

# Greenville Road Sewer Extension

Town of North Smithfield, RI

May 20, 2020

Louis Ragozzino, PE



# Project Purpose

## Extend Municipal Sewer Service

- Five houses have onsite wastewater treatment systems
- Houses identified as numbers 128, 132, 136, 145, and 147

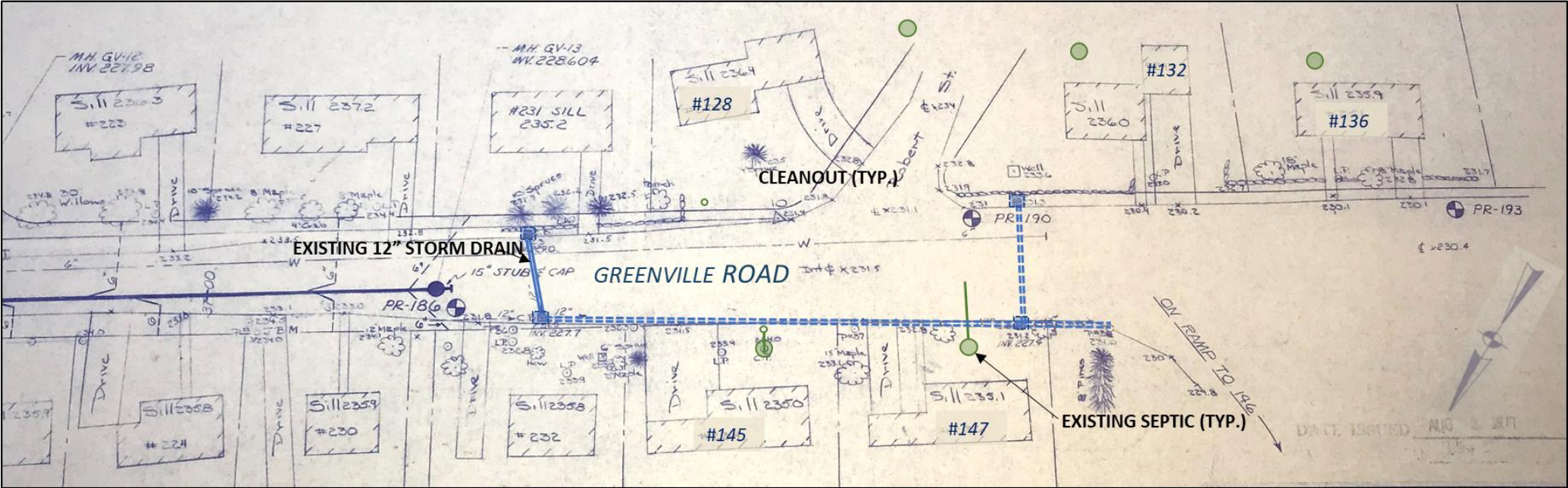
## Existing Sewer System

- 15-inch gravity sewer system extends to within 400 feet of house No. 136
- Shallow invert at terminus manhole. Cover over 15-inch is 3.15 ft.

