MAP, PLAN AND REPORT

WATER DISTRICT FORMATION

SCHOHARIE BUSINESS PARK

TOWN OF SCHOHARIE, NEW YORK

MARCH 11, 2020

Lamont Engineers
ENGINEERS • PLANNERS • FACILITY OPERATIONS

197 ELM STREET
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TABLE OF CONTENTS

APPENDICES

1 INTRODUCTION

The Schoharie Business Park (SBP) consists of 13 tax parcels as indicated on the mapping in Appendix A. The Business Park is currently served by private water and sewer systems and a private road network. Recently, NYSDEC has urged the Town to consider forming a Sewer District so that certain administrative and ownership issues related to the sewer system can be addressed. During the process of forming the Sewer District, it became apparent that the water system customers and the water system Owner were interested in creation of a Water District as well. The scope of this Map, Plan and Report (MPR) only includes the Water System.

2 WATER SYSTEM HISTORY

The water system was constructed in approximately 2000 and consists of two wells, a water treatment and storage system, and a distribution pumping system. The water distribution system was not designed to provide fire flows, but instead was designed only to provide domestic water needs plus limited building sprinkler system needs. A separate dry hydrant system was incorporated in the design to supplement fire-fighting water supply.

The initial Business Park tenant (Dunkin Donuts) was served by a 2” main. As customers were added to the system, new 6” and 4” mains were installed by the SBP developer.

The new owner of the Schoharie Business Park roads and water system infrastructure (7 Summits, LLC,), does not want to continue to operate the water system given his distance from the site. For this reason, the Town has been asked to form a Water District.

3 EXISTING CONDITIONS

a. System Overview

A schematic of the water system is presented in Appendix B and a General Plan is presented in Appendix C.

b. Water Supply

Water is supplied to the Schoharie Business Park (SBP) potable water system by two wells, Well No. 1 and Well No. 2, each located approximately 20 ft. from the water treatment building. Each well is throttled to an individual discharge rate of about 13 gpm. The well types (i.e. rock vs. gravel) and depths are not known, as the well information available has discrepancies. While the actual well capacities are not known, promotional literature for the SBP identifies a total well capacity of 40 gpm. The wells produce water of moderate quality. The original system design included a water softener for the removal of calcium hardness, iron, and manganese. It is reported that iron and manganese levels dropped over time, resulting in the decision to discontinue the use of the softening system. Raw water quality data from Wells 1 and 2 is presented in Appendix D.

Note that other wells exist within the Business Park, but these are not connected to the system and are not permitted for use by the Health Department.

c. Water Treatment

Water treatment consists primarily of the injection of sodium hypochlorite solution into the raw water prior to the ground storage tanks. Chlorine solution is periodically prepared by the Operator in a small solution tank by combining water and a 12.5% sodium hypochlorite solution at a 16:1 ratio. The chlorine solution is fed by a peristaltic chemical feed pump that runs only when the well pumps are delivering water to the ground storage tanks.

The two (2) 10,000 gallon plastic ground storage tanks located within the treatment building provide chlorine contact time as well as the storage volume needed to meet peak daily demands.

Note also that a 30 micron sediment filter exists on the discharge line from each well, likely to help keep particulate matter from entering (and settling in) the ground storage tanks.

d. Water Distribution System

Water is delivered to the Business Park customers through a booster pump system. Normally, a single 7.5 Hp, 90 gpm, domestic booster pump draws chlorinated water from the ground storage tanks and delivers the water into the distribution piping to maintain a pressure range of approximately 54-84 psi at the treatment facility. A variable speed drive adjusts the speed of the booster pump to limit pressure surges and to extend the operating time of the pump by attempting to match demand. Note that the control system limits the minimum pump speed so that the pump operates within a desirable range. During lower demand periods, this causes the pump to cycle on and off. When the booster pump is off, water is fed to customers from four (4) hydropneumatic tanks, which have an estimated total drawdown volume of 120 gallons (30 gallons per tank) in the normal operating pressure range.

Note that two (2) domestic booster pumps exist; however, they utilize a single plug-in electrical connection that is controlled by a single variable frequency drive. Therefore, the system design includes a provision for redundancy, but it requires a manual switchover of the pumps.

The system also includes provisions to feed fire sprinkler systems within the Business Park. Two (2) 20 Hp high-demand pumps exist for this purpose; the reported capacity of each pump is 300 gpm. The pumps are activated when system pressure drops below the normal “Pump On” setpoint (54 psi) indicating a high system demand (or a failure of the domestic pump). It is understood that the high demand pumps operate in a lead/lag configuration, but this needs to be verified. In contrast to the domestic booster pumps, these pumps operate at full speed and, according to the operator, cause a significant water hammer when operated. The pumps shut off when the high pressure setpoint is reached. Note

that Fire Pumps are defined very specifically in the fire suppression industry. These high demand pumps are not Fire Pumps. Further, please note that the fire suppression requirements of the Hotel (or any of the buildings) are not known.

A 75 KW diesel generator exists to provide power during utility shutdowns. Note that the while electrical disruptions are frequent, they typically do not last long enough for the generator system to be activated.

According to records from the original owners of the Schoharie Business Park, the distribution system contains the following water mains:

- 6" PVC 2,000 LF
- 4" PVC 1,500 LF
- 2" PVC 2,500 LF

Note that the potable water system has no fire hydrants; the hydrants visible at the site are part of the dry hydrant system described below. It is understood that at least one potable water system blow-off exists for flushing (near the Hotel).

e. Dry Hydrant and Fire Pond System

Completely separate from the potable water system is a dry hydrant system with fire pond. The fire pond is located at the intersection of Park Place and Holiday Way. The dry hydrant system consists of 2500 LF of 6" PVC piping and three (3) dry hydrants. In general, the dry hydrant piping system is filled by tanker trucks and/or the fire pond during a fire event and water is drawn from dry hydrants near the fire. A Central Bridge Fire Department plan for fighting a fire at the Business Park Hotel is presented in Appendix E and further illustrates the intended use of the dry hydrant system.

f. Water Demands

A summary of recent water production data is presented below:

Year	Average (gpd)	Maximum Day (gpd)
2016	4,486	16,090
2017	3,997	16,430
2018	6,015	20,120

See Appendix F for water production data from 2016-18.

Note that the data includes water used for periodic water system flushing activities (to control iron and manganese and maintain chlorine residual).

For the purposes of this evaluation, the following water demands will be used:

- Current Average Day 6,000 gpd
- Current Maximum Day 20,000 gpd

- Future Average Day 9,500 gpd
- Future Maximum Day 28,500 gpd

Note that future Maximum Day is based on an assumed single well capacity of 20 gpm (i.e. with one well out of service). Future Average Day is estimated at 33% of the Future Maximum Day.

It is understood that individual service meters exist at each building served, but any data that may have been collected has not been made available.

f. Property Ownership and Easements

Current ownership of the parcels in the Business Park is identified in the table below. As indicated by the tax map information, the Owner of the water treatment building site and the roads (which contain most of the water mains) is 7 Summits, LLC. Note that easements related to the operation and maintenance of the water system are also identified in the second table:

EXISTING PROPERTY OWNERSHIP

Tax Map ID	Owner	Address	Notes
48.-4-25.2	BJ Hospitality LLC	160 Holiday Way	Quality Inn Hotel
48.-4-25.12	Teixeira, Carlos	106 Park Pl	Dunkin Donuts
48.-4-25.111	7 Summits LLC	Holiday Way	Roads, Wastewater Facilities, and Water Facilities
48.-4-25.112	Schoharie Park LLC	211 State Route 30A	Mobil Mart
.48.-4-25.113	County of Schoharie	Park Pl	County Vacant lot
48.-4-25.114	7 Summits LLC	State Route 30A	Vacant
48.-4-25.115	County of Schoharie	113 Park Pl	County Office Complex
48.-4-25.116	Milliron, Ladain	121 Park Pl	Day Care Center
48.-4-25.117	Schoharie Eagle Property	Park Pl	Vacant
48.-4-25. 118	Shaul Farms Inc	Holiday Way	Farm Field with Sewer Outfall
48.-4-25.119	Schoharie Eagle Property	108 Holiday Way	USDA Office Building
48.-4-26.1	Stanton, Horace	239 State Route 30A	House and Farm
48.-4-26.2	7 Summits LLC	Holiday Way	Vacant

EXISTING EASEMENTS (PRESUMED)

Tax Map ID	Owner	Location	Notes
48.-4-25.112	Schoharie Park LLC	Along South Bound.	Water Main to 48.-4-25.113/114
48.-4-25.115	County of Schoharie	Along North Bound.	Water Main to 48.-4-25.113/114
48.-4-25.115	County of Schoharie	Along South Bound.	Water Main to 48.-4-25.113/111
48.-4-25.116	Milliron, Ladain	Along North Bound.	Water Main to 48.-4-25.113/111

g. Discharge Permit – Water Softener Discharge

A State Pollutant Discharge Elimination System (SPDES) permit for the wastewater system was originally issued by NYSDEC on March 1, 2001 and included a provision for the disposal of water softener waste water. Specifically, Outfall 003 of the SPDES permit covered water softener system wastewater at a daily average discharge of 750 gpd. As noted above, the water softener system is not currently in use. Further, it is unclear how the softener waste was piped to the sand filter beds and/or outfall piping. Nonetheless, any new SPDES permit application to NYSDEC for the wastewater system should evaluate whether or not this discharge (or another water treatment discharge) will be needed in the future.

h. System Operations

The system is currently operated on a daily basis by an unlicensed operator (maintenance person). Daily operation activities consist of entry point chlorine residual measurement, well production water meter reading, and chlorine system maintenance. Samples are collected from the distribution system quarterly and sent to a certified lab for bacteriological testing. It is our understanding that the system requires a Grade C Operating License. The monthly operating reports are signed by the current Owner of the system, who oversees the operations but is not a licensed operator.

i. User Costs and Operating Budget

A summary of the estimated existing water system operation and maintenance costs is presented below (projected in part from 2008 SBP Budget numbers):

Operator	$15,000
Taxes	$ 1,500
Repairs and Maintenance	$ 250
Dues and Subscriptions	$ 100
Vehicle and Equipment	$ 500
Insurance	$ 500
Utilities	$ 4,000
Telephone/Communications	$ 200
Training	$ 200
Water Testing	$ 750
Expenses	$ 500
	$23,500

In addition to paying water rents, customers must maintain their backflow preventers and have them tested by a certified tester every year. The test results are then provided to the water system Owner/Operator for submission to the Heath Department. Based on information from the Health Department, the following table identifies the number of backflow preventers at each service:

Service	Backflow Preventers
Quality Inn Hotel	4
Dunkin Donuts	1
Day Care Center	1
Mobil Mart	2
County Offices	1
USDA Office Building	1

4. EVALUATION OF FACILITIES

a. Wells

The actual capacity of the two (2) production wells is not known.

The available raw water quality data shows that the wells have elevated iron and manganese levels. Also, it should be noted that Total Dissolved Solids (TDS) levels are high in both wells, with moderate to high levels of calcium hardness and sulfate contributing to the high TDS. However, the data available is limited and the water quality should be better understood.

The Heath Department has indicated that new well caps and other sanitary measures are needed at each wellhead.

