



720 Main Street Pump Station Relocation and Improvements Project

Neighborhood Meeting
Selectman's Conference Room
February 8, 2024

Town of Barnstable
Department of Public Works



Meeting Agenda

- Project Background
 - Project Need
 - Proposed Project
- Construction Update
 - Pump Station
 - In-Road Sewer Construction
 - Construction Impacts
- Question & Answer



Project Background & Need

Existing 720 Main Street Pump Station

- Located on small easement on 720 Main Street, directly adjacent to Stewart's Creek
- Flooded suction “can” type station, constructed in 1972, is beyond it's intended design life and over capacity
- Rehabilitated in 2010
 - Including new 14” force main to Water Pollution Control Facility in anticipation of future station upgrades/replacement to address anticipated capacity concerns



Existing Pump Station at 720 Main Street



Existing
Infrastructure

Project Background & Need

2019 Pump Station Asset Management Plan

- Identified deficiencies that need to be addressed
- Indicated that the station “is currently undersized and can’t meet either the peak existing or future flows”
- Recommended completing a capacity upgrade project
 - Further analysis indicated capacity upgrades are not practical at existing station
 - Not enough space inside existing infrastructure to upgrade
 - Not enough space on the easement to replace



Addressing Sewer Capacity Concerns

Sewers on South Street are approaching capacity

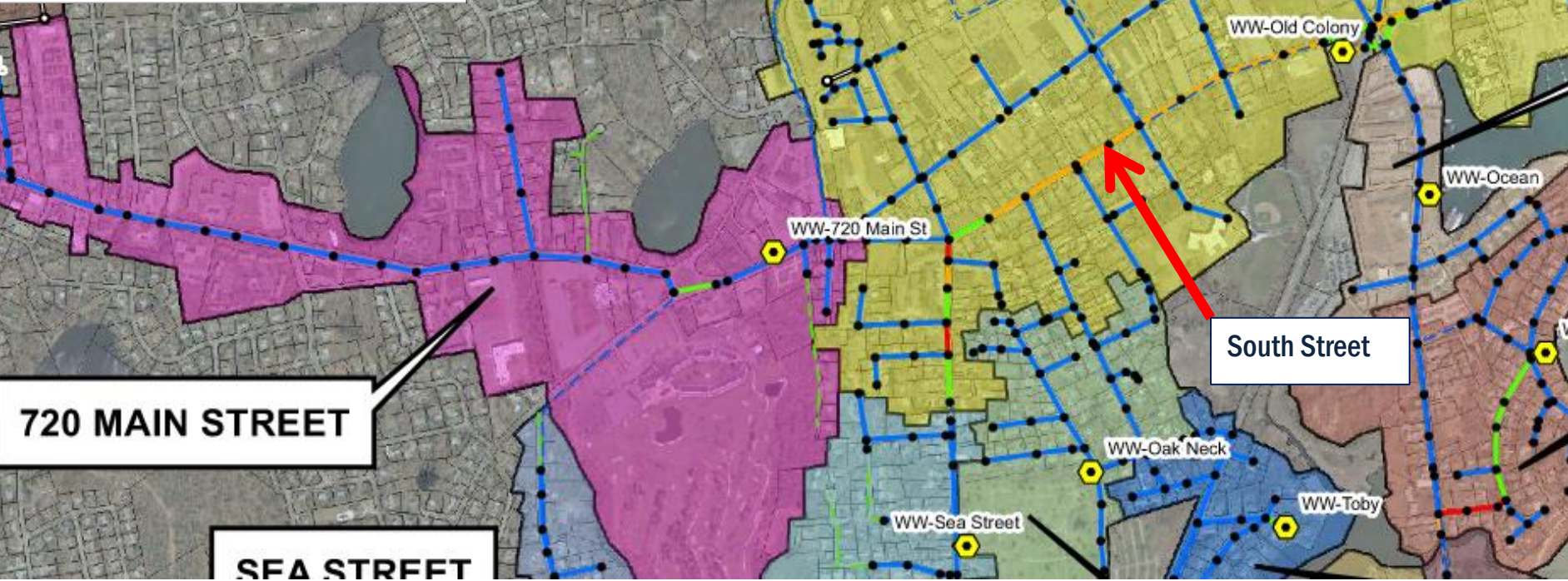
- If unaddressed, would restrict growth within the Town's Growth Incentive Zone (GIZ)
- Replacement would be over \$4M (2020, pre-COVID estimate) and disruptive ($\pm 25'$ deep)
- Redirecting flow from the intersection of South Street @ Sea Street can resolve capacity concerns on South Street



