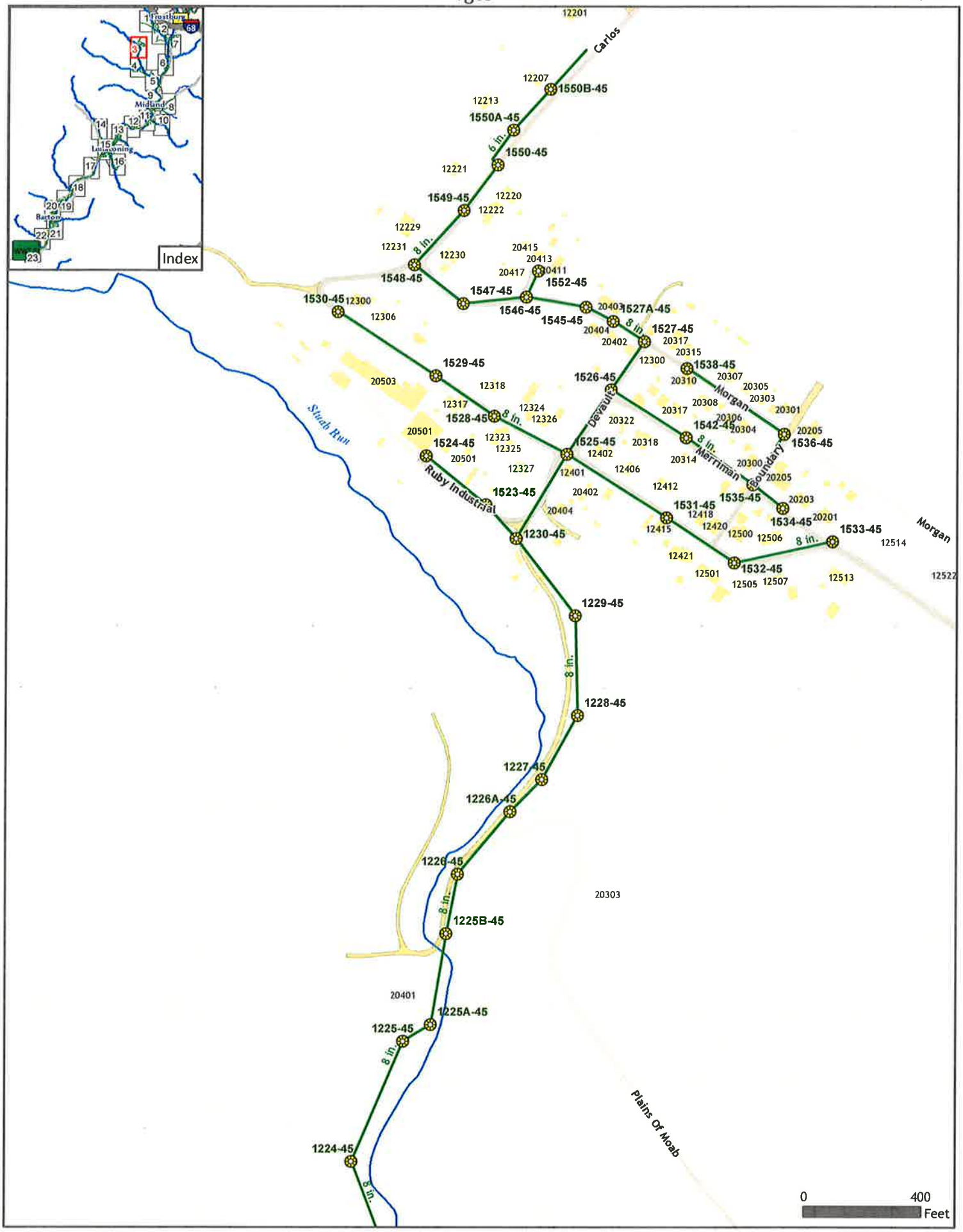


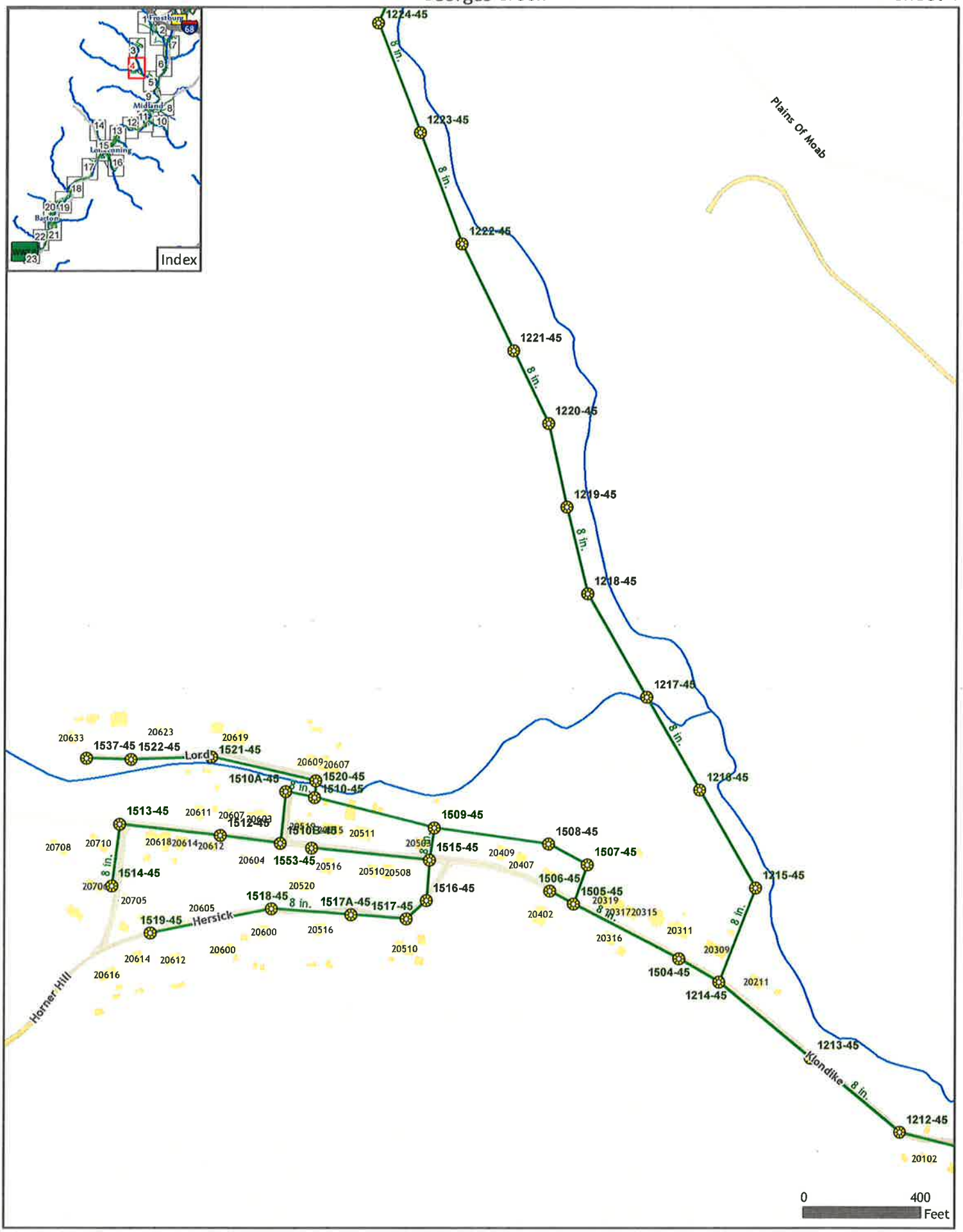

Index
Frostburg
Midland
Lonaconing
Barton
1745-44
1744-44
1743-44
1742-44
1741-44
1740-44
1739-44
1738-44
1737-44
1736-44
1735
1734-44
1733-44
1732-44
1711-44
1712-44
1713-44
1710-44
1709-44
1708-44
1702-44
1706-44
1707-44
1715-44
1705-44
1704-44
1703-44
1180-44
1179-44
1178-44
1177-44
1176-44
1175-44
1701-44
1716-44
1717-44
1719-44
1720-44
1721-44
1722-44
1723-44
1724-44
8 in.