Access to the wells for operational and maintenance activities is periodically hindered by excessively high vegetation (this was evidenced when the operator could not identify the location of the active wells).

b. Treatment

The system only has one chlorine feed pump and should have a spare feed pump. There have been boil water notices issued due to the lack of an operable chlorine feed pump.

Periodically, high iron and manganese levels exist in the distribution system, indicating fluctuations in raw water quality and/or the release of residual iron and manganese from the storage tanks or the piping system.

The Heath Department has indicated the need to clean the ground storage tanks and regularly flush the distribution system to maintain a chlorine residual (and remove oxidized iron and manganese).

c. Booster Pumping

The primary concern with the booster pumping system is that the controls have to be manually re-set after power outages. The National Grid electrical supply in the area is known to have frequent short duration outages. The scope of the required controls system repair is unknown at this point. If the operator is not present, the system is typically re-set by volunteers from the system customers.

The system does not have an on-line redundant domestic booster pump. If needed for back-up, the spare domestic pump must be manually plugged-in to the single power receptacle. If the active domestic pump fails, one of the high demand pumps will operate once the low pressure setpoint is reached, but the pump will have very short cycle time since it only operates at full speed. Further, the operation of the high demand pumps typically causes a significant pressure surge.

The liabilities related to this system with respect to fire suppression are not known. Further, neither the Available Fire Flows nor the Needed Fire Flows are known.

d. Miscellaneous

The system is not currently operated under the direction of a licensed operator. This has been a concern of the Health Department.

More needs to be known about the emergency generator. The relatively new water and wastewater operators do not have a clear understanding of what can be used under emergency power.

There exists a fair amount of surplus and unused equipment that clutters the treatment building. Further, the facility could benefit from some housekeeping and organization.

The building may have workplace safety issues that should be addressed.

If the Town forms a Water District, the system requirements could possibly change (i.e. change from commercial to municipal system). These changes are not fully known at this point.

5. RECOMMENDED IMPROVEMENTS

a. Wells

Each well should be pumped unthrottled while the well levels are monitored by a well contractor. This would be a first step toward confirming the well yields (and thus system capacity). This work should include the determination of the pump setting depth and the screened depth for each well.

Additional raw water quality data should be collected from each well to allow for further evaluation of suitable water treatment technologies.

As required by the Health Department, each wellhead should be fitted with an approved well cap and all conduit systems should be sealed.

The area around the wellheads and treatment building should be kept free of brush so that the wells are easily accessible in the event that maintenance is needed.

Additional land should be purchased at the wellfield to ensure that land use is controlled for a minimum distance of 200 ft. from each well. While wellhead protection easements or watershed rules and regulations may suffice in the event land purchase is problematic, the purchase of land is preferred, as it also provides locations for future wells.

b. Treatment

A back-up chlorine feed pump should be provided to provide for uninterrupted chlorine feed during feed pump maintenance activities.

Additional finished water quality data should be collected from the distribution system to allow for further understanding of existing conditions.

As required by the Health Department, each ground storage tank should be cleaned of residual iron and manganese. Flushing of the problematic 6" water main on Holiday Way should also be conducted regularly and in conjunction with distribution system sampling results.

Field test kits should be obtained to allow the operator to periodically check iron and a manganese levels (in additional to chlorine residuals) in order to determine the proper water main flushing intervals.

While subject to review of additional water quality data, a preliminary recommendation for control of iron and manganese is to implement the use of a blended phosphate to sequester iron and manganese and control corrosion of metallic piping. The phosphate would need to be applied prior to the application of sodium hypochlorite.

c. Booster Pumping

Control panel modification (or replacement) is needed in order to provide a more reliable water delivery system. The current system of volunteer assistance for the required manual panel re-sets would not likely be tolerated if the Town created a Water District. Complete control panel replacement would be the conservative approach; however, other possible approaches could be determined if the control system were reviewed in detail by the current service provider (or other qualified personnel).

A second, permanently connected domestic feed pump (and variable frequency drive) should be added to the system. The domestic feed pumps provide 95% of the pumping, so an on-line redundant pump makes practical sense. While it is possible to have both pumps run off of one variable frequency drive, a second drive provides an additional layer of redundancy, as drives are prone to failure.

While not totally essential, a magnetic (or insertion style) flow meter on the pump discharge piping would provide useful information to an operator. Such information could be used to monitor pump performance and confirm the system's ability to meet the fire flow requirements.

If new system controls do not employ variable frequency drives for the high demand pumps, consideration should be given to adding a pump control valve that would limit the surge (water hammer) that occurs when the high demand pumps are called to operate. If not addressed, it is possible that the surge forces could eventually cause a piping failure in the treatment facility.

To allow for the evaluation of pumping improvements, the Available Fire Flow at the Hotel should be tested under current conditions. Due to the lack of hydrants on the potable system, this testing may need to be done within the Hotel at the connection to the fire suppression system. In conjunction with this, the Needed Fire Flow should be obtained from the company that maintains the fire suppression system at the Hotel.

d. Miscellaneous

As required by the Health Department, the system will require a Grade C licensed operator.

In order to confirm the operation of the generator under load, a utility shutdown should be simulated and the generator should be tested against all connected loads, so that capabilities and limitations are fully understood.

All unused and non-functioning equipment should be disconnected and removed from the system to provide more working room in the facility. Further, the facility should be purged of all unnecessary materials and items.

The building should be reviewed by the Town's CEO and/or Safety Officer (or other qualified personnel), as there may be workplace safety issues that need to be addressed.

Discussions with the Department of Health should begin so that it is understood if any changes will be required if the system transfers from commercial to municipal ownership.

6. PROPOSED WATER DISTRICT OPTIONS

a. General

Unless the well capacities can be better defined, the ability for the water service area to expand is questionable. Nonetheless, as capacity expansion could be as simple as drilling a third well, it may make sense to create a Water District to match the currently proposed Sewer District.

b. Option 1 - Existing SBP Properties

The following properties are currently identified as being in the Schoharie Business Park and would be one logical Water District option:

Tax Map ID	Owner	Assessed Valuation (2019)	Notes
48.-4-25.2	BJ Hospitality LLC	$1,216,700	Quality Inn Motel
48.-4-25.12	Teixeira, Carlos	$560,000	Dunkin Donuts
48.-4-25.111	7 Summits LLC	$80,000	Roads, Wastewater Facilities, and Water Facilities
48.-4-25.112	Schoharie Park LLC	$1,100,000	Mobil Mart
.48.-4-25.113	County of Schoharie	$ 90,000	Vacant County land
48.-4-25.114	7 Summits LLC	$80,000	Vacant
48.-4-25.115	County of Schoharie	$1,050,000	County Office Complex
48.-4-25.116	Milliron, Ladain	$300,000	Day Care Center
48.-4-25.117	Schoharie Eagle Property	$50,000	Vacant
48.-4-25. 118	Shaul Farms Inc	$63,300	Farm Field with Sewer Outfall
48.-4-25.119	Schoharie Eagle Property	$390,000	Rural Development
48.-4-26.1	Stanton, Horace	$115,000	House and Farm
48.-4-26.2	7 Summits LLC	$25,000	Vacant
		$5,120,000	

c. Option 2 - Expanded District

The map in Appendix G shows a potential expansion area, which consist of 4 parcels on the north/east side of Rte. 30 A. This expansion area is the same as that for the Sewer District which is currently being formed. The lower elevations of these parcels (approximately up to elevation 680') could be served by the existing water system without the use of additional booster pumping stations. It is assumed that all extensions from the existing system will be made by the individual property owners. If NYSDOT requires the Town to own the Rte. 30 crossing(s), these can be dedicated to the Town after private construction.

The table below shows information on the 4 parcels in the potential expansion area:

Tax Map ID	Owner	Assessed Valuation (2019)	Notes
48.-4-21	Schoharie/Schenectady BOCES	$1,883,800	BOCES
48.-4-22	Constitution Pipeline, LLC	$350,700	Vacant Property along I-88
48.-4-23	Armstrong & Ruckdeschel	$92,300	Residence
48.-4-24	Schrader, John and Corrie	$111,400	Residence
		$2,437,500	

Any connection of new parcels would be subject to provisions of the District's Water Regulations, including verification of system capacity and any required source, treatment, storage, and distribution system expansion or upgrade.

d. Proposed Improvements

The proposed infrastructure improvements are identified on the mapping in Appendix G, and the costs of these improvements (including District Formation Costs) are presented in Appendix H. The O&M cost increases and proposed Water budget are also presented in Appendix H.

7. CONCLUSIONS AND RECOMMENDATIONS

Given the circumstances with operational deficiencies, the best course of action for the existing water customers is for the Town to form a Water District. This approach will lead to necessary corrective actions and establishment of the administrative practices required to effectively operate and maintain the system. If the District is formed, all formation costs will be placed on the District and its users.

Based on feedback from both the Town Board and local property owners, the district is proposed to include the properties identified on the map in Appendix I.

The Water Use Fee calculation methodology is summarized as follows:

1. Total Annual Costs = Annual O&M Costs plus Debt Service
   A. Debt Service includes District Formation Costs plus Capital Improvements

2. 50% of Total Annual Costs to be paid on a Benefit Unit Basis:
   A. 1.0 Benefit Unit for properties connected to water
   B. 0.5 Benefit Unit for buildable commercial properties
   C. 0.0 Benefit Units for unconnected residential properties, flood zone properties, and unconnected properties north of Rte. 30A

3. 50% of Total Annual Costs to be paid on Metered Usage Basis. Usage will be based on water meter readings.

Based on feedback from the Town Board and existing water customers, a reduced-scope capital project is desired to lessen costs. Assuming a reduced-scope capital improvement project in the amount of $100,000 (repaid over 5 years) and Annual Operating Costs in the amount of $30,000 per year, the projected user fees per parcel are identified in the table below:

Tax Map ID	Owner	Property Description	Benefit Units	Metered Usage (%)	Annual Water Charge[(1)(2)]
48.-4-25.2	BJ Hospitality LLC	Quality Inn Motel	1.0	61.46	$19,208
48.-4-25.12	Teixeira, Carlos	Dunkin Donuts	1.0	9.65	$5,617
48.-4-25.111	7 Summits LLC	Roads, Wastewater Facilities, and Water Facilities	0.5	0	$1,543
48.-4-25.112	Schoharie Park LLC	Mobil Mart	1.0	11.10	$5,998
.48.-4-25.113	County of Schoharie	County Vacant Lot	0.5		$1,543
48.-4-25.114	7 Summits LLC	Vacant	0.5		$1,543
48.-4-25.115	County of Schoharie	County Office Complex	1.0	10.87	$5,937
48.-4-25.116	Milliron, Ladain	Day Care Center	1.0	6.27	$4,731
48.-4-25.117	Schoharie Eagle Property	Vacant	0.5		$1,543
48.-4-25. 118	Shaul Farms Inc	Farm Field with Sewer Outfall	0.0		$0
48.-4-25.119	Schoharie Eagle Property	Rural Development	1.0	0.66	$3,259
48.-4-26.1	Stanton, Horace	Farm and Residence	0.0		$0
48.-4-26.2	7 Summits LLC	Vacant	0.5		$1,543
48.-4-21	Schoharie/Schenectady BOCES	BOCES	0.0		$0
48.-4-22	Constitution Pipeline, LLC	Vacant Property along I-88	0.0		$0
48.-4-23	Armstrong & Ruckdeschel	Residence	0.0		$0
48.-4-24	Schrader, John and Corrie	Residence	0.0		$0
		Totals	**8.5**	**100**	**$52,465**

Notes:

1. Metered-usage portion of Annual Water Charge is based on metered water usage data from November 1, 2017 through February/March, 2019.
2. When properties are connected or otherwise become Buildable, an appropriate Annual Water Charge will be established.