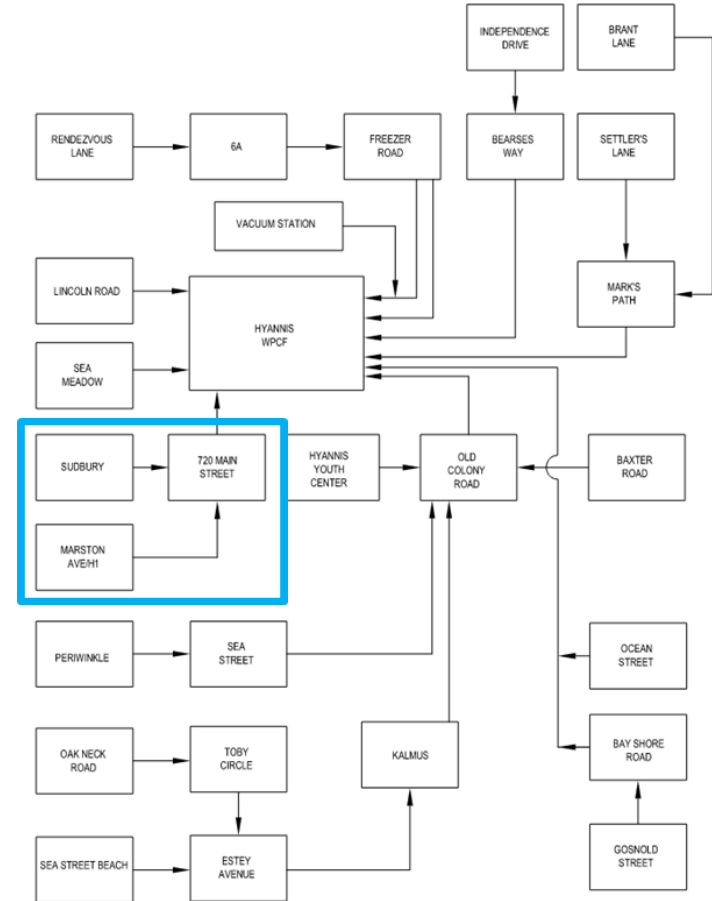
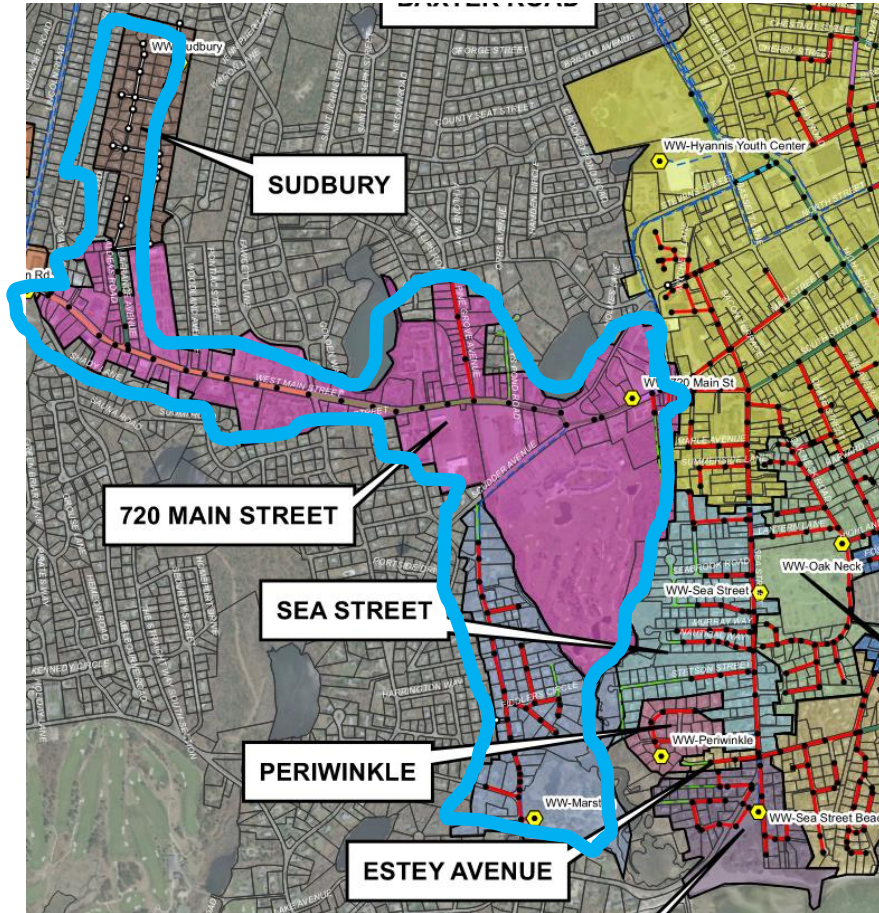
Gravity Sewer Pipe (Existing Capacity)

Pipe Capacity

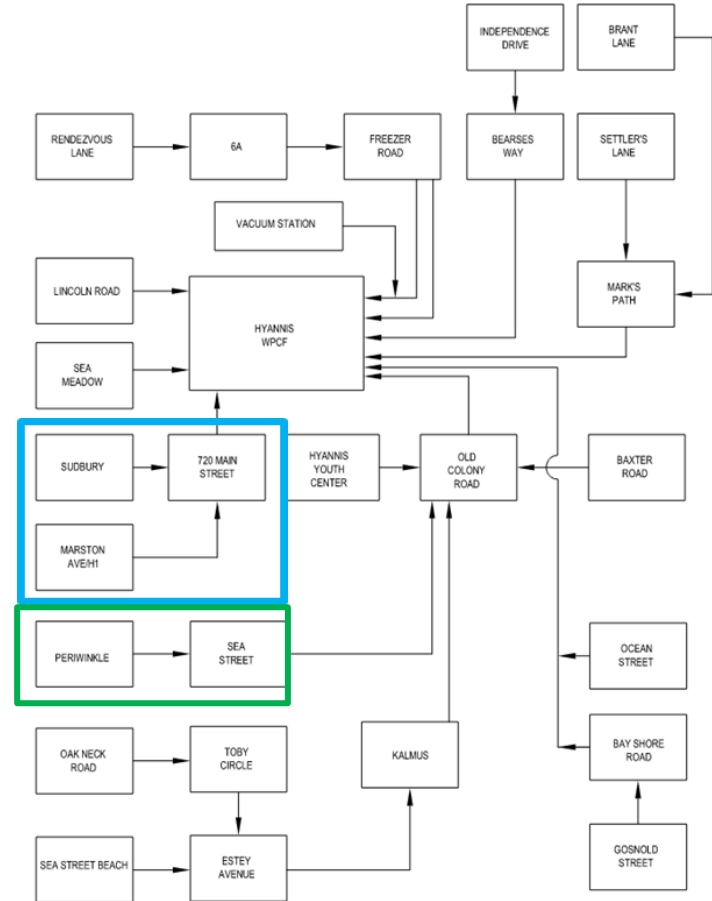
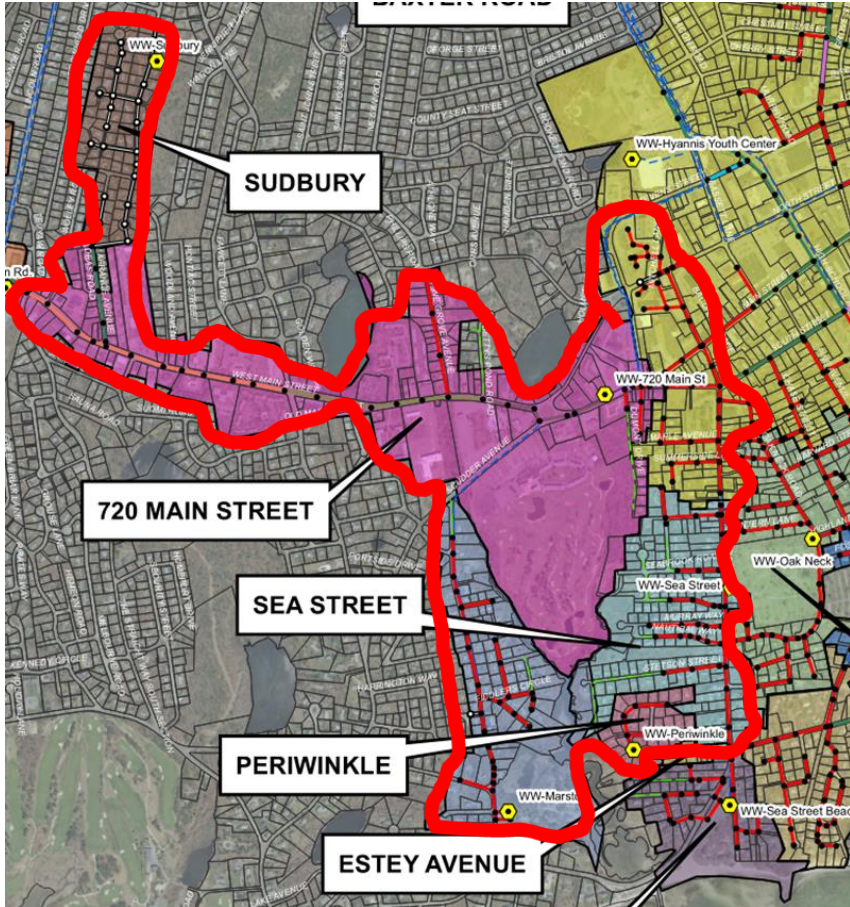
- > 50% Capacity
- Between 15% and 50% Capacity Remaining
- Less Than 15% Capacity Remaining
- Pipe Is Surcharged