Hillside
Winebrenner
Blan Avon
Midlothian
Ritchie Ridge
Whitehead
Old Midlothian
Stonewood
Little Run
Carlos
Old Legislative
Surveyors
Pond Circle
Walkers Hill
0
400
Feet

Georges Creek

Sheet 2




Index
Carlos
1550B-45
1550A-45
1550-45
1549-45
1548-45
1547-45
1546-45
1545-45
1552-45
1530-45
1529-45
1528-45
1527A-45
1527-45
1526-45
1525-45
1524-45
1523-45
1230-45
1538-45
1542-45
1536-45
1535-45
1531-45
1534-45
1533-45
1532-45
1229-45
1228-45
1227-45
1226A-45
1226-45
1225B-45
1225A-45
1225-45
1224-45
Devault
Morgan
Merriman
Boundary
Ruby Industrial
Stuab Run
Plains Of Moab
6 in.
8 in.
0
400
Feet


Index
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1223-45
1222-45
1221-45
1220-45
1219-45
1218-45
1217-45
1216-45
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1214-45
1213-45
1212-45
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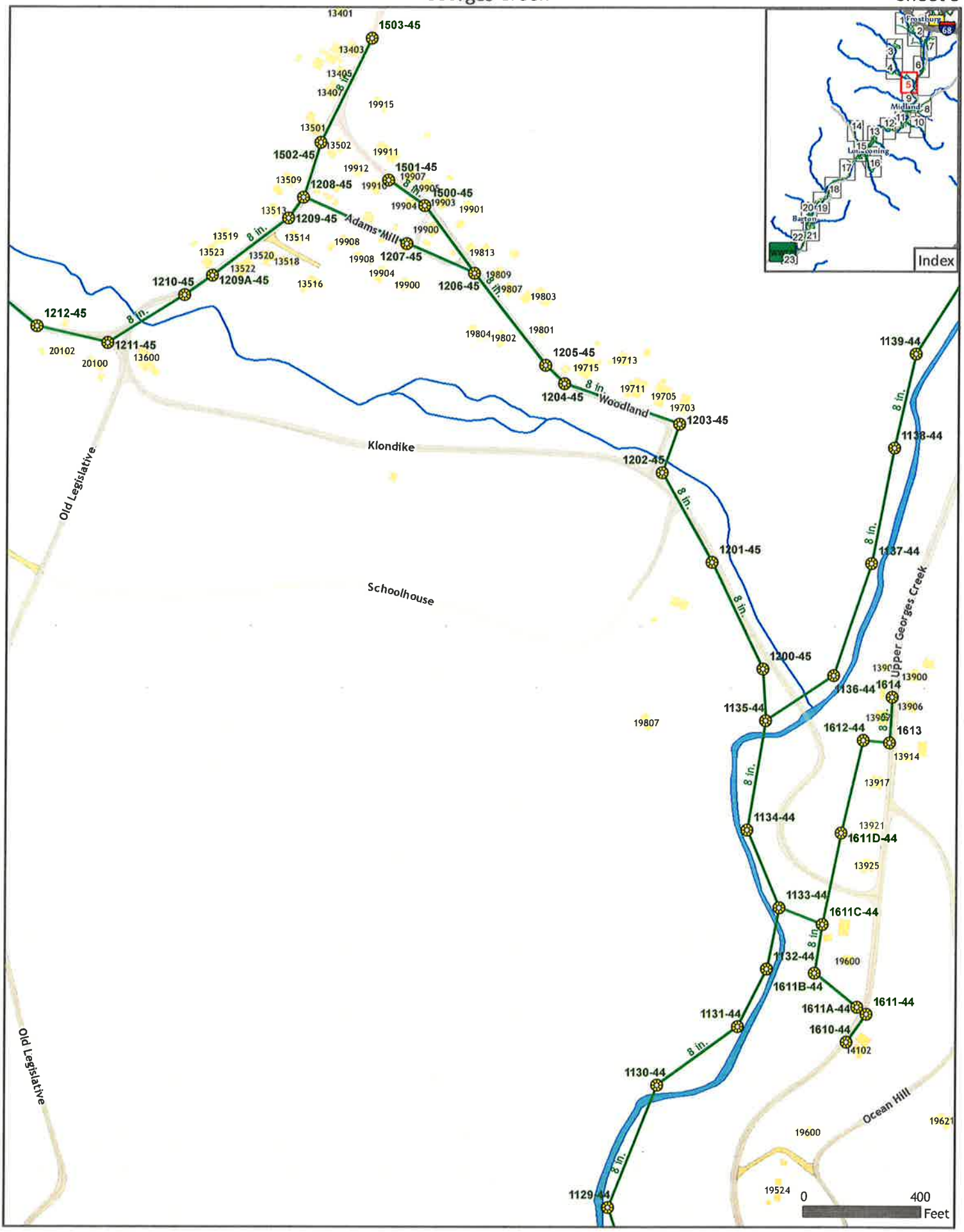
1520-45
1510-45
1510A-45
1513-45
1512-45
1514-45
1553-45
1509-45
1515-45
1516-45
1518-45
1517A-45
1517-45
1519-45
1508-45
1507-45
1506-45
1505-45
1504-45
Lord
Hersick
Horner Hill
Klondike
Plains Of Moab
8 in.