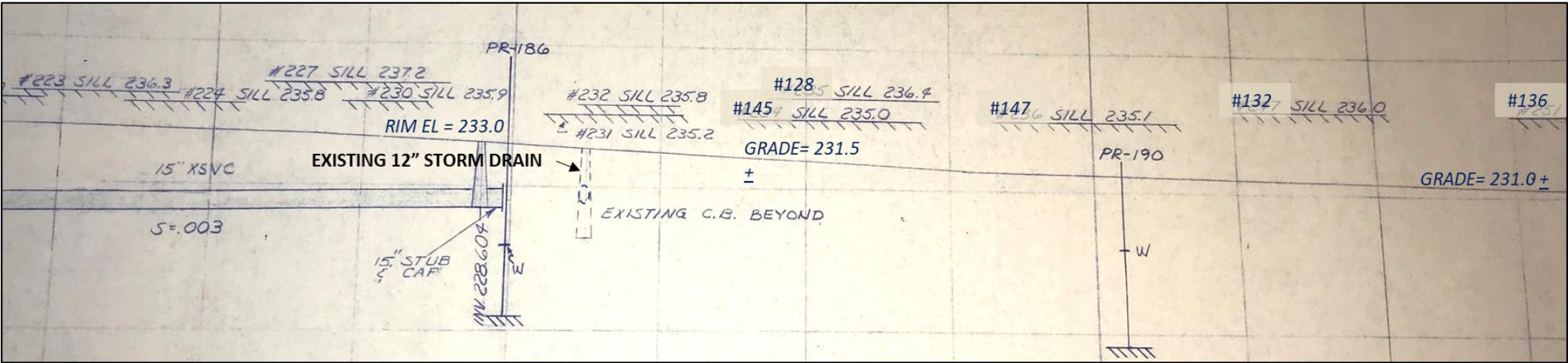




# Existing Information – Record Drawings



PLAN  
NTS

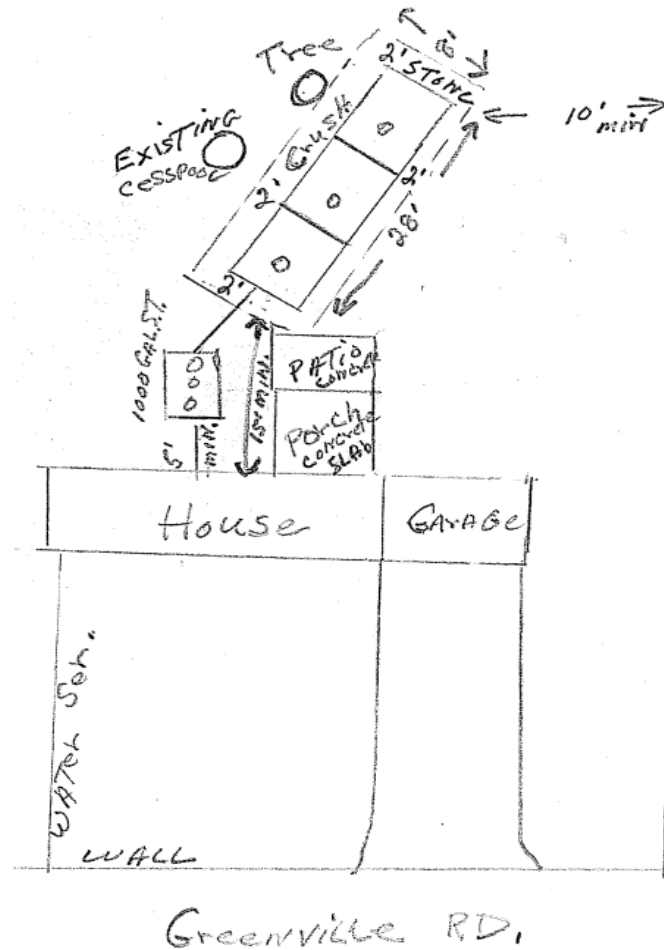


PROFILE  
NTS

# Existing Information – OWTS Permits

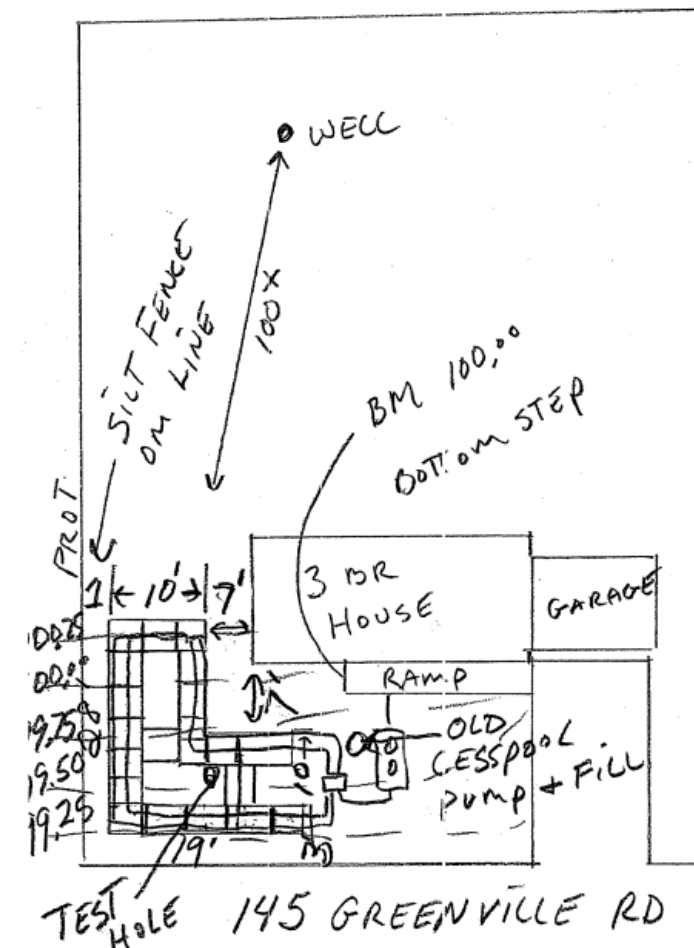
## 132 Greenville Rd. – System Replacement