Existing Pump Station Service Area



Proposed Pump Station Service Area



Proposed Site

725 Main Street

- Former gas station site
- August, 2002: Town acquired the property for open space, subject to two easements retained on the property for the purposes of siting sewer infrastructure on the property
- Deed restriction requires “payment based on the appraised value of said easement to an account held by the Town for acquisition of property interests subject to said Article 97” to use easements
 - Completed October, 2022 (Town Council Order # 2023-034)



725 Main Street Easement Boundaries

Red:

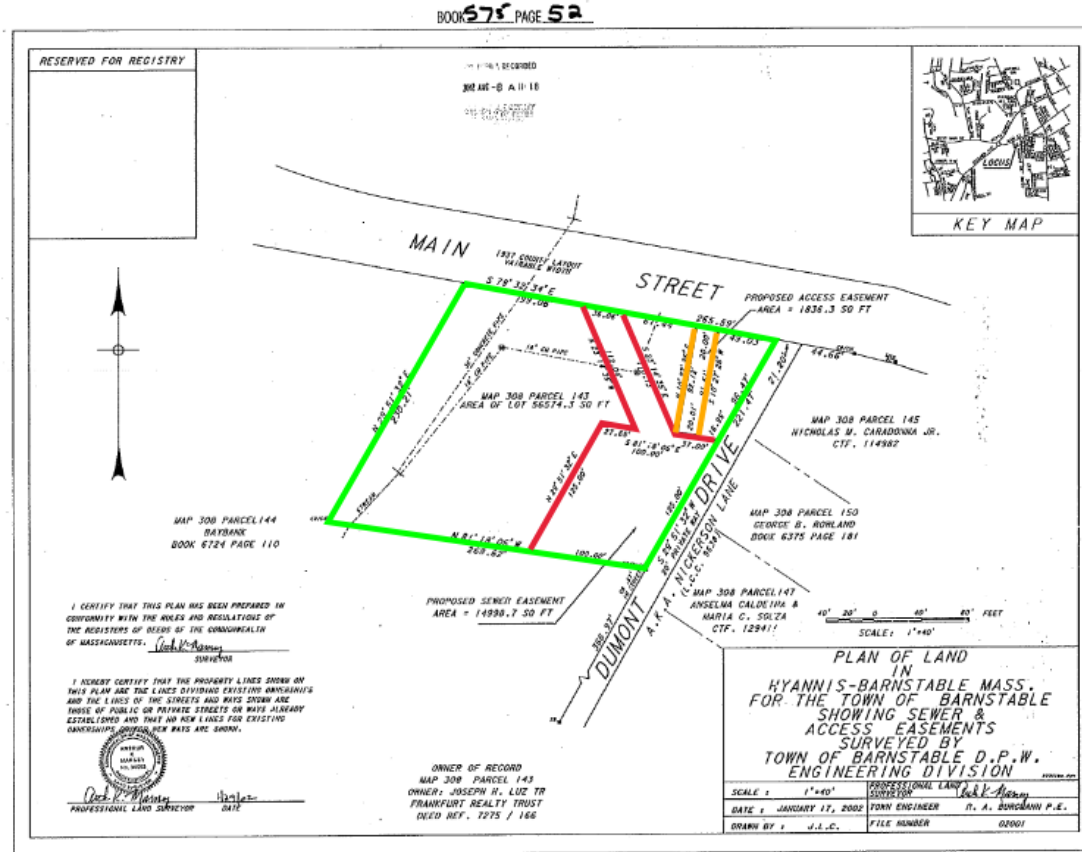
Easement retained for sewer infrastructure purposes

Orange:

Easement retained for access to sewer infrastructure

Green:

Boundary of 725 Main Street



Site Location Map

**Existing
Pump Station**

**Existing
Culvert**

**Stewart's
Creek**

**Proposed
Pump Station**



Proposed Pump Station Overview

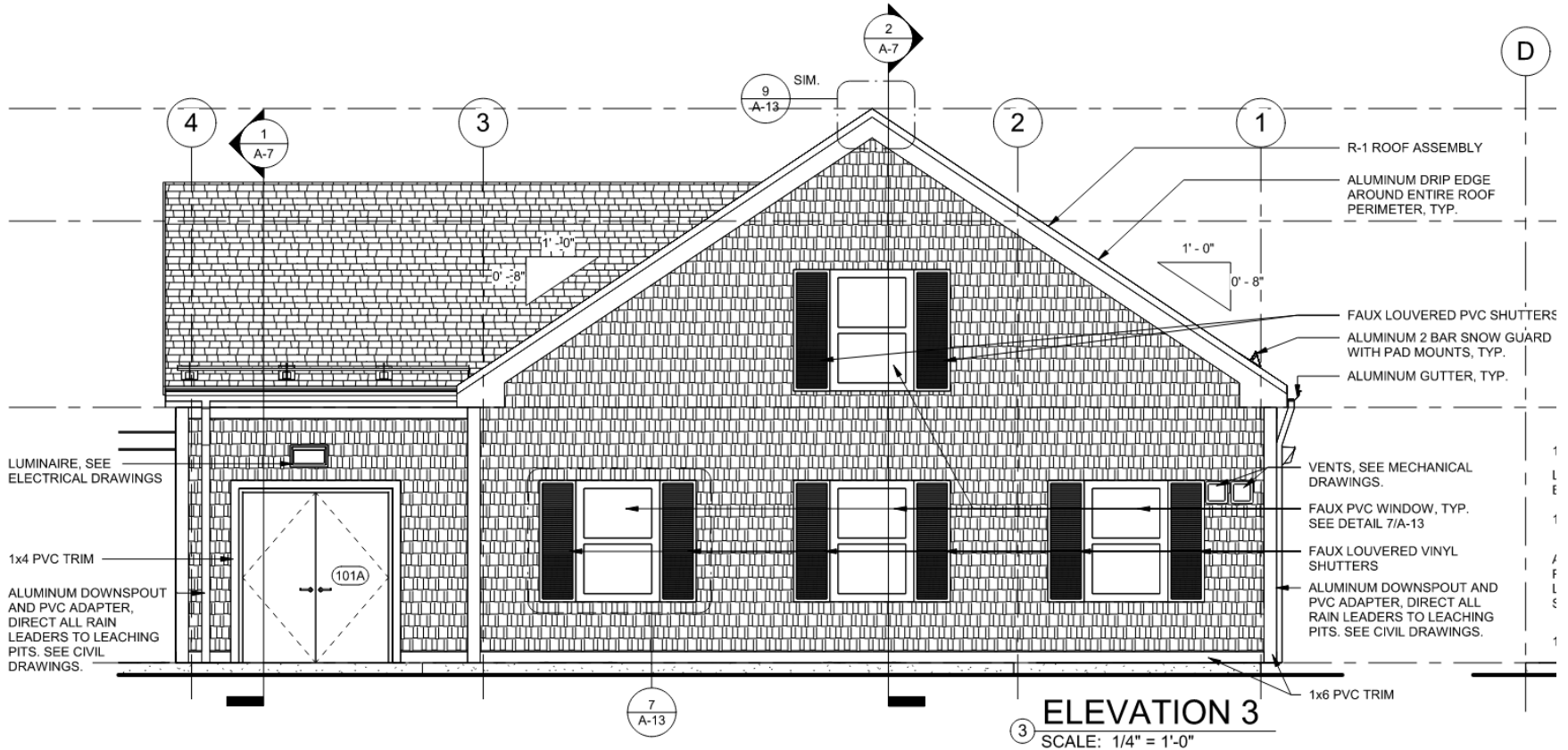
- Wet-pit, dry-pit style pump station
- Single story concrete masonry walls with cedar shake veneer and asphalt shingle roof
- Building will house pumps, piping, odor control system, electrical systems, HVAC systems, instrumentation systems, and standby generator
- 30' deep, cast in place foundation
- Permanent paved access driveway
- Retaining wall replacement
- Limited clearing
- Remainder of 725 Main Street to be restored upon completion of construction
- Existing pump station to be cut below grade, filled with concrete, abandoned and the area will be restored.



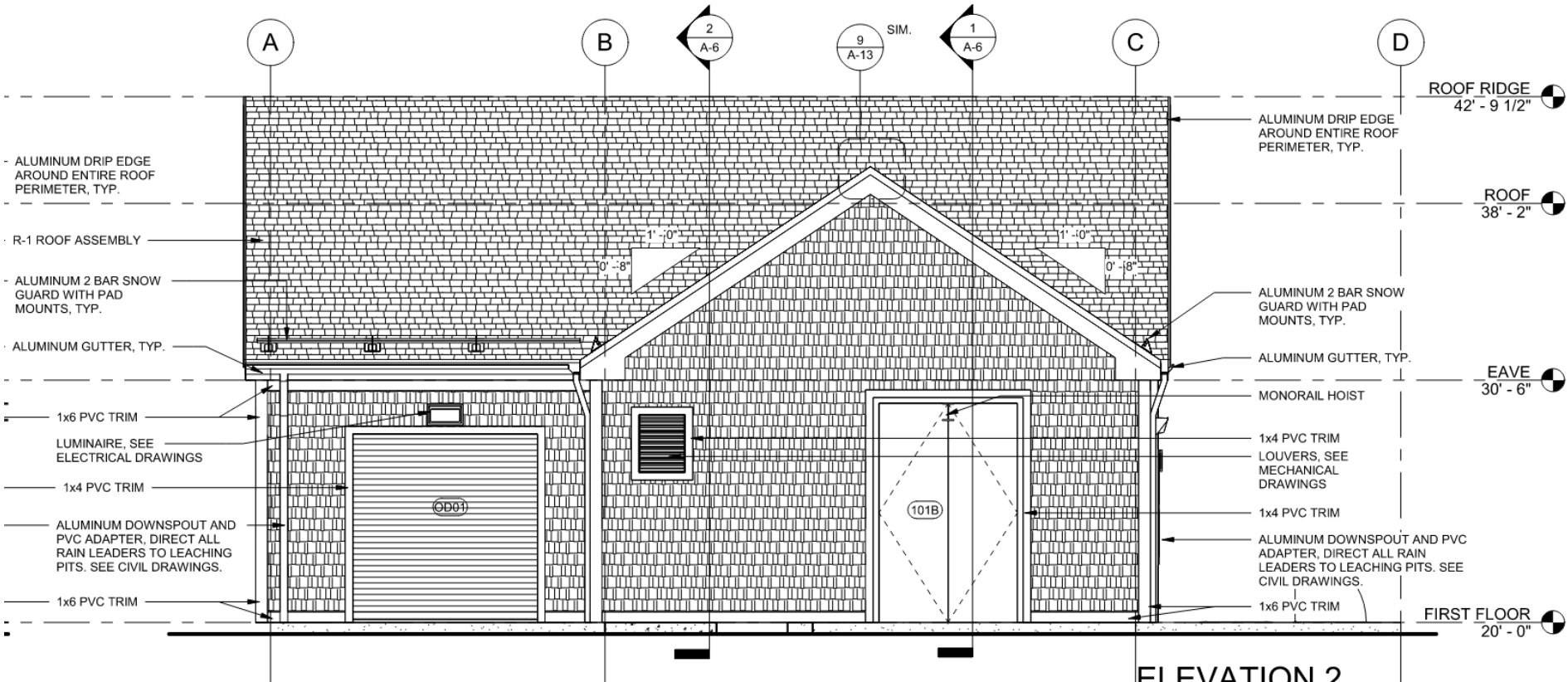
Pump Station Site Plan



Looking South (from Main Street)