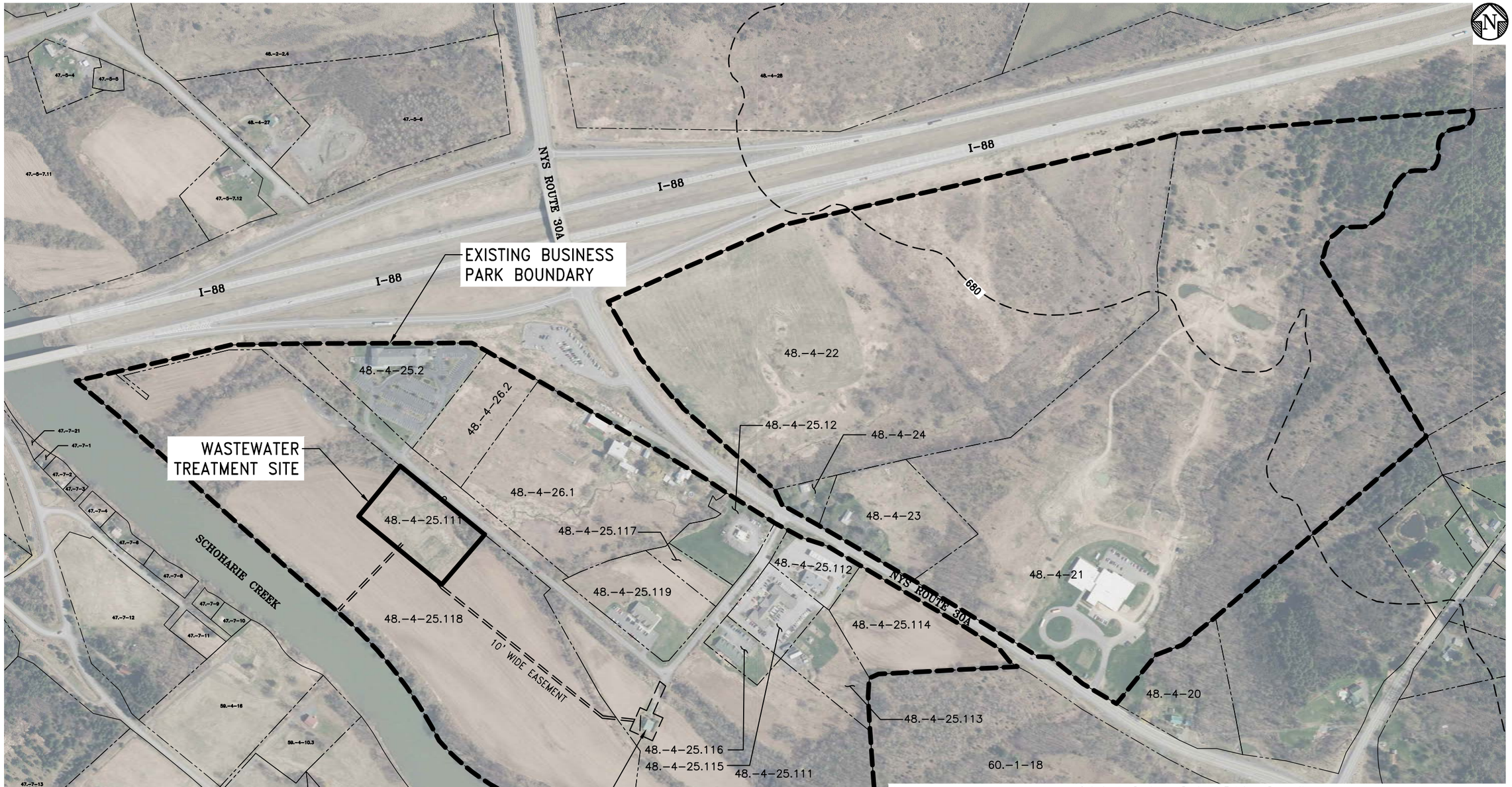
With completion of the Map, Plan and Report, the following steps remain to be taken toward Water District Formation:

1. Town publishes Notice of Public Hearing for District Formation
2. Town conducts SEQR evaluation and completes SEQR Process
3. Town holds Public Hearing on District Formation
4. Town adopts Resolution to Form District (subject to Permissive Referendum)
5. If no petition for referendum, Town adopts Order to Form District.
6. Town executes required Legal Notices and Filings with State Comptroller.

As soon as the District is formed, the property, infrastructure, and assets of the water system will need to be transferred to the Water District (Town). Thereafter, the Town can begin Operation of the Maintenance of the system, including implementation of recommended improvements within the Capital Improvement authorization.

APPENDIX A

SCHOHARIE BUSINESS PARK MAPPING



Schoharie Business Park – Existing Properties

Tax Map ID	Owner	Address	Assessed Valuation – 2019
48.-4-25.2	BJ Hospitality LLC	106 Holiday Way	$1,216,700
48.-4-25.12	Teizeira, Carlos	106 Park Place	$560,000
48.-4-25.111	7 Summits LLC	Holiday Way	$80,000
48.-4-25.112	Schoharie Park LLC	211 State Route 30A	$1,100,000
48.-4-25.113	County of Schoharie	Park Place	$90,000
48.-4-25.114	7 Summits LLC	State Route 30A	$80,000
48.-4-25.115	County of Schoharie	113 Park Place	$1,050,000
48.-4-25.116	Milliron, Ladain	121 Park Place	$300,000
48.-4-25.117	Schoharie Eagle Properties	108 Holiday Way	$50,000
48.-4-25.118	Shaul Farms Inc	Holiday Way	$63,300
48.-4-25.119	Schoharie Eagle Properties	108 Holiday Way	$390,000
48.-4-26.1	Stanton, Horace	239 State Route 30A	$115,000
48.-4-26.2	7 Summits LLC	Holiday Way	$25,000
		Total =	$5,120,000

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Consultant

SCHOHARIE BUSINESS PARK
WATER DISTRICT
SCHOHARIE COUNTY NEW YORK STATE

Stamp

Remarks	Date	Issue/Rev.

Project Number	2018047
Drawn By	MB
Designed By	MDH
Checked By	MDH
Date	4/1/19
Scale	1"=200'
File Name	WATER DISTRICT MAP

Sheet Title

EXISTING BUSINESS PARK

Sheet No.

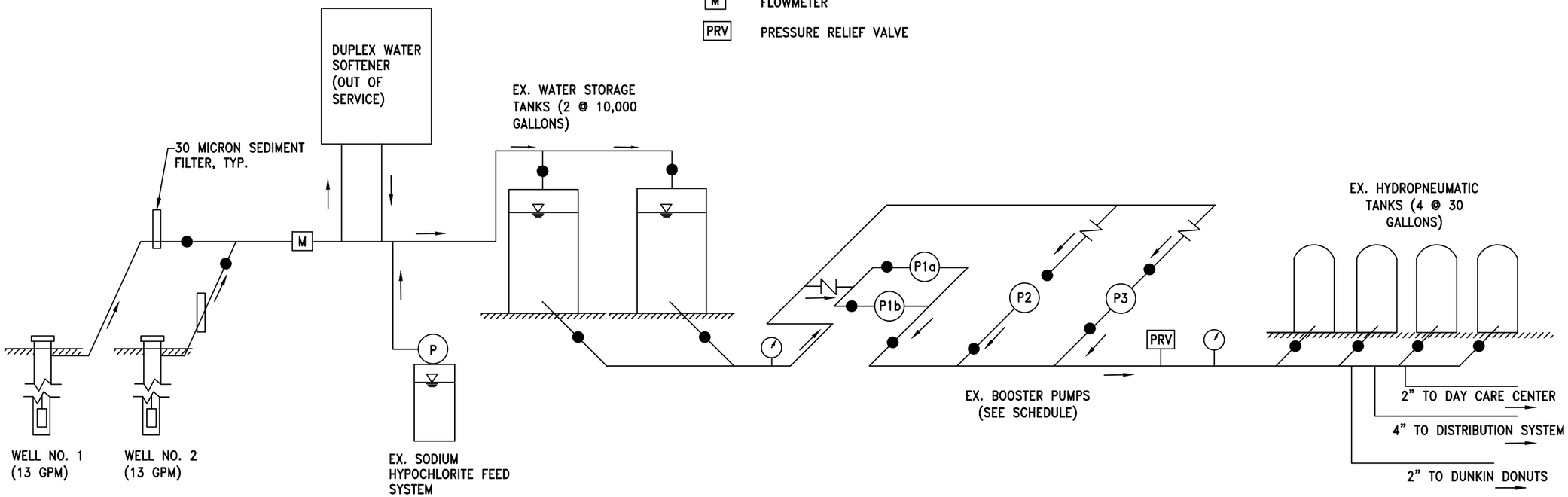
K:\APPS\SDSKPROJ\2018047\DWG\Water District Map.dwg, Existing Business Park, 3/6/2020 2:07:45 PM, DWG To PDF.pc3

APPENDIX B

EXISTING WATER SYSTEM SCHEMATIC

LEGEND

- P — PUMP
- PRESSURE GAUGE/MONITORING POINT
- EX. GATE/BALL VALVE
- EX. CHECK VALVE
- M — FLOWMETER
- PRV — PRESSURE RELIEF VALVE



BOOSTER PUMP SCHEDULE				
I.D.	CAPACITY	HP	PHASE/VOLTAGE	NOTES
P1a	90 GPM @ 206 FT.	7.5	3/230 V	PRIMARY DOMESTIC USE
P1b	90 GPM @ 206 FT.	7.5	3/230 V	STANDBY (MANUAL SWITCHOVER)
P2	UNKNOWN	20	3/230 V	HIGH DEMAND
P3	UNKNOWN	20	3/230 V	HIGH DEMAND

NOTES:

1. EXCEPT FOR WELL PUMPS, ALL EQUIPMENT SHOWN IS LOCATED WITHIN WATER TREATMENT BUILDING.
2. BOOSTER PUMPS OPERATE BETWEEN APPROXIMATELY 54 AND 84 PSI.
3. VALVES ON WELL SUPPLY LINES ARE THROTTLED.
4. PUMPS P1a and P1b OPERATE WITH VFD SPEED CONTROL

REVISED: 3/6/20

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SCHOHARIE BUSINESS PARK
WATER DISTRICT
SCHOHARIE COUNTY NEW YORK STATE

Project Number	2018047
Drawn By	DK
Designed By	MDH
Checked By	MDH
Date	7/26/18
Scale	N.T.S.
File Name	EXISTING SYSTEM SCHEMATIC