Completed - May 1993



## 145 Greenville Rd. – Permit Application

June 2018 –Completion Unknown



# Wastewater Capacity

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## Treatment

- Woonsocket Wastewater Treatment Plant (WWTP) capacity is 3 MGD
- 2025 Projected Average Daily Flow is 1.573 MGD

## Pumping

- Pound Hill Pumping Station design capacity of 1.58 MGD and was reported to have a peak flow of 0.60 MGD

## Sewer Capacity

- The capacity of the 15-inch sewer is 2.14 MGD
- Minimal slope for an 8-inch gravity sewer is 0.40 ft/100 ft. The capacity of an 8-inch sewer is to 0.46 MGD

# Homeowner Questionnaires

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Questionnaires sent to all five homes. 4 of the 5 reply with a favorable response.

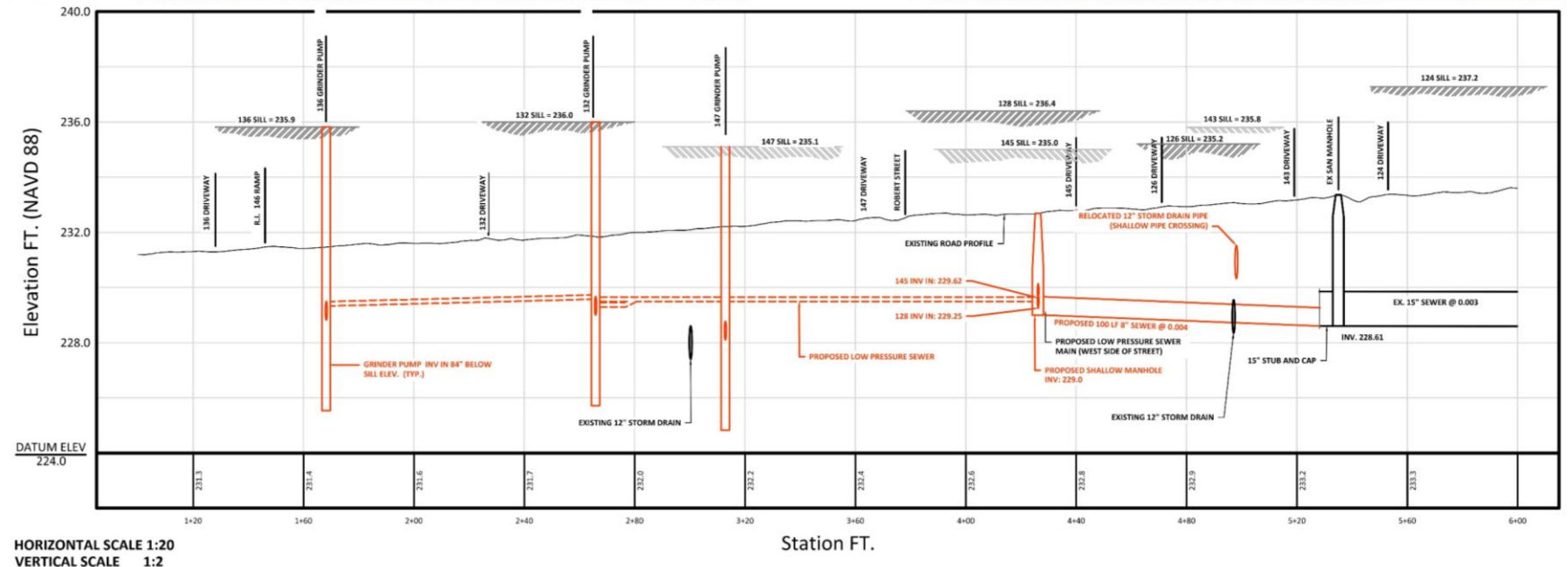
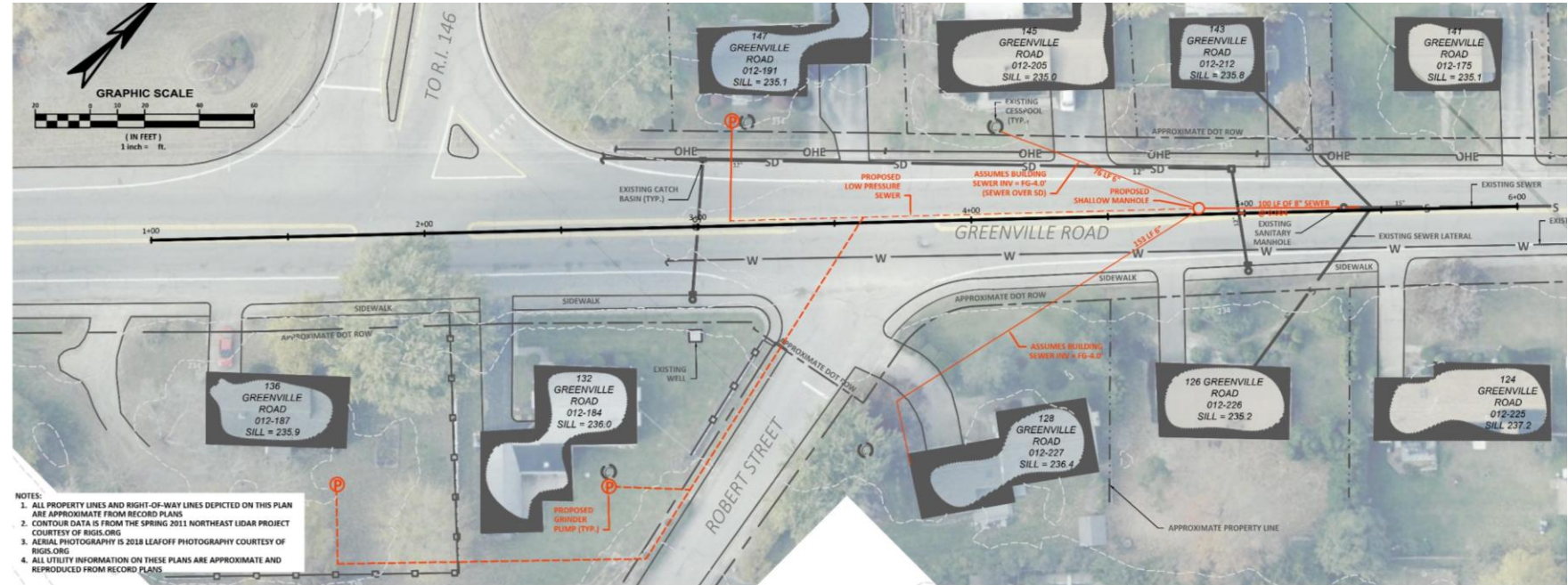
- Are you interested in a connection to the municipal sewer system?
- Are you willing to allow Wright-Pierce and Town staff access to your property?
- Are you willing to allow Wright-Pierce and Town staff access to the inside of your house?
- If you are willing to grant access to the interior of your house what day of the week and time are best for you?
- Do you know what side of your house the sewage exits on its way to the septic or cesspool?
- Does your house have a basement?
- If your house has a basement, are there plumbing fixtures located within it?
- Are there any additional comments you would like to make?
- Would you like to provide an email or phone number for future communications



# Alternatives Considered Alt. 1 - 8-inch Sewer Extension in Greenville Road

Greenville Road Slopes down toward Route 146. A 100-foot long extension of an 8-inch pipe results in an invert of 229.0. Road grade is 231.5 resulting in a depth of cover over the 8-inch gravity sewer of only 1.84 feet.