0
400
Feet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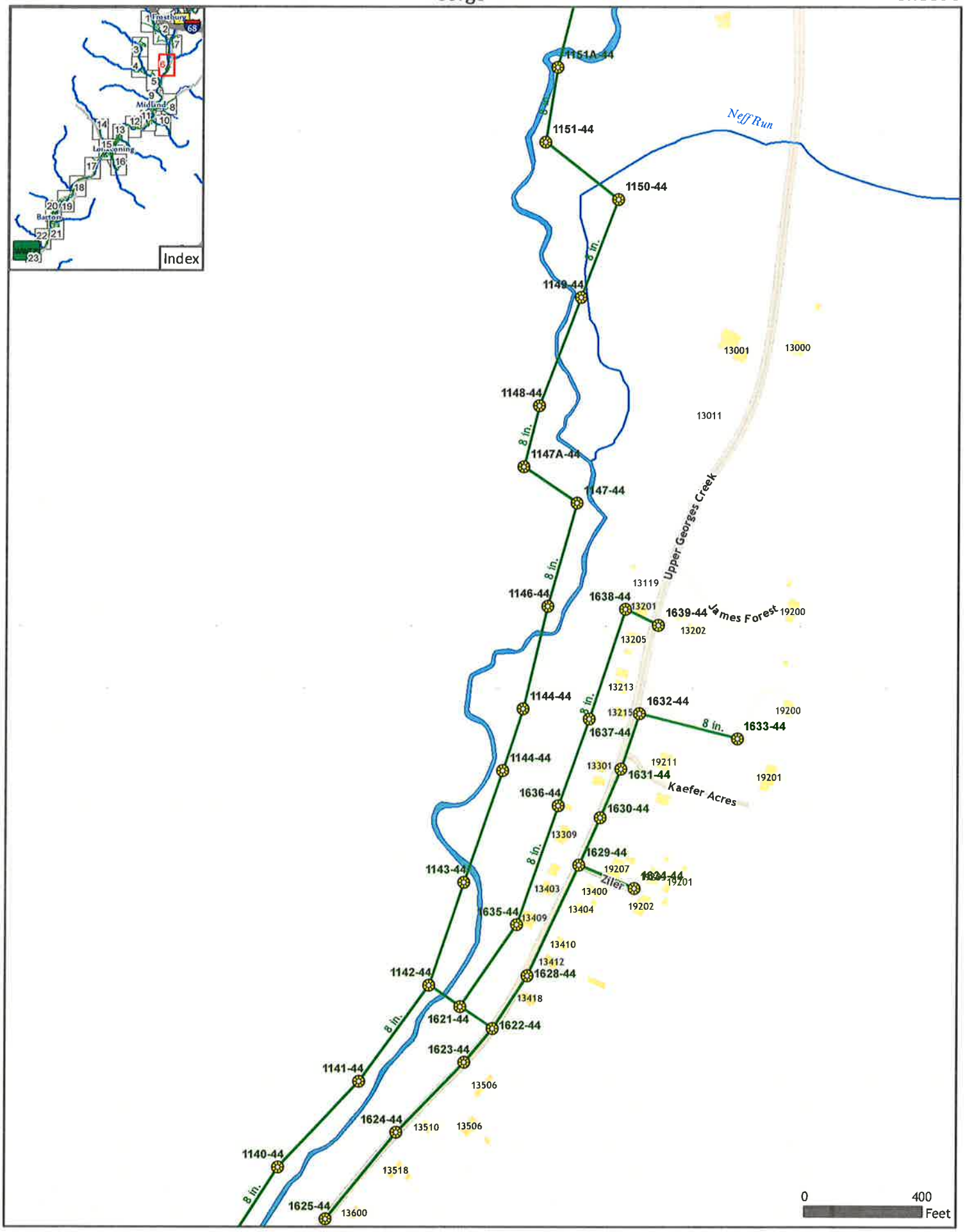