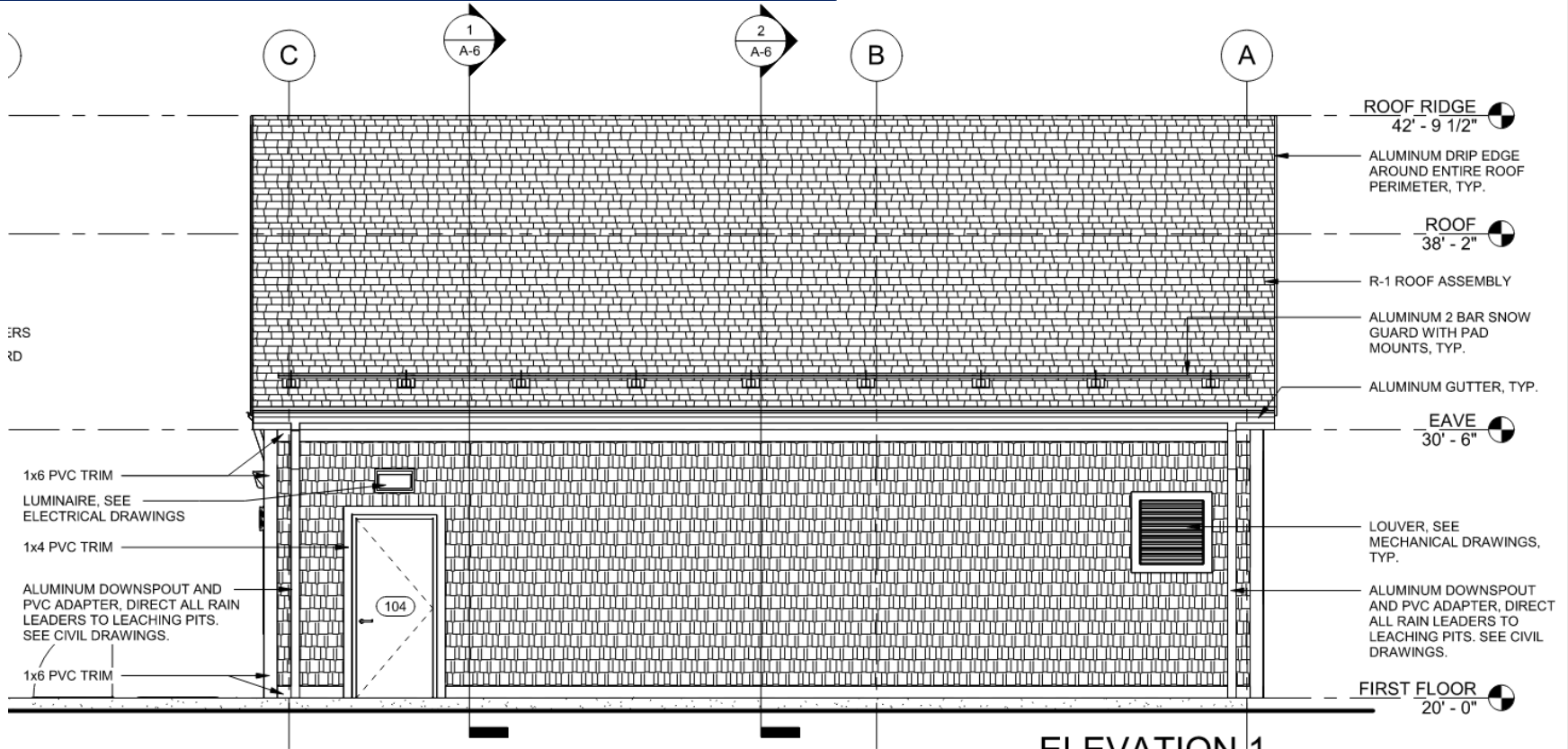
Looking West (from Dumont Drive)



ELEVATION 2

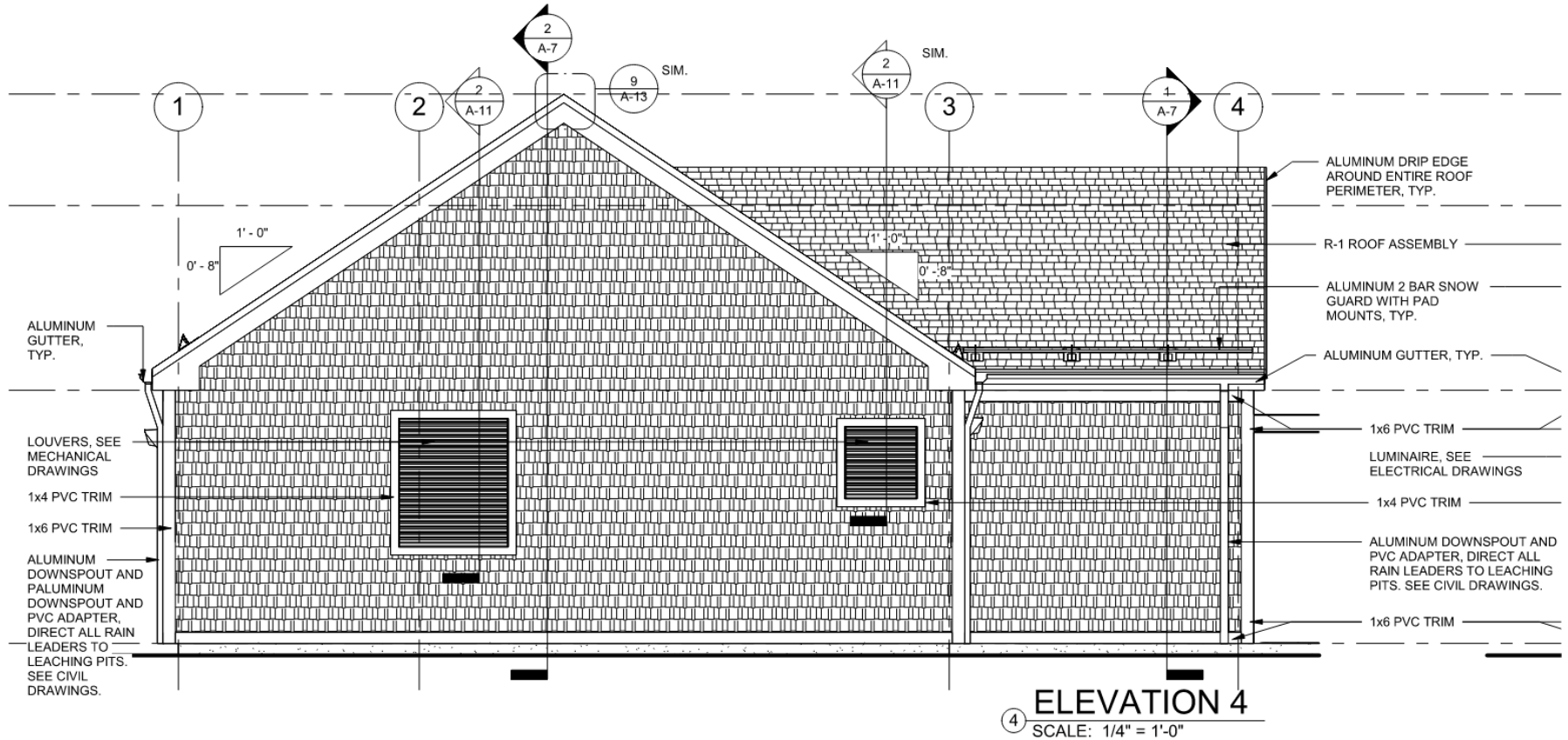
② SCALE: 1/4" = 1'-0"