Only 2 of the houses would be served by gravity.

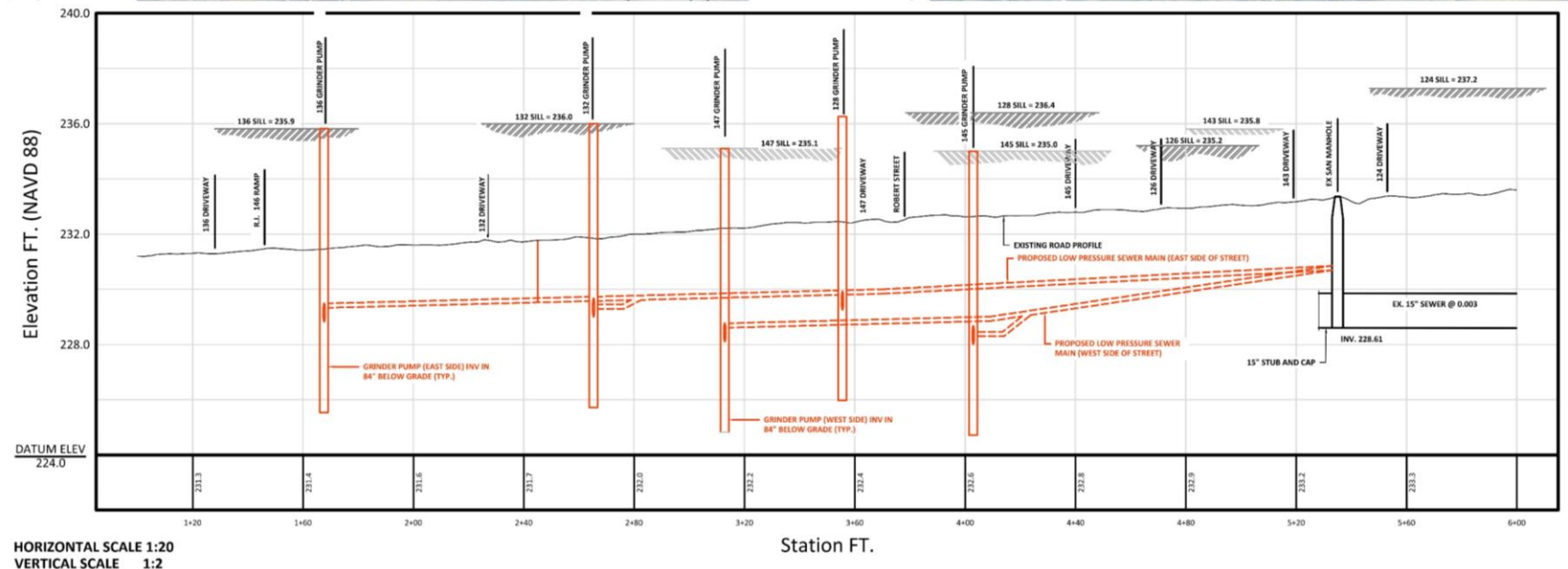
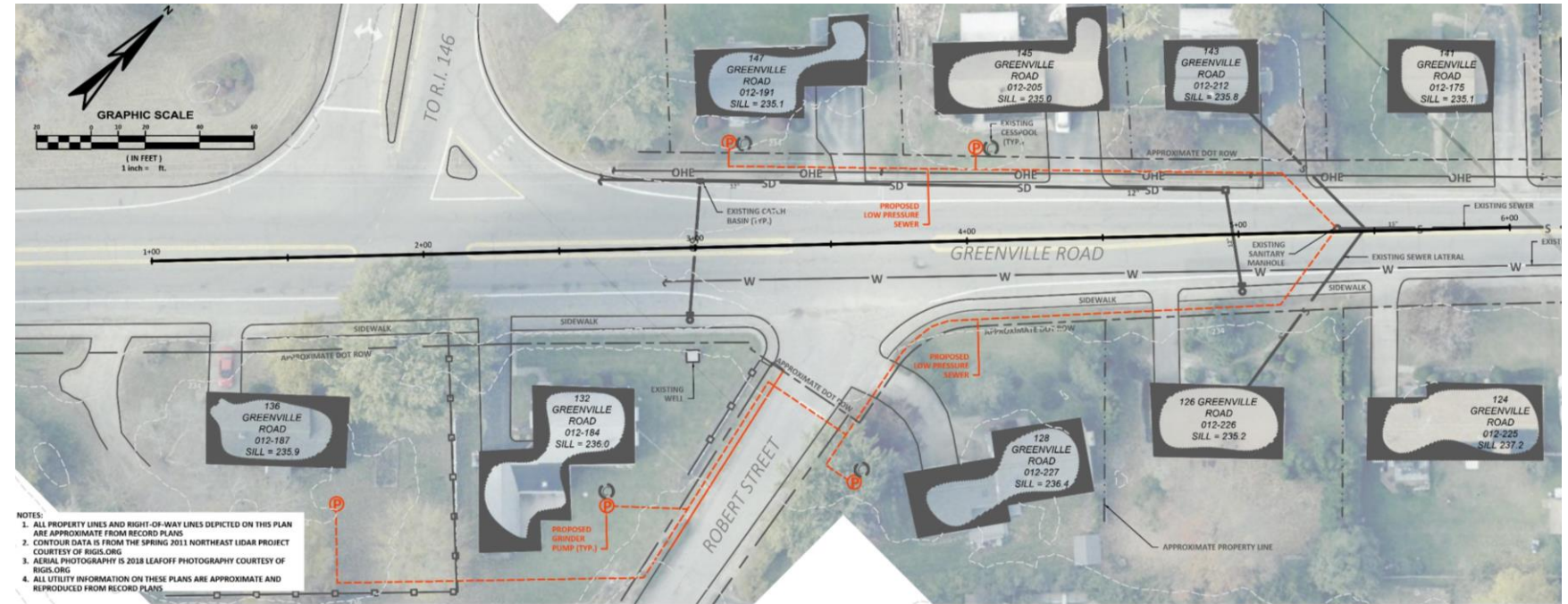