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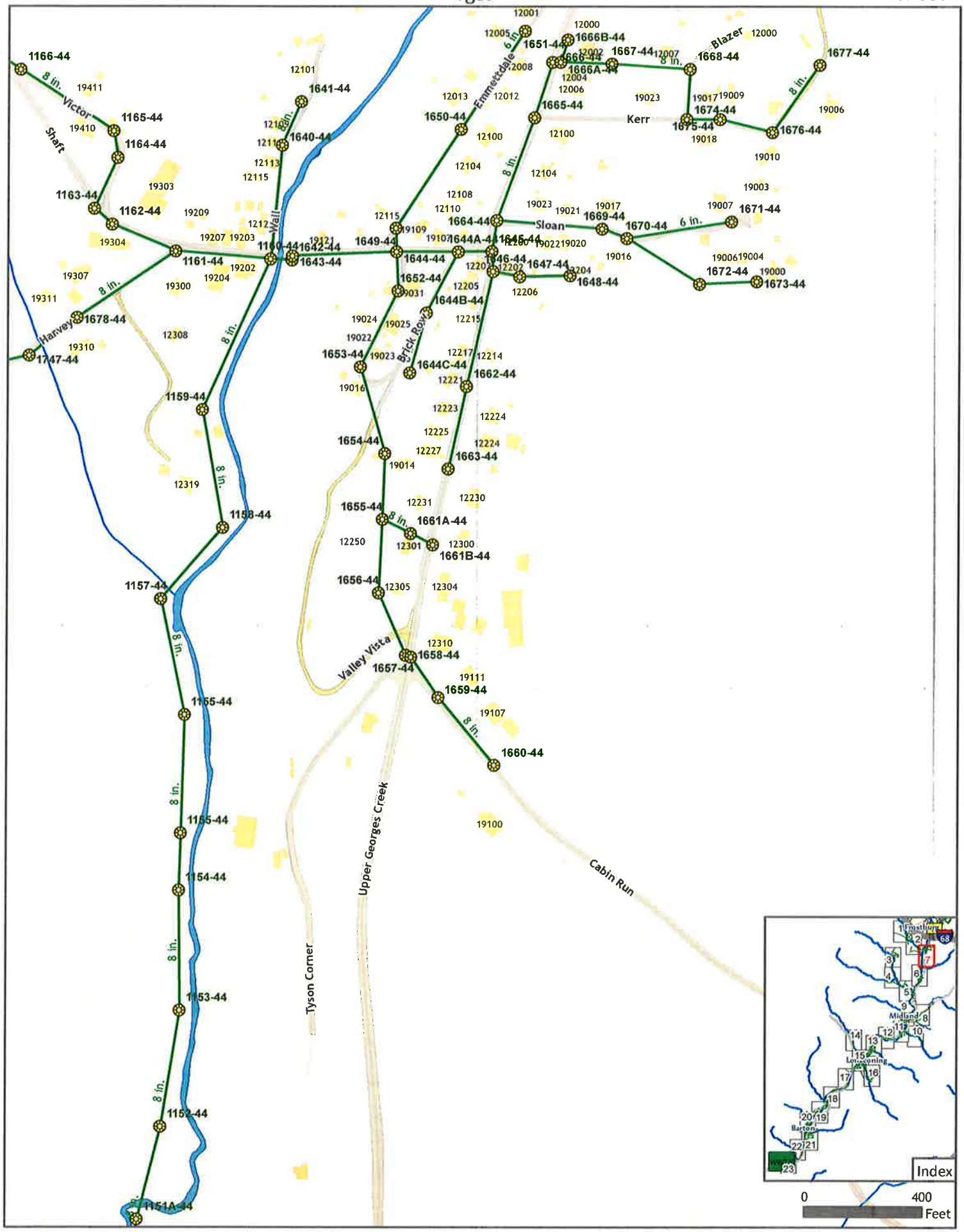

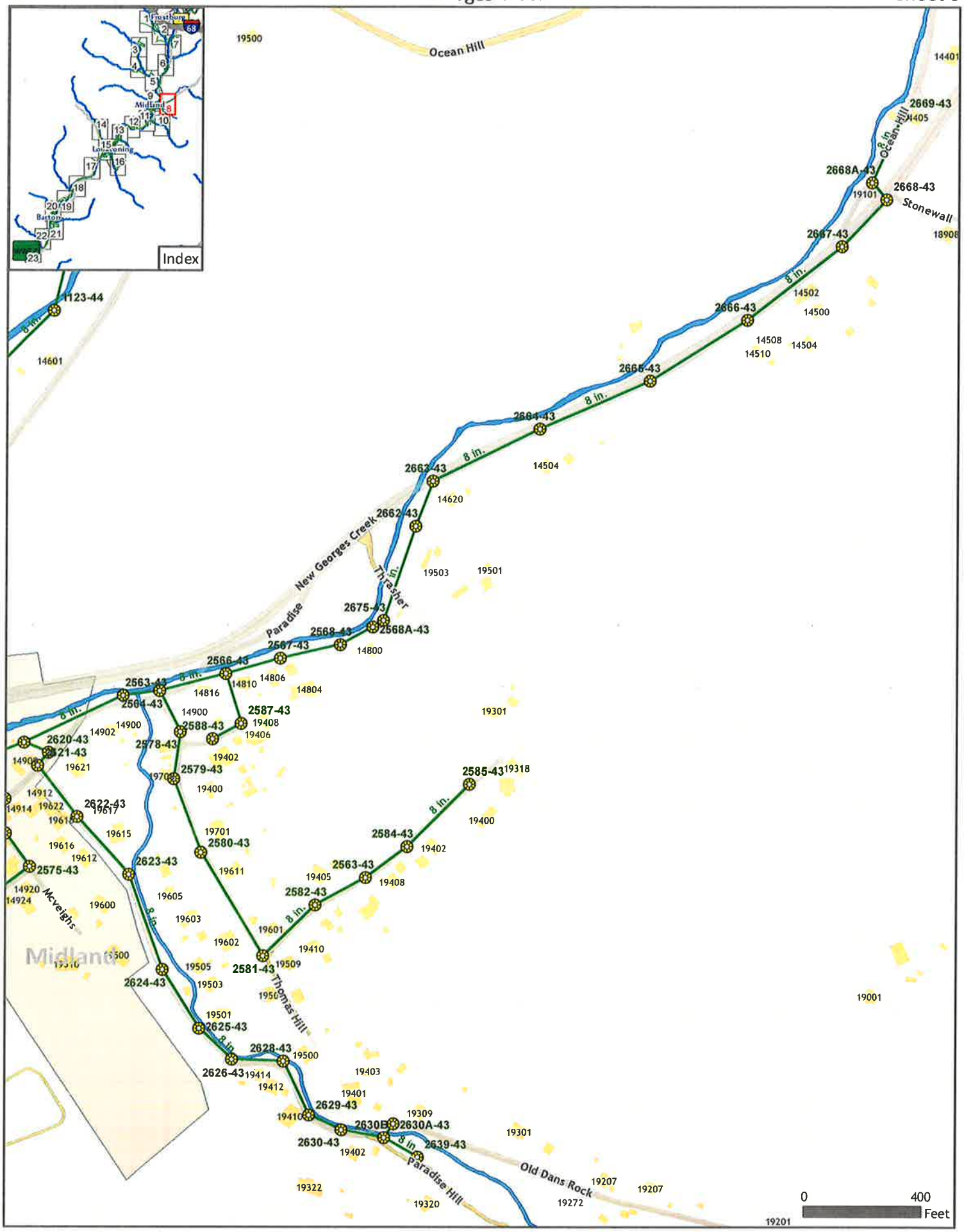