Looking East (from within 725 Main Street)



ELEVATION 1
 ① SCALE: 1/4" = 1'-0"

Rear View



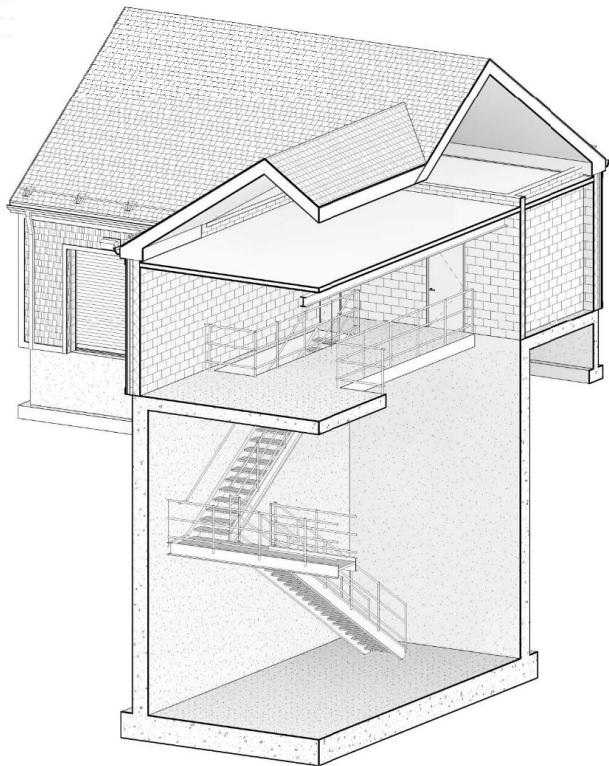
Looking South from Main Street



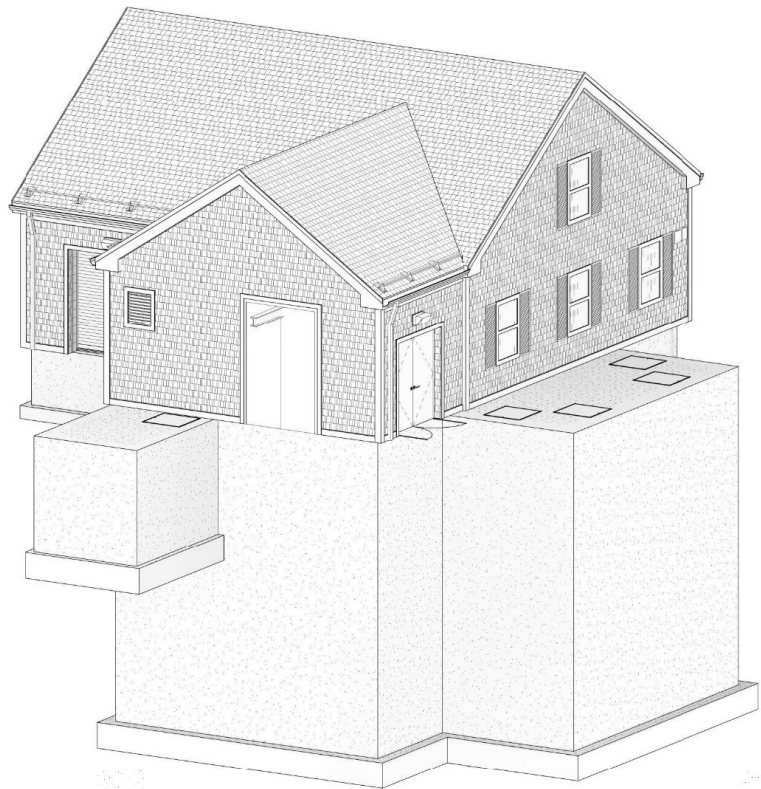
Looking East from Dumont Drive



Perspective View



② **PERSPECTIVE 2**
SCALE: N.T.S.



① **PERSPECTIVE 1**
SCALE: N.T.S.

Construction Update: Pump Station

- Monday through Friday, 7:00AM – 4:00PM

Anticipated Pump Station Construction Schedule	
Foundation Work (Driving sheet, backfill, sheet removal)	Anticipated completion June 2024 (Sheet driving duration is 2-3 weeks)
Site Utility Work	Anticipated completion July 2024
Structure Work	Anticipated completion November 2024
Pump Station Completion	Anticipated May 2025