# Alternatives Considered Alt. 2 – Grinder Pump and Low Pressure System

Grinder pumps are each house.

Low pressure sewer in ROW

Possible easement behind house 132.





# Cost Comparison

## Alternative 1 – 100 foot 8-inch gravity sewer extension plus grinder pumps

ITEM	DESCRIPTION	COST
1	General Requirements	\$14,225
2	Demolition	\$7,694
3	Grinder Pumps	\$33,169
4	Low Pressure Sewer	\$70,792
5	Gravity Sewer	\$100,543
6	Traffic Control	\$4,974
	Construction - Subtotal	\$231,397
	Contingency (15%)	\$34,710
	Subtotal	\$266,106
	Engineering and Permitting (10%)	\$26,611
	Construction Oversight (5%)	\$13,305
	<b>Total Project Cost</b>	<b>\$306,022</b>
	Cost per House	\$61,204
	Annual cost amortized over 20 years*	\$3,060
	Monthly Cost	\$255
Note: * Amortized cost does not include interest		

## Alternative 2 – Grinder pumps and low pressure system

ITEM	DESCRIPTION	COST
1	General Requirements	\$11,678
2	Demolition	\$7,694
3	Grinder Pumps	\$55,282
4	Low Pressure Sewer	\$65,861
5	Traffic Control	\$4,669
	Construction - Subtotal	\$145,184
	Contingency (15%)	\$21,778
	Subtotal	\$166,961
	Engineering and Permitting (10%)	\$16,696
	Construction Oversight (5%)	\$8,348
	<b>Total Project Cost</b>	<b>\$192,005</b>
	Cost per House	\$38,401
	Annual cost amortized over 20 years*	\$1,920
	Monthly Cost	\$160
Note: * Amortized cost does not include interest		

# Greenville Road Sewer Extension

QUESTIONS ?



# THANK YOU

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