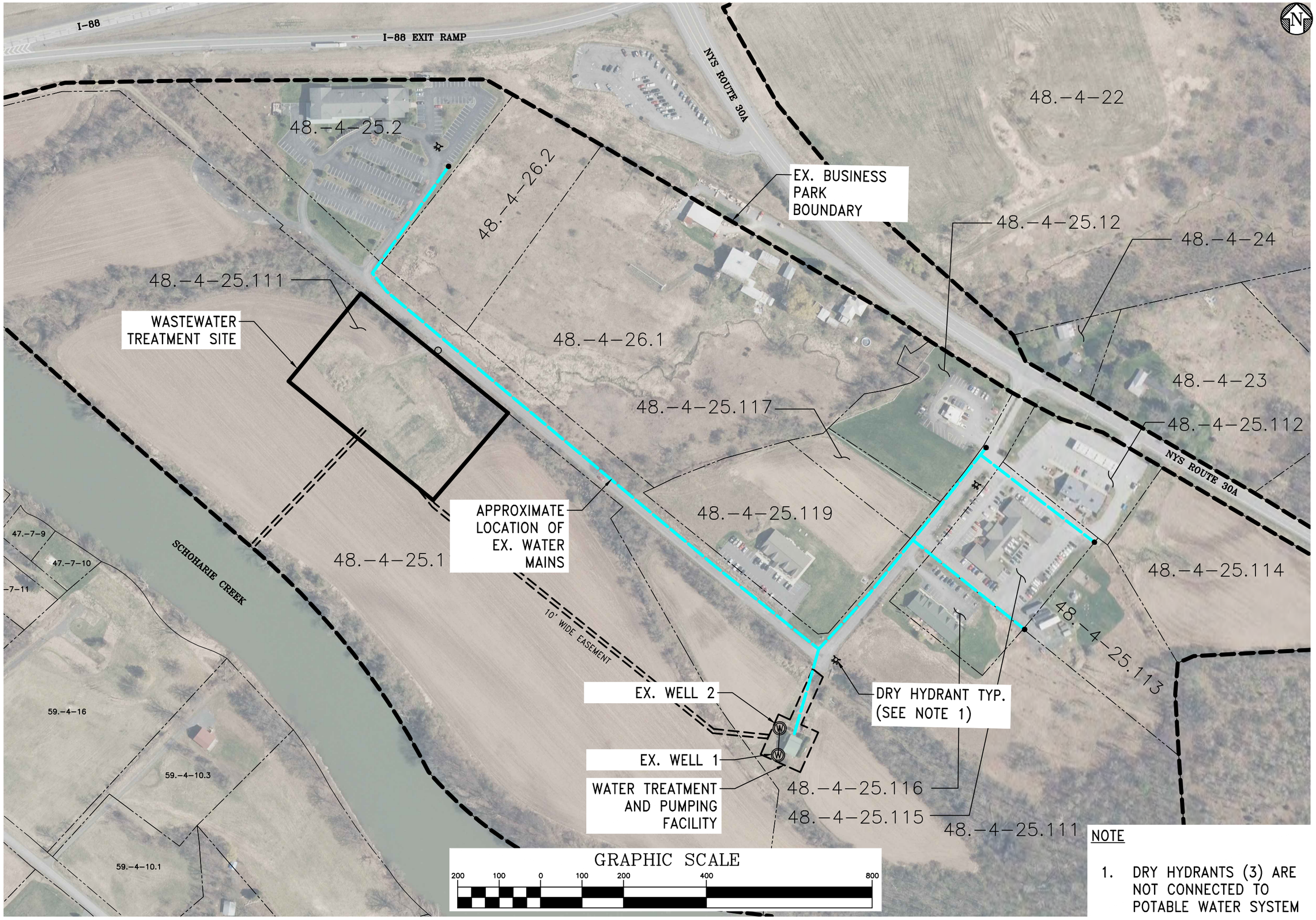
Sheet Title

EXISTING WATER SYSTEM SCHEMATIC

Sheet No.

APPENDIX C

EXISTING WATER SYSTEM PLAN



NOTE

1. DRY HYDRANTS (3) ARE NOT CONNECTED TO POTABLE WATER SYSTEM

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Consultant

SCHOHARIE BUSINESS PARK
WATER DISTRICT
SCHOHARIE COUNTY NEW YORK STATE

Stamp

Issue Rev.	Date	Remarks

Project Number	2018047
Drawn By	ED
Designed By	MDH
Checked By	MDH
Date	1/2/19
Scale	1"=100'
File Name	WATER

Sheet Title

GENERAL PLAN
EXISTING
CONDITIONS

Sheet No.

K:\APPS\SDSKPROJ\2018047\DWG\Water District Maps.dwg, GENERAL PLAN, 3/6/2020 2:09:45 PM, DWG To PDF.pc3

APPENDIX D

RAW WATER QUALITY DATA

(518) 525-5475 **ST. PETER'S HOSPITAL ENVIRONMENTAL LABORATORY** 19 WAREHOUSE ROW ALBANY, NEW YORK 12205

Fax To: 295-8453

Sample ID: AT12758
Date Received: 09/17/2014
Time Received: 10:31
Date Finalized: 10/10/2014
PO Number:
Your Ref:

Customer: Schoharie Cnty Health Dept
Owner: Schoharie Park Water Company
Sample Loc: 133 Park Place
Sample Pt: RAW 01

Collect Date: 09/16/2014
Collect Time: 11:30
Collected by: CARL CHRISTMAN
Receipt Temp: 20 C see note 1

Water Source: Drilled Well
Chlorinated: No *Field Residual Chlorine:*

Potability: Yes
Grab/Comp: Grab

Laboratory Report

Test	Result	MCL	Qualifiers	Units	Method Used	Analyst	Analysis Date
Color	<5	15	T	UNITS	SM 18-21 2120B	MBF	9/17/2014
Turbidity	2.2	5	T	NTU	EPA 180.1 Rev2.0	MBF	9/17/2014
Odor	None Detected	3		TON	SM18-20 2150B	MBF	9/17/2014
pH	6.8		H	Std. units	SM18-21 4500-H B	MBF	9/17/2014
Alkalinity, Tot(CaCO3)	301		AT	mg/L	SM2320B	MBF	9/22/2014
Iron	0.20	0.30		mg/L	SM3111B	NSS	9/18/2014
Manganese	0.44	0.30	X	mg/L	SM3111B	NSS	9/18/2014
Chloride	36	250		mg/L	EPA300.1	MBF	9/17/2014
Sulfate	221	250	T	mg/L	EPA300.1	MBF	9/17/2014
Sodium	12.2			mg/L	SM3111B	NSS	9/29/2014
Copper	0.13	1.3		mg/L	SM3111B	NSS	9/25/2014
Zinc	0.30	5.0		mg/L	SM3111B	NSS	9/30/2014
Corrosivity Result	-0.53				SM 18-19 2330	CHR	9/29/2014
Dissolved Solids, Total	712	500	X	mg/L	SM 18-21 2540C	BP	9/19/2014
Hardness, Ca	390			mg/L	SM2340C	MBF	9/23/2014

Qualifiers Key:
- X Exceeds maximum contamination limit
- T Temperature outside specifications
- S(+/-) Lab control sample outside acceptance limits (+ Result may be biased high / - Result may be biased low)
- R Duplication outside acceptance limits
- A Sample contained air bubble or headspace
- M(+/-) Matrix spike recovery outside acceptance limits
- H Hold time exceeded
- B Analyte detected in blank

Legend: < Less Than, > Greater Than mg/L=PPM, ug/L=PPB If no collection time was given, 00:00 is reported

MCL = Maximum Contaminant Level referenced from New York State Subpart 5-1 of the Public Drinking Water Standards and/or National Primary/Secondary Drinking Water Standards.

Note 1: Per ELAP requirements, water analyzed for alkalinity, color, conductivity, nitrate, nitrite, sulfate, organics, UV absorbance, non-potable bacteriological analyses, BOD/CBOD, solids and phosphorus (total & ortho), should be received on ice to indicate the chilling process was begun. ELAP requirements specify that temperatures equal to or less than 4 degrees C are required for potable samples and equal to or less than 6 degrees C for non-potable samples. Samples should not be frozen.

Comments:

ALKALINITY: There are no specific limits set for alkalinity since a high value does not render the water unfit for drinking. If the pH is below 8.3 the alkalinity, if any, is due to bicarbonate; if above 8.3, carbonates are also present, though generally in considerably lower quantity than the bicarbonate. Alkalinity values like pH, aid in evaluating corrosive tendencies, but hardness, salt concentration, etc., also affect corrosion.

CORROSIVITY: For those samples collected where no field temperature is given, 8 degrees C is used to calculate corrosivity, as 8 degrees C is the average temperature of shallow ground water in NYS as referenced at www.epa.gov.

(518) 525-5475 **ST. PETER'S HOSPITAL ENVIRONMENTAL LABORATORY** 19 WAREHOUSE ROW ALBANY, NEW YORK 12205

Fax To: 295-8453

Sample ID: AT12758
Date Received: 09/17/2014
Time Received: 10:31
Date Finalized: 10/10/2014
PO Number:
Your Ref:

Customer: Schoharie Cnty Health Dept
Owner: Schoharie Park Water Company
Sample Loc: 133 Park Place
Sample Pt: RAW 01

Collect Date: 09/16/2014
Collect Time: 11:30
Collected by: CARL CHRISTMAN
Receipt Temp: 20 C see note 1

Water Source: Drilled Well
Chlorinated: No *Field Residual Chlorine:*

Potability: Yes
Grab/Comp: Grab

The value of your corrosivity is moderately corrosive.
EPA300.1: The surrogate recovery for dichloroacetate (DCA) for this sample was within acceptable limits at 101%. The acceptable limits are 90-115%.
IRON/MANGANESE: The total of the two should not exceed 0.50 mg/L.
PHYSICAL CHARACTERISTICS: Color, odor, turbidity and/or pH testing was set up at 14:40. Hold time for pH testing per ELAP requirements is 15 minutes for potable and non-potable water samples. Odor and pH were tested at 21 degrees Celsius. Color is reported as apparent color. pH is not a state certified analysis.
SODIUM: The following are suggested limits for those persons on physician ordered sodium restricted diets: Moderately restricted diet---water should contain less than 270 mg/L; Severely restricted diet---water should contain less than 20 mg/L.

Test procedures for all analyses meet NELAC requirements unless noted. If you have any questions, please call the laboratory.

John Wilson

John Wilson
Environmental Laboratory Supervisor and contact person
If you have questions, please call.
(518) 525-5480/5479

New York State DOH E.L.A.P. # 10350

Reviewed by Brian Collins
These results relate to samples as received.