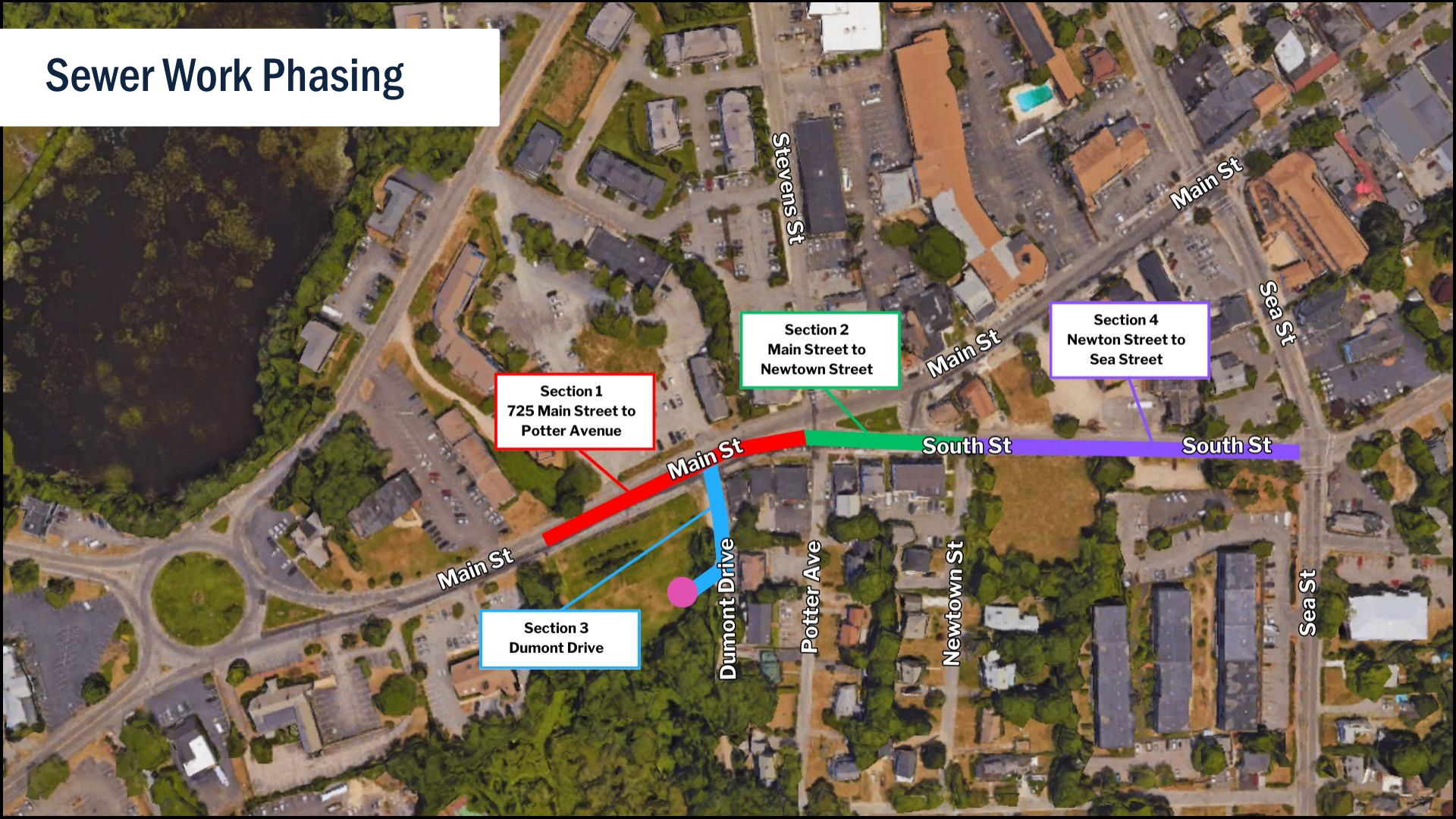


Sewer Work Overview

- Sewers will be replaced from the intersection of South Street & Sea Street to the proposed pump station. ($\pm 1,100$ LF)
 - Sewer bypass systems to serve existing users
 - Reconnection of existing users
 - Relocation of utilities as necessary
 - Road closure necessary
 - Curb to curb repaving
- 8" and 14" force main from proposed pump station, up Dumont Street, to existing force mains in Main Street



Sewer Work Phasing



Section 1
725 Main Street to
Potter Avenue

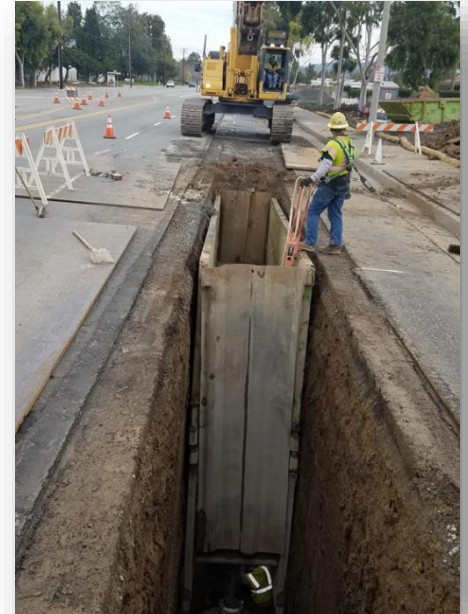
Section 2
Main Street to
Newtown Street

Section 4
Newton Street to
Sea Street

Section 3
Dumont Drive

Road Work Construction Impacts

- Sewer installation requires deep excavations (up to 16' deep)
- Sewer installation will require some temporary bypass piping
- Localized detours/road closures will be necessary and will be communicated through various outlets
- Noise and vibrations from construction activities
- Police details, flaggers, signage, etc. will be used to direct motorists around construction
- The Town will have a full-time, resident inspector supervising the Town sewer project at all times



Construction Update: In-Road Sewer Work

- Monday through Friday, 8:30AM – 5:00PM

Anticipated In-Road Construction Schedule	
Section 1 Main Street from 725 Main Street to Potter Avenue	Anticipated completion March 2024
Section 2 South Street from Main Street to Newton Street	Anticipated completion April 2024
Section 3 Dumont Drive	Anticipated start November 2024 Anticipated completion December 2024
Section 4 South Street from Newtown Street to Sea Street	Anticipated start May 2025 Anticipated completion July 2025
Final Paving Restoration	Anticipated completion September 2025



Project Funding

- Total construction budget = \$12,965,218.61
- As bid construction cost = \$10,856,940.50
- Contractor = RJV Construction Corporation from Canton, MA
- Project funded by Water Pollution Control Division Enterprise Fund
- Town received \$1,965,218.61 Barnstable County ARPA grant for the project
- Project received a low interest loan (\$11,000,000) through the 2022 Clean Water State Revolving Fund (CWSRF)
 - Low interest loan (1.5% for Barnstable)
 - Loan forgiveness subsidy from SRF (varies by year)
 - Anticipate additional subsidy from Cape Cod and Islands Water Protection Fund (25% in previous years)



Project Contacts

- Project Contact

Kelly Collopy at Kelly.Collopy@town.barnstable.ma.us

Communications Manager, Barnstable Department of Public Works

- Review project materials and presentation on Town of Barnstable website

https://www.town.barnstable.ma.us/Departments/PublicWorks/Projects_and_Updates/720-Main-Street-Pump-Station-Replacement-Project.asp