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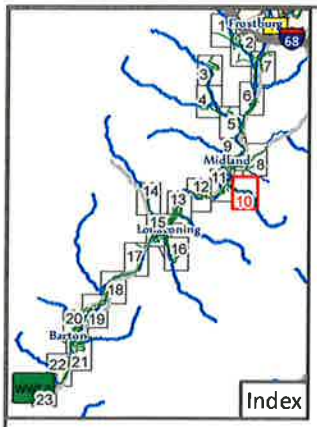

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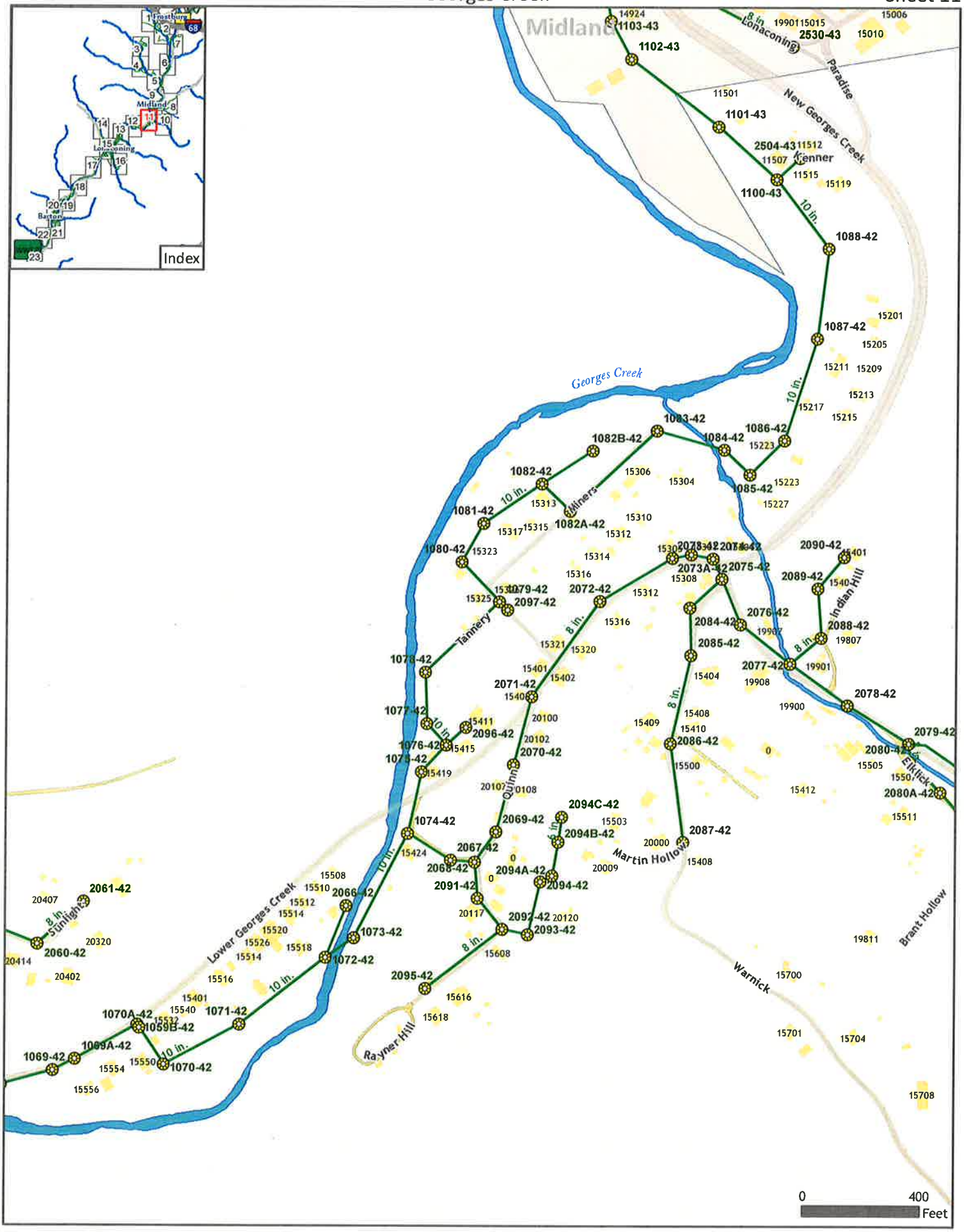
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