(518) 525-5475 **ST. PETER'S HOSPITAL ENVIRONMENTAL LABORATORY** 19 WAREHOUSE ROW ALBANY, NEW YORK 12205

Fax To: 295-8453

Sample ID: AT12759
Date Received: 09/17/2014
Time Received: 10:31
Date Finalized: 10/10/2014
PO Number:
Your Ref:

Customer: Schoharie Cnty Health Dept
Owner: Schoharie Park Water Company
Sample Loc: 133 Park Place
Sample Pt: RAW 02

Collect Date: 09/16/2014
Collect Time: 11:00
Collected by: CARL CHRISTMAN
Receipt Temp: 20 C see note 1

Water Source: Drilled Well
Chlorinated: No *Field Residual Chlorine:*

Potability: Yes
Grab/Comp: Grab

Laboratory Report

Test	Result	MCL	Qualifiers	Units	Method Used	Analyst	Analysis Date
Color	<5	15	T	UNITS	SM 18-21 2120B	MBF	9/17/2014
Turbidity	1.5	5	T	NTU	EPA 180.1 Rev2.0	MBF	9/17/2014
Odor	None Detected	3		TON	SM18-20 2150B	MBF	9/17/2014
pH	7.6		H	Std. units	SM18-21 4500-H B	MBF	9/17/2014
Alkalinity, Tot(CaCO3)	331		AT	mg/L	SM2320B	MBF	9/22/2014
Iron	0.65	0.30	X	mg/L	SM3111B	NSS	9/18/2014
Manganese	0.13	0.30		mg/L	SM3111B	NSS	9/18/2014
Chloride	98	250		mg/L	EPA300.1	MBF	9/17/2014
Sulfate	156	250	T	mg/L	EPA300.1	MBF	9/17/2014
Sodium	194			mg/L	SM3111B	NSS	9/29/2014
Copper	<0.02	1.3		mg/L	SM3111B	NSS	9/25/2014
Zinc	<0.01	5.0		mg/L	SM3111B	NSS	9/30/2014
Corrosivity Result	-0.17				SM 18-19 2330	CHR	9/29/2014
Dissolved Solids, Total	722	500	X	mg/L	SM 18-21 2540C	BP	9/19/2014
Hardness, Ca	130			mg/L	SM2340C	MBF	9/23/2014

Qualifiers Key:
- X Exceeds maximum contamination limit
- T Temperature outside specifications
- S(+/-) Lab control sample outside acceptance limits (+ Result may be biased high / - Result may be biased low)
- R Duplication outside acceptance limits
- A Sample contained air bubble or headspace
- M(+/-) Matrix spike recovery outside acceptance limits
- H Hold time exceeded
- B Analyte detected in blank

Legend: < Less Than, > Greater Than mg/L=PPM, ug/L=PPB If no collection time was given, 00:00 is reported

MCL = Maximum Contaminant Level referenced from New York State Subpart 5-1 of the Public Drinking Water Standards and/or National Primary/Secondary Drinking Water Standards.

Note 1: Per ELAP requirements, water analyzed for alkalinity, color, conductivity, nitrate, nitrite, sulfate, organics, UV absorbance, non-potable bacteriological analyses, BOD/CBOD, solids and phosphorus (total & ortho), should be received on ice to indicate the chilling process was begun. ELAP requirements specify that temperatures equal to or less than 4 degrees C are required for potable samples and equal to or less than 6 degrees C for non-potable samples. Samples should not be frozen.

Comments:

ALKALINITY: There are no specific limits set for alkalinity since a high value does not render the water unfit for drinking. If the pH is below 8.3 the alkalinity, if any, is due to bicarbonate; if above 8.3, carbonates are also present, though generally in considerably lower quantity than the bicarbonate. Alkalinity values like pH, aid in evaluating corrosive tendencies, but hardness, salt concentration, etc., also affect corrosion.

CORROSIVITY: For those samples collected where no field temperature is given, 8 degrees C is used to calculate corrosivity, as 8 degrees C is the average temperature of shallow ground water in NYS as referenced at www.epa.gov.

Fax To: 295-8453

Sample ID: AT12759
Date Received: 09/17/2014
Time Received: 10:31
Date Finalized: 10/10/2014
PO Number:
Your Ref:

Customer: Schoharie Cnty Health Dept
Owner: Schoharie Park Water Company
Sample Loc: 133 Park Place
Sample Pt: RAW 02

Collect Date: 09/16/2014
Collect Time: 11:00
Collected by: CARL CHRISTMAN
Receipt Temp: 20 C see note 1

Water Source: Drilled Well
Chlorinated: No *Field Residual Chlorine:*

Potability: Yes
Grab/Comp: Grab

The value of your corrosivity is moderately corrosive.
EPA300.1: The surrogate recovery for dichloroacetate (DCA) for this sample was within acceptable limits at 101%. The acceptable limits are 90-115%.
IRON/MANGANESE: The total of the two should not exceed 0.50 mg/L.
PHYSICAL CHARACTERISTICS: Color, odor, turbidity and/or pH testing was set-up at 14:30. Hold time for pH testing per ELAP requirements is 15 minutes for potable and non-potable water samples. Odor and pH were tested at 21 degrees Celsius. Sample was filtered and color is reported as true color. pH is not a state certified analysis.
SODIUM: The following are suggested limits for those persons on physician ordered sodium restricted diets: Moderately restricted diet---water should contain less than 270 mg/L; Severely restricted diet---water should contain less than 20 mg/L.

Test procedures for all analyses meet NELAC requirements unless noted. If you have any questions, please call the laboratory.

John Wilson
Environmental Laboratory Supervisor and contact person
If you have questions, please call.
(518) 525-5480/5479

New York State DOH E.L.A.P. # 10350

Reviewed by Brian Collins
These results relate to samples as received.

APPENDIX E

DRY HYDRANT SYSTEM OPERATION

CENTRAL BRIDGE FIRE DEPARTMENT

S O P 7

SCHOHARIE BUSINESS PARK HOTEL 7/18/99

HOTEL: 295-6088
Construction: Wood
Fire Dept: Central Bridge 295-8844
Alarm Syst: Smoke and heat to front desk and alrm company
Sprinklers: Well supplied plus (2-4 10,000 gal tanks)
Water supply: Fire pond 1500' south of hotel
Water delivery: Dry hydrant system

Fire Alarms:

Hotel employees will call Fire Control with the following information and also try to determine the nature of the problem and start evacuation.

Alarm information:

FIRE: Zone # _____
Room detector Rm#_____
or Hall detector
or Flow or Laundry room alarm

Total number of occupants _____

Fire Dept. Initial Response:

Room Detector: Only CBFD with Amb

Hall Detector: CBFD with Amb,SFD. standby for Scho-Wright and CFD(with Ladder if second floor)

Flow or Laundry Room Alarm: CBFD with Amb,SFD,CFD(with ladder if second floor),Scho-Wright,CFD Amb,EMS Coor. 4862. standby for,EVFD, MFD.

The 1st engine will proceed to the hydrant near the Hotel and lay 2 2-1/2' lines to the building. Contact will be made with the Hotel personnel at the front desk who will have keys to all locks that it will be necessary to pass through.

Fire dept. will assist with safe evacuation of all occupants starting with those furthest from the fire.

Fire dept. will attack the fire by laying 2-1/2' lines from the engine to the main corridor and then splitting that to 1-1/2' lines.

The second engine (CBFD or SFD) will go to the fire pond and prepare to supply the dry hydrant system.

If necessary, Cobleskill Engine 5021 has 2000' 5" hose that can be run to the Schoharie Creek.

Tankers can also be used if needed.

APPENDIX F

WATER PRODUCTION DATA

SCHOHARIE BUSINESS PARK WATER SYSTEM OPERATIONS DATA
2018

PERIOD	ADD_{30}	MDD	Notes
Jan-18	3749	7010	
Feb-18	3652	6410	
Mar-18	4001	6390	
Apr-18	4545	7910	
May-18	6225	11470	Same data as June
Jun-18	6225	11470	Same data as May
Jul-18	8287	20120	
Aug-18	9106	17210	
Sep-18	7390	19720	
Oct-18	6571	13190	
Nov-18	6803	13600	
Dec-18	5623	13690	
Average	6015	12349	
Maximum	9106	20120	
Minimum	3652	6390	

Notes:

1. ADD_{30} (GPD) = Monthly Average Demand in Gallons per Day
2. MDD (GPD) = Maximum Day Demand in Gallons per Day

SCHOHARIE BUSINESS PARK WATER SYSTEM OPERATIONS DATA
2017

PERIOD	ADD_{30}	MDD	Notes
Jan-17	3324	10280	
Feb-17	3430	8320	
Mar-17	3406	7270	
Apr-17	5438	12260	
May-17	5417	12820	
Jun-17	6236	15050	
Jul-17	0	0	No Report Available
Aug-17	0	0	No Report Available
Sep-17	6546	16430	
Oct-17	4806	11690	
Nov-17	4157	8760	
Dec-17	5204	14450	
Average	3997	9778	
Maximum	6546	16430	
Minimum	0	0	

Notes:

1. ADD_{30} (GPD) = Monthly Average Demand in Gallons per Day
2. MDD (GPD) = Maximum Day Demand in Gallons per Day

SCHOHARIE BUSINESS PARK WATER SYSTEM OPERATIONS DATA
2016

PERIOD	ADD_{30}	MDD	Notes
Jan-16	2367	5860	
Feb-16	2598	4790	
Mar-16	3395	5780	
Apr-16	3888	6611	
May-16	4816	9240	
Jun-16	5126	8801	
Jul-16	5660	15030	
Aug-16	7133	16090	
Sep-16	6207	14240	
Oct-16	5442	12280	
Nov-16	3730	7775	
Dec-16	3470	6130	
Average	4486	9386	
Maximum	7133	16090	
Minimum	2367	4790	

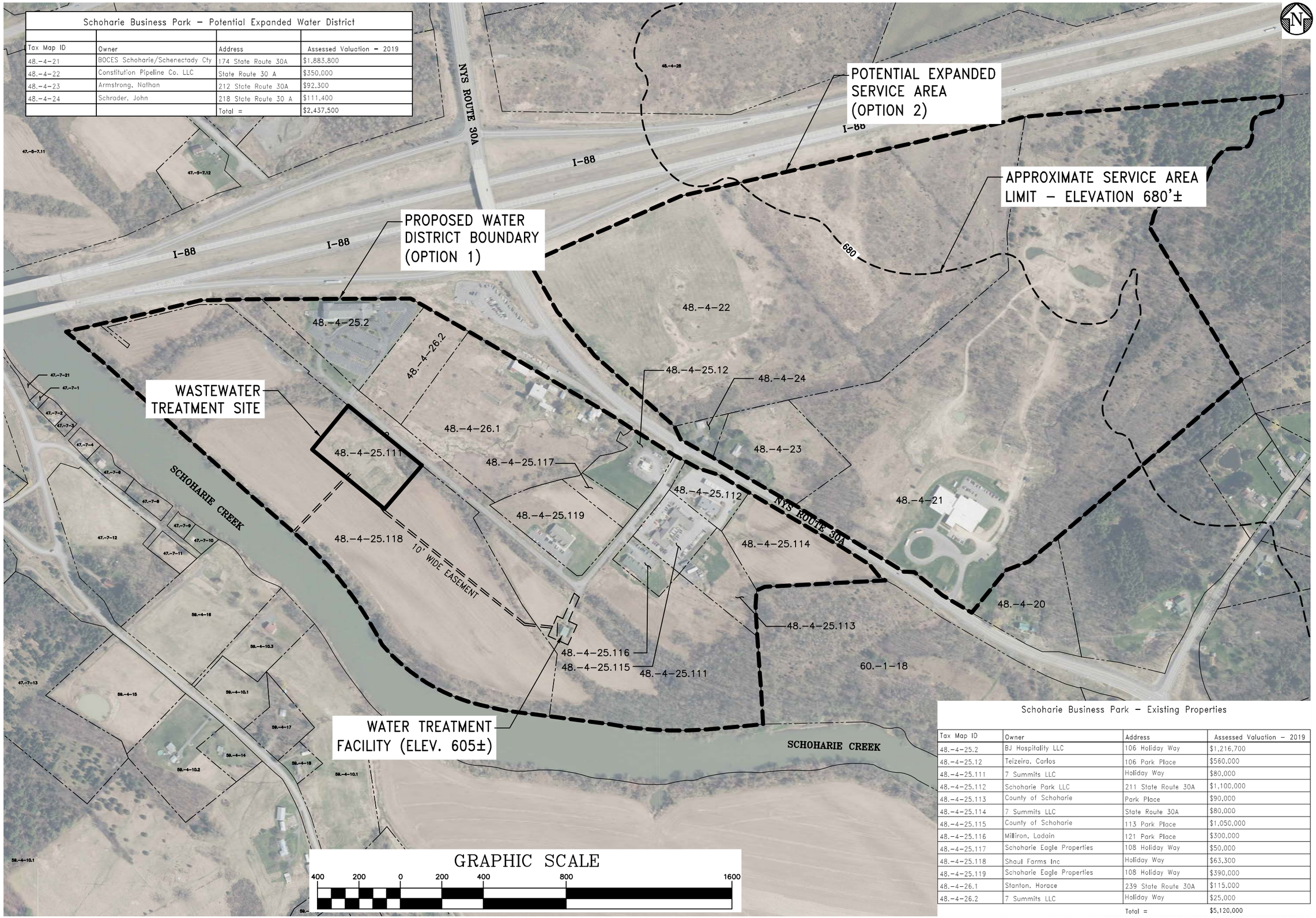
Notes:

1. ADD_{30} (GPD) = Monthly Average Demand in Gallons per Day
2. MDD (GPD) = Maximum Day Demand in Gallons per Day

APPENDIX G

MAPPING OF WATER DISTRICT OPTIONS

Schoharie Business Park – Potential Expanded Water District			
Tax Map ID	Owner	Address	Assessed Valuation – 2019
48.–4–21	BOCES Schoharie/Schenectady Cty	174 State Route 30A	$1,883,800
48.–4–22	Constitution Pipeline Co. LLC	State Route 30 A	$350,000
48.–4–23	Armstrong, Nathan	212 State Route 30A	$92,300
48.–4–24	Schrader, John	218 State Route 30 A	$111,400
		Total =	$2,437,500



GRAPHIC SCALE

400 200 0 200 400 800 1600

Schoharie Business Park – Existing Properties

Tax Map ID	Owner	Address	Assessed Valuation – 2019
48.–4–25.2	BJ Hospitality LLC	106 Holiday Way	$1,216,700
48.–4–25.12	Teizeira, Carlos	106 Park Place	$560,000
48.–4–25.111	7 Summits LLC	Holiday Way	$80,000
48.–4–25.112	Schoharie Park LLC	211 State Route 30A	$1,100,000
48.–4–25.113	County of Schoharie	Park Place	$90,000
48.–4–25.114	7 Summits LLC	State Route 30A	$80,000
48.–4–25.115	County of Schoharie	113 Park Place	$1,050,000
48.–4–25.116	Milliron, Ladain	121 Park Place	$300,000
48.–4–25.117	Schoharie Eagle Properties	108 Holiday Way	$50,000
48.–4–25.118	Shaul Farms Inc	Holiday Way	$63,300
48.–4–25.119	Schoharie Eagle Properties	108 Holiday Way	$390,000
48.–4–26.1	Stanton, Horace	239 State Route 30A	$115,000
48.–4–26.2	7 Summits LLC	Holiday Way	$25,000
		Total =	$5,120,000

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Consultant

SCHOHARIE BUSINESS PARK
WATER DISTRICT
SCHOHARIE COUNTY NEW YORK STATE

Stamp

Issue/Rev.	Date	Remarks

Project Number	2018047
Drawn By	MB
Designed By	MDH
Checked By	MDH
Date	4/1/19
Scale	1"=200'
File Name	WATER DISTRICT MAP

Sheet Title

PROPOSED WATER DISTRICT OPTIONS

Sheet No.

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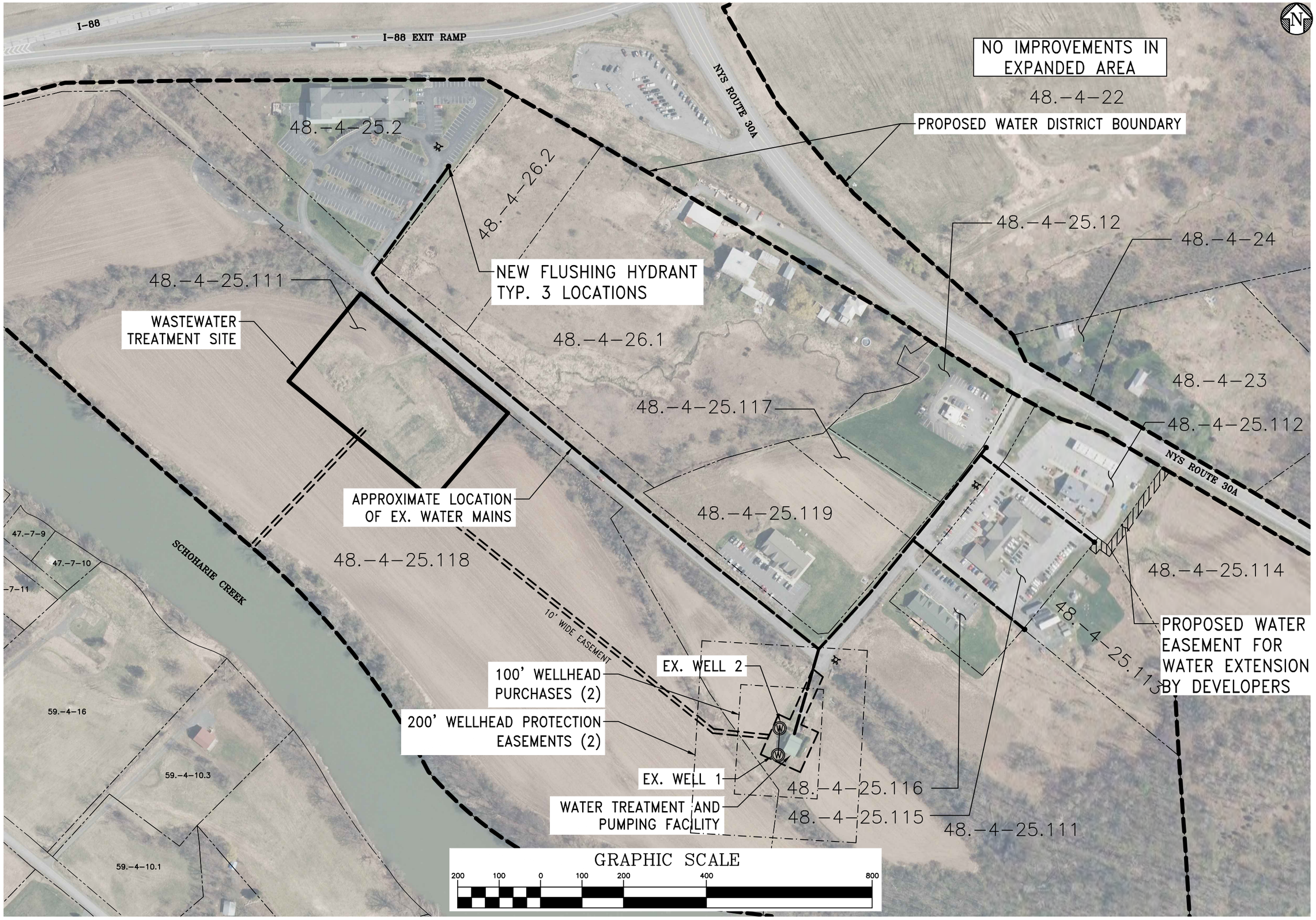
APPENDIX H

PROPOSED IMPROVEMENTS



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Consultant

SCHOHARIE BUSINESS PARK
WATER DISTRICT

SCHOHARIE COUNTY NEW YORK STATE

Stamp

Issue/Rev.	Date	Remarks

Project Number	2018047
Drawn By	MB
Designed By	MDH
Checked By	MDH
Date	4/1/19
Scale	1"=100'
File Name	WATER DISTRICT MAP

Sheet Title

PROPOSED IMPROVEMENTS

Sheet No.

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APPENDIX I

USER COST CALCULATIONS

Schoharie Business Park - Water District Charge Schedule (Meter-based)

Buildable Vacants Charged

Tax Map ID	Owner	Address	Common Name	Benefit Units	Fixed Charge Factor	Annual Fixed Charge	Meter Charge Factor	Annual Meter Charge	Total Annual Charge	Total Monthly Charge
48.-4-25.2	BJ Hospitality LLC	160 Hol. Way	Hotel	1.0	0.118	3,086.04	61.46%	$16,122	$ 19,207.83	$ 1,600.65
48.-4-25.12	Teixeira, Carlos	106 Park Pl	Dunkin	1.0	0.118	3,086.04	9.65%	$2,531	$ 5,617.37	$ 468.11
48.-4-25.111	7 Summits LLC	Holiday Way	Vacant	0.5	0.059	1,543.02		$0	$ 1,543.02	$ 128.59
48.-4-25.112	Schoharie Park LLC	211 State Route	Mobil	1.0	0.118	3,086.04	11.10%	$2,912	$ 5,997.72	$ 499.81
.48.-4-25.113	County of Schoharie	Park Pl	Vacant	0.5	0.059	1,543.02		$0	$ 1,543.02	$ 128.59
48.-4-25.114	7 Summits LLC	State Rte 30A	Vacant	0.5	0.059	1,543.02		$0	$ 1,543.02	$ 128.59
48.-4-25.115	County of Schoharie	113 Park Pl	County	1.0	0.118	3,086.04	10.87%	$2,851	$ 5,937.39	$ 494.78
48.-4-25.116	Milliron, Ladain	121 Park Pl	Daycare	1.0	0.118	3,086.04	6.27%	$1,645	$ 4,730.75	$ 394.23
48.-4-25.117	Schoharie Eagle	Park Pl	Vacant	0.5	0.059	1,543.02		$0	$ 1,543.02	$ 128.59
48.-4-25. 118	Shaul Farms Inc	Holiday Way	Vacant	0.0	0.000	0.00		$0	$ -	$ -
48.-4-25.119	Schoharie Eagle	108 Holiday Way	USDA	1.0	0.118	3,086.04	0.66%	$173	$ 3,259.17	$ 271.60
48.-4-26.1	Stanton, Horace	239 State Route	Vacant	0.0	0.000	0.00		$0	$ -	$ -
48.-4-26.2	7 Summits LLC	Holiday Way	Vacant	0.5	0.059	1,543.02		$0	$ 1,543.02	$ 128.59
48.-4-21	Constitution Pipe	Rte. 30A	I-88	0.0	0.000	0.00		$0	$ -	$ -
48.-4-22	BOCES	Rte. 30A	BOCES	0.0	0.000	0.00		$0	$ -	$ -
48.-4-23	Armstrong, et. al.	Rte. 30A	Res.	0.0	0.000	0.00		$0	$ -	$ -
48.-4-24	Schrader, J. and C.	Rte. 30A	Res.	0.0	0.000	0.00		$0	$ -	$ -
				8.5		26,231.36	1.000	$26,234	$52,465.33	$4,372.11

Total O&M =	$30,000	
Total Debt Service =	$22,463	(assumes $100,000 for district formation and capital improvement, 5 yrs., 4%)
Total Annual Cost =	$52,463	
Annual Cost for Fixed Charge =	$26,231	(50% of total)
Annual Cost for Meter Charge =	$26,231	(50% of total)

Principal	Term (yrs)
$100,000	**5**

Interest	Annual Payment
4.00%	$22,463
3.50%	$22,148
3.00%	$21,835

3/11/2020

TOWN OF SCHOHARIE
SCHOHARIE BUSINESS PARK - WATER SYSTEM IMPROVEMENTS
PROJECT SCOPE AND COST ESTIMATE

	Unit	Quantity	Unit Price	Total
1) Wells				
New Well Caps and Sanitary Improvements	EA	2	$1,000	$2,000
Pump Testing for Capacity Verification	EA	2	$2,500	$5,000
Raw Water Sampling and Testing	EA	4	$500	$2,000
New Well No. 3	LS	1	$20,000	$20,000
			Subtotal =	$29,000
2) Treatment				
Back-up Hypochlorite Feed Pump	LS	1	$1,000	$1,000
Finished Water Sampling and Testing	EA	4	$250	$1,000
Flushing and Cleaning of Ground Storage Tanks	LS	1	$5,000	$5,000
Purchase Field Test Kits (for Iron and Manganese)	LS	1	$1,000	$1,000
Blended Phosphate Chemical Feed System	LS	1	$5,000	$5,000
			Subtotal =	$13,000
3) Booster Pumping and Distribution				
Pump Control Panel Modifications	LS	1	$30,000	$30,000
Second On-line Domestic Feed Pump with VFD	LS	1	$5,000	$5,000
Booster Pump Discharge Flowmeter	LS	1	$5,000	$5,000
VFDs for High Demand Pumps	EA	2	$5,000	$10,000
Flushing Hydrants	EA	3	$5,000	$15,000
Fire Flow Testing	LS	1	$1,000	$1,000
			Subtotal =	$66,000
4) Miscellaneous				
Removal of Abandoned WTP Equipment	LS	1	$5,000	$5,000
Safety Improvements at WTP	LS	1	$5,000	$5,000
			Subtotal =	$10,000
			SUBTOTAL ALL CONSTRUCTION =	$118,000
			Contingency (10%) =	$11,800
			TOTAL ALL CONSTRUCTION =	$129,800
			Non-Construction (15%) =	$19,470
			Project Development, including Legal =	$12,500
			Surveys for Land Transfers =	$5,000
			Water Withdrawal Permit (DEC) =	$5,000
			Add'l Environmental Review (SEQR, Wetlands, Cultural Resources) =	$0
			Land Acquisition =	$7,500
			SUBTOTAL BUDGET =	**$179,270**
ACCRUED OPERATING COSTS (THROUGH 9/30/20)				
Licensed Operator -- partially combined with Sewer Operator	MO	6	$1,500	$9,000
Miscellaneous Expenses	MO	6	$500	$3,000
			GRAND TOTAL BUDGET =	**$191,270**

TOWN OF SCHOHARIE
SCHOHARIE BUSINESS PARK - WATER SYSTEM IMPROVEMENTS
OPERATION AND MAINTENANCE COST INCREASE

1) **Wells**	HP	Unit	Quantity	Unit Price	Total
Brush-hogging and Snowplowing		LS	1	$500	$500
				Subtotal =	$500

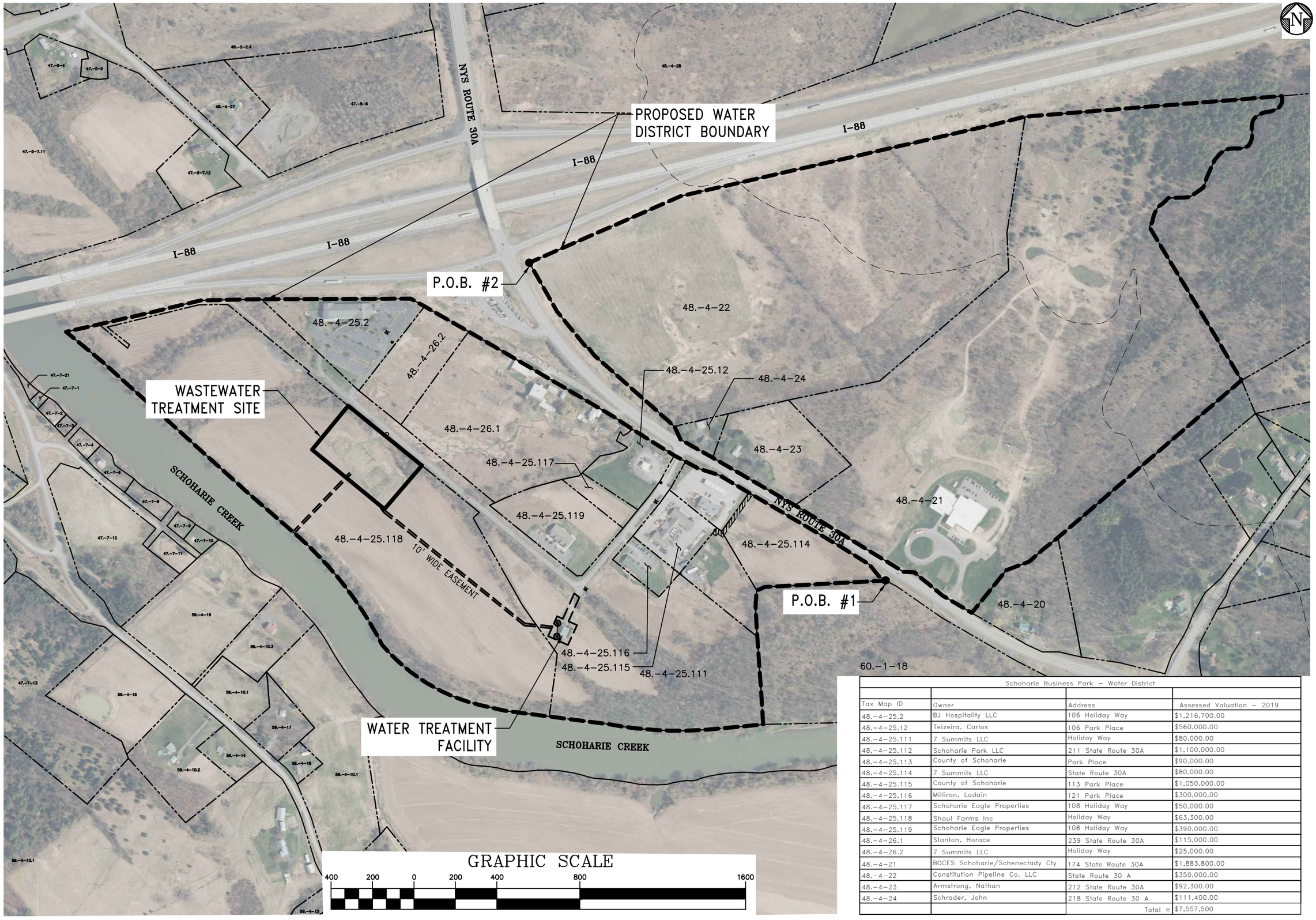
2) **Treatment**	HP	Unit	Quantity	Unit Price	Total
Sequestering Chemical (Blended Phosphate)		LS	1	$500	$500
Additional Process Control Testing		LS	1	$500	$500
				Subtotal =	$1,000

3) **Booster Pumping and Distribution**	HP	Unit	Quantity	Unit Price	Total
Annual Pump and Controls Service		LS	1	$1,000	$1,000
				Subtotal =	$1,000

4) **Miscellaneous**	Unit	Quantity	Unit Price	Total
Additional Cost for Licensed Operator	LS	1	$3,000	$3,000
Service Meter Readings (Quarterly)	LS	1	$500	$500
Backflow Preventer Administration	LS	1	$500	$500
			Subtotal =	$4,000
			TOTAL =	$6,500

APPENDIX J

PROPOSED WATER DISTRICT MAP AND DESCRIPTION



GRAPHIC SCALE

400 200 0 200 400 800 1600

Schoharie Business Park – Water District

Tax Map ID	Owner	Address	Assessed Valuation – 2019
48.-4-25.2	BJ Hospitality LLC	106 Holiday Way	$1,216,700.00
48.-4-25.12	Teizeira, Carlos	106 Park Place	$560,000.00
48.-4-25.111	7 Summits LLC	Holiday Way	$80,000.00
48.-4-25.112	Schoharie Park LLC	211 State Route 30A	$1,100,000.00
48.-4-25.113	County of Schoharie	Park Place	$90,000.00
48.-4-25.114	7 Summits LLC	State Route 30A	$80,000.00
48.-4-25.115	County of Schoharie	113 Park Place	$1,050,000.00
48.-4-25.116	Milliron, Ladain	121 Park Place	$300,000.00
48.-4-25.117	Schoharie Eagle Properties	108 Holiday Way	$50,000.00
48.-4-25.118	Shaul Farms Inc	Holiday Way	$63,300.00
48.-4-25.119	Schoharie Eagle Properties	108 Holiday Way	$390,000.00
48.-4-26.1	Stanton, Horace	239 State Route 30A	$115,000.00
48.-4-26.2	7 Summits LLC	Holiday Way	$25,000.00
48.-4-21	BOCES Schoharie/Schenectady Cty	174 State Route 30A	$1,883,800.00
48.-4-22	Constitution Pipeline Co. LLC	State Route 30 A	$350,000.00
48.-4-23	Armstrong, Nathan	212 State Route 30A	$92,300.00
48.-4-24	Schrader, John	218 State Route 30 A	$111,400.00
		Total =	$7,557,500

Lamont Engineers
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FACILITY OPERATIONS
197 ELM ST., COBLESKILL, NY 12043
(518) 234-4028
www.lamontengineers.com

Consultant

TOWN OF SCHOHARIE
SCHOHARIE BUSINESS PARK
WATER DISTRICT
SCHOHARIE COUNTY NEW YORK STATE

Stamp

Remarks	Date	Issue Rev.

Project Number	2018047
Drawn By	MB
Designed By	MDH
Checked By	MDH
Date	7/3/18
Scale	1"=200'
File Name	WATER

Sheet Title

PROPOSED WATER DISTRICT MAP

Sheet No.