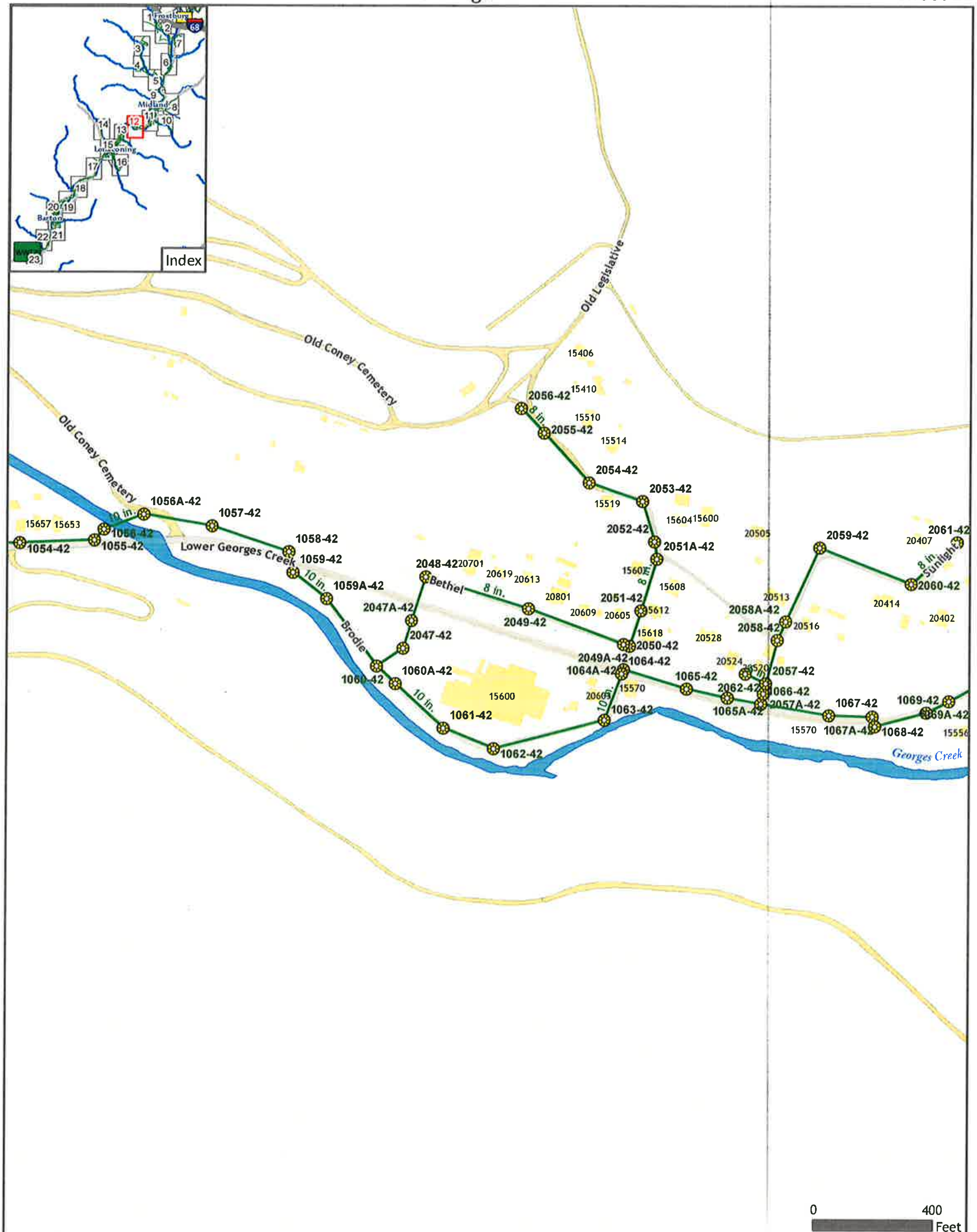
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