SCHEDULE A

Water District Boundary – Section 1

ALL THAT DISTRICT BOUNDARY situate, lying and being on the southerly side of New York State Route 30A and Interstate 88, on the east side of the Schoharie Creek, and bounded by Barton S. and Brideen Finegan on the east, in the Town of Schoharie, County of Schoharie and State of New York, bounded and described as follows:

COMMENCING at a point (POB #1) at the south east corner of the 7 Summits LLC parcel 48.-4-25.114 on the south side of State Route 30A where the same is intersected by the division line between lands now or formerly of Barton S. and Brideen Finegan parcel 60.-1-18 on the south and the lands now and formerly of 7 Summits LLC parcel 48.-4-25.114 on the north; thence running South 86-55-31 West, 583.33 feet along the boundary line between lands now or formerly of Barton S. and Brideen Finegan on the south and the lands now and formerly of 7 Summits LLC parcel 48.-4-25.114 on the north; thence running along the boundary line the following two (2) courses and distance:

1. South 66-43-51 West, 23.60 feet;
2. South 66-23-36 West, 18.13 feet;

Thence running South 4-22-56 West, 76.01 feet along the division line between lands now or formerly of Barton S. and Brideen Finegan parcel 60.-1-18 on the east and County of Schoharie parcel 48.-4-25.113 on the west; thence running along the boundary line the following one (1) course and distance:

1. South 03-17-46 East, 147.95 feet;

Thence running South 4-03-59 West, 273.18 feet along the division line between lands now or formerly of Barton S. and Brideen Finegan parcel 60.-1-18 on the east and now and formerly of 7 Summits LLC parcel 48.-4-25.111 on the west; thence running along the boundary line following one (1) course and distance:

1. South 3-30-24 East, 186.82 feet;

Thence running South 84-43-11 West, 271.26 feet along the division line between lands now or formerly of 7 Summits LLC parcel 48.-4-25.111 on the north and The Schoharie Creek on the south; thence running along the boundary line the following eight (8) courses and distance:

1. South 87-13-43 West, 102.37 feet;
2. North 89-56-08 West, 76.78 feet;
3. North 87-41-24 West, 58.40 feet;
4. North 85-50-29 West, 58.40 feet;
5. North 83-59-34 West, 58.40 feet;
6. North 82-08-39 West, 58.40 feet;
7. North 80-17-43 West, 58.40 feet;
8. North 82-34-36 West, 291.34 feet;

Thence running North 82-34-36 West, 177.51 feet along the division line between lands now or formerly Shaul Farms, Inc. parcel 48.-4-25.118 on the north and The Schoharie Creek on the south; thence running along the boundary line the following three (3) courses and distance:

1. North 82-07-27 West, 37.35 feet;
2. North 78-51-58 West, 37.35 feet;
3. North 75-36-29 West, 37.35 feet;

Thence along an Arc with a Radius of 900.6 feet, a Delta of 39.03 and a distance of 613.05 feet:

Thence along an Arc with a Radius of 1174.01 feet, a Delta of 23.44 and a distance of 725.87 feet:

Thence running North 49-00-51 West, 256.22 feet along the division line between lands now or formerly Shaul Farms, Inc. parcel 48.-4-25.118 on the north and The Schoharie Creek on the south; thence running along the boundary line the following three (3) courses and distance:

1. North 47-59-27 West, 951.90 feet;
2. North 50-30-19 West, 224.97 feet;
3. North 77-10-00 East, 45.32 feet;

Thence running North 77-10-01 East 367.36 feet along the division line between 7 Summits, Inc. parcel 48.-4-25.111 on the south and Interstate I-88 on the north; thence running along the boundary line the following three (3) courses and distance:

1. North 76-15-31 East, 253.03 feet;
2. North 88-54-00 East, 215.97 feet;
3. North 89-05-20 East, 78.50 feet;

Thence running North 89-46-24 East, 720.15 feet along the division line between BJ Hospitality parcel 48.-4-25.2 on the south and Interstate I-88 on the north; thence running along the boundary line the following one (1) course and distance:

1. South 60-33-43 East, 76.72 feet;

Thence running South 60-22-31.43 East, 244.79 feet along the division line between 7 Summits LLC parcel 48.-4-26.2 on the west and Interstate I-88 on the east:

Thence running South 59-37-51 East, 573.75 feet, along the division line between Horace Stanton parcel 48.-4-26.1 on the west and New York State Route 30A on the east; thence running along the boundary line the following two (2) courses and distance:

1. South 59-30-24 East, 233.95 feet;
2. South 56-13-16 East, 115.48 feet;

Thence running South 57-59-39 East, 18.18 feet, along the division line between Carlos Teixeira parcel 48.-4-25.12 on the west and New York State Route 30A on the east; thence running along the boundary line the following one (1) course and distance:

1. South 57-54-53 East, 217.20 feet;

Thence running South 61-45-08 East, 61.78 feet, along the division line between 7 Summits LLC parcel 48.-4-25.111 on the west and New York State Route 30A on the east; thence running along the boundary line:

Thence running South 61-54-08 East, 69.45 feet, along the division line between Schoharie Park LLC parcel 48.-4-25.112 on the west and New York State Route 30A on the east; thence running along the boundary line the following two (2) courses and distance:

1. South 71-53-13 East, 107.14 feet;
2. South 59-25-49 East, 166.01 feet;

Thence running South 59-32-38 East, 508.12 feet, along the division line between 7 Summits LLC parcel 48.-4-25.114 on the west and New York State Route 30A on the east; thence running along the boundary line the following three (3) courses and distance to the point of beginning:

1. South 57-57-57 East, 169.95 feet;
2. South 38-53-02 East, 69.86 feet;
3. South 56-04-16 East, 38.65 feet;

Water District Boundary – Section 2

ALL THAT DISTRICT BOUNDARY situate, lying and being on the southerly side of Interstate I-88, bordered by New York State Route 30A on the west, bordered by Timothy and Diana Sweeney, Robert and Arlene Price and Barton and Brideen Finegan on the east; in the Town of Schoharie, County of Schoharie and State of New York, bounded and described as follows:

COMMENCING at a point (POB #2) at the north west corner of Constitution Pipeline, Co. LLC. parcel 48.-4-22, on the south side of Interstate I-88 where the same is intersected by the division line between lands now or formerly of Constitution Pipeline, Co. LLC. Parcel 48.-4-22 on the south and New York State Route 30A. Thence running North 66-15-49 East, 516.12 feet along the boundary line between lands now or formerly of Constitution Pipeline Co., LLC. Parcel 48.-4-22 on the south and Interstate I-88 on the north; thence running along the boundary line the following three (3) courses and distance:

1. North 66-15-49 East, 281.34 feet;
2. North 77-07-25 East, 1562.88 feet;

3. North 75-39-07 East, 142.91 feet;

Thence running North 85-24-53 East, 1241.76 feet, along the division line between BOCES Schoharie and Schenectady Counties parcel 48.-4-21 on the south and Interstate I-88 on the north; thence running along the boundary line:

Thence running South 13-54-36 East, 8.66 feet, along the division line between BOCES Schoharie and Schenectady Counties parcel 48.-4-21 on the west and Timothy and Diana Sweeney parcel 48.-4-11 the east; thence running along the boundary line the following fifty-two (52) courses and distance:

1. South 4-32-20 East, 8.66 feet;
2. South 14-12-13 West, 8.66 feet;
3. South 23-34-30 West, 8.66 feet;
4. South 32-56-46 West, 8.66 feet;
5. South 42-19-03 West, 8.66 feet;
6. South 51-41-19 West, 8.66 feet;
7. South 61-03-36 West, 8.66 feet;
8. South 69-04-20 West, 18-40 feet;
9. South 75-57-50 West, 18.40 feet;
10. South 82-51-21 West, 18.40 feet;
11. South 70-10-50 West, 15.48 feet;
12. South 62-56-12 West, 15.48 feet;
13. South 55-41-33 West, 15.48 feet;
14. South 48-26-54 West, 15.48 feet;
15. South 21-26-43 West, 14.12 feet;
16. South 13-50-24 West, 14.12 feet;
17. South 6-14-04 West, 14.12 feet;
18. South 1-22-15 East, 14.12 feet;
19. South 8-58-35 East, 14.12 feet;
20. South 0-13-03 West, 13.42 feet;
21. South 8-50-45 West, 13.42 feet;
22. South 17-28-28 West, 13.42 feet;
23. South 26-06-11 West, 13.42 feet;
24. South 34-43-53 West, 13.42 feet;
25. South 67-26-30 West, 17.29 feet;
26. South 75-57-33 West, 17.29 feet;
27. South 84-28-35 West, 17.29 feet;
28. North 87-00-22 West, 17.29 feet;
29. South 89-01-04 West, 14.08 feet;
30. South 80-01-27 West, 14.08 feet;
31. South 71-01-51 West, 14.08 feet;
32. South 62-02-15 West, 14.08 feet;
33. South 53-02-39 West, 14.08 feet;
34. South 44-03-02 West, 14.08 feet;

35. South 40-29-04 West, 31.23 feet;
36. South 24-12-42 West, 94.64 feet;
37. South 14-32-09 West, 32.32 feet;
38. South 30-08-22 West, 20.77 feet;
39. South 55-56-01 West, 73.43 feet;
40. South 77-16-33 West, 18.41 feet;
41. South 88-51-42 West, 87.49 feet;
42. South 41-20-20 West, 21.03 feet;
43. South 48-22-00 West, 21.03 feet;
44. South 55-23-40 West, 21.03 feet;
45. South 33-36-32 West, 15.99 feet;
46. South 27-32-57 West, 15.99 feet;
47. South 21-29-22 West, 15.99 feet;
48. South 15-25-46 West, 15.99 feet;
49. South 9-22-11 West, 15.99 feet;
50. South 31-45-15 West, 29.02 feet;
51. South 31-11-35 East, 598.50 feet;
52. South 30-39-10 East, 264.79 feet;

Thence running South 49-23-39 West, 1166.52 feet, along the division line between BOCES Schoharie and Schenectady Counties parcel 48.-4-21 on the north and Robert and Arlene Price parcel 48.-4-18 on the south; thence running along the boundary line:

Thence running South 51-34-55 West, 95.80 feet, along the division line between BOCES Schoharie and Schenectady Counties parcel 48.-4-21 on the north and Barton and Brideen Finegan parcel 48.-4-20 the south; thence running along the boundary line the following three (3) courses and distance:

1. South 48-22-34 West, 84.16 feet;
2. South 69-16-49 West, 119.95 feet;
3. South 38-55-00 West, 263.54 feet;

Thence running North 59-22-12 West, 165.57 feet, along the division line between BOCES Schoharie and Schenectady Counties parcel 48.-4-21 on the east and New York State Route 30A on the west; thence running along the boundary line the following three (3) courses and distance:

1. North 50-29-15 West, 174.74 feet;
2. North 87-16-47 West, 52.29 feet;
3. North 58-31-50 West, 614.46 feet;

Thence running North 59-55-04 West, 457.91 feet, along the division line between Nathan Armstrong and Angela Ruckdeschel parcel 48.-4-23 on the east and New York State Route 30A on the west; thence running along the boundary line:

Thence running North 60-25-04 West, 178.81 feet, along the division line between John and Corrie Schrader parcel 48.-4-24 on the east and New York State Route 30A on the west; thence running along the boundary line the following one (1) courses and distance:

1. North 24-53-12 West, 69.03 feet;

Thence running North 48-25-46 West, 514.56 feet, along the division line between Constitution Pipeline parcel 48.-4-22 on the east and New York State Route 30A on the west; thence running along the boundary line the following four (4) courses and distance to the point of beginning:

1. North 38-39-33 West, 53.17 feet;
2. South 54-48-59 West, 6.39 feet;
3. North 39-15-13 West, 221.26 feet;
4. North 29-35-16 West, 271.39 feet;

DISCLAIMER:

This document was not produced as a result of a survey. Boundary information was obtained from Schoharie County Real Property office tax mapping, and therefore this description is only accurate to the extent of the accuracy of that mapping.