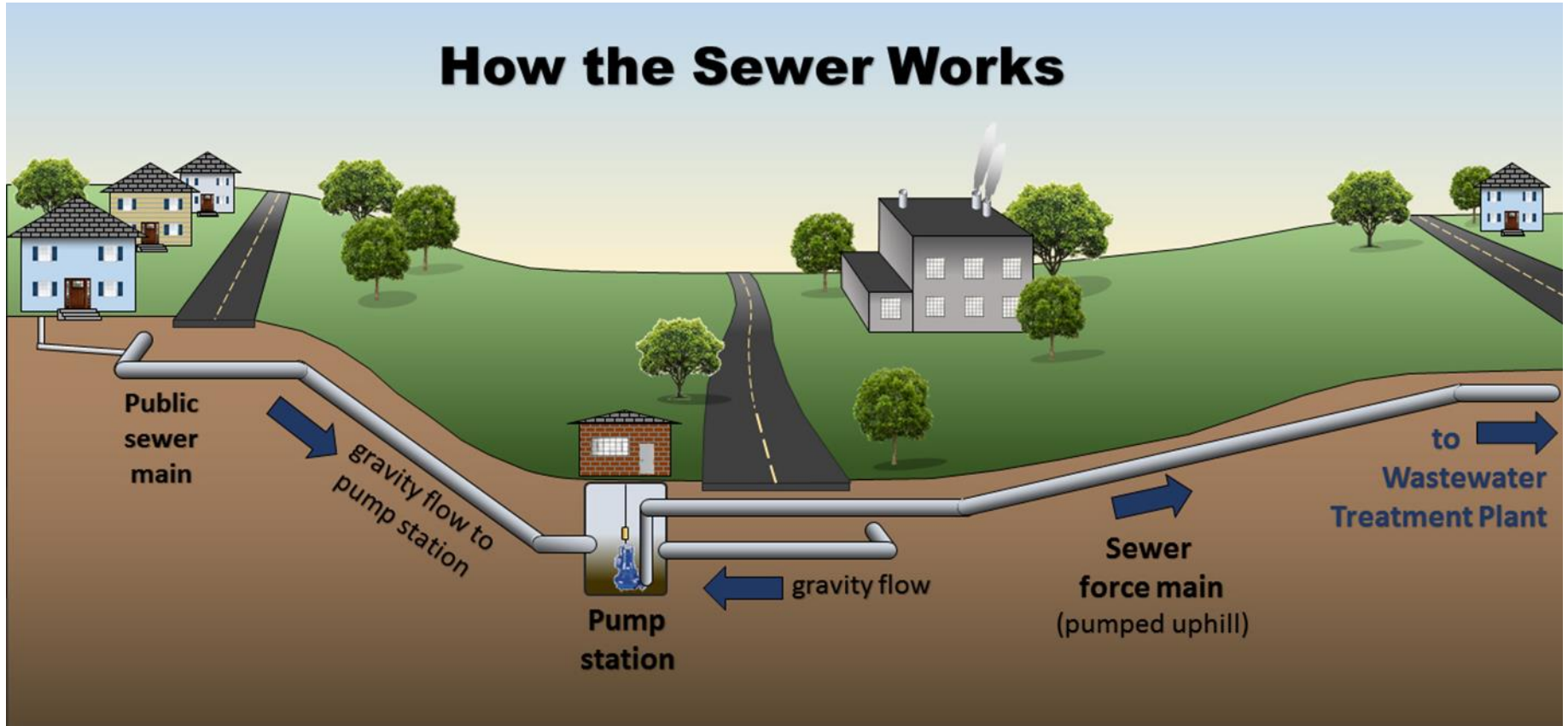
Questions or Feedback?



Resources

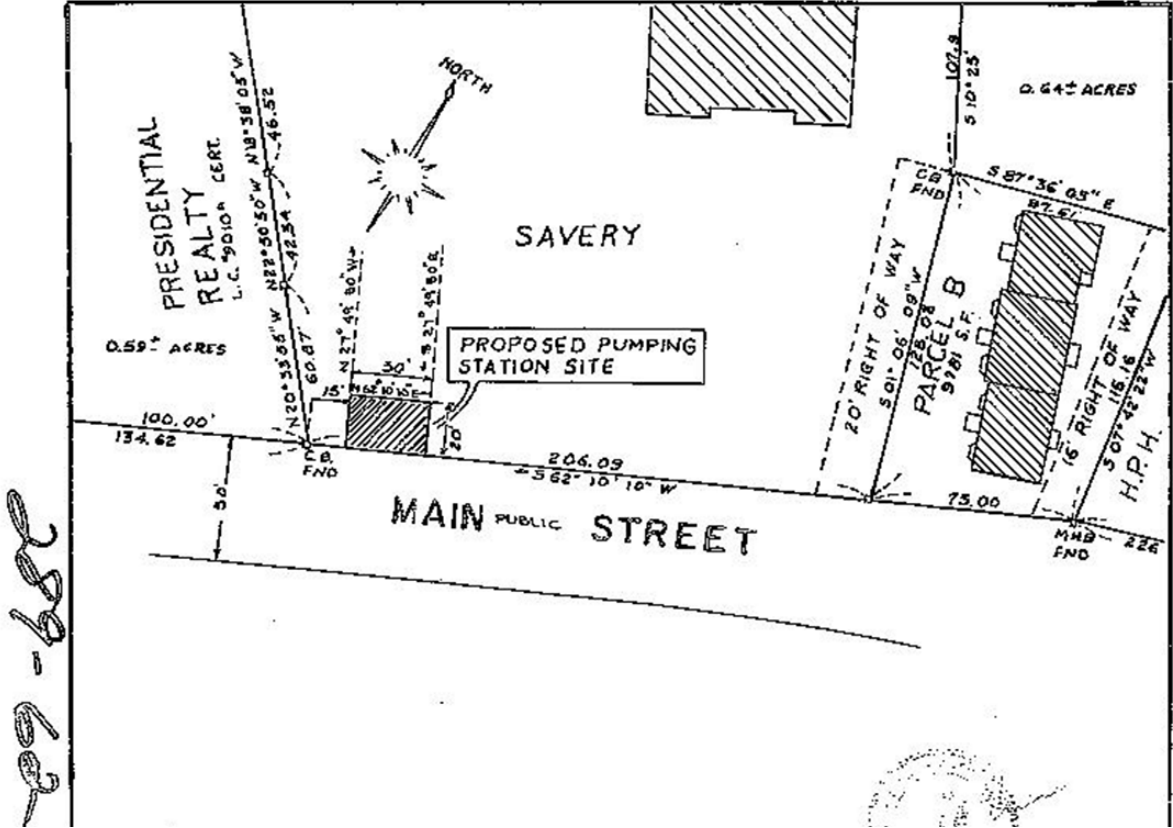
How a Sewer Collection System Functions

How the Sewer Works



Existing Pump Station at 720 Main Street

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**Existing
Pump Station**

**Existing
Culvert**

**Stewart's
Creek**

North St

Main St

Main St

Main St

Main St

Main St

South St

South St

South St

Dumont Dr

Potter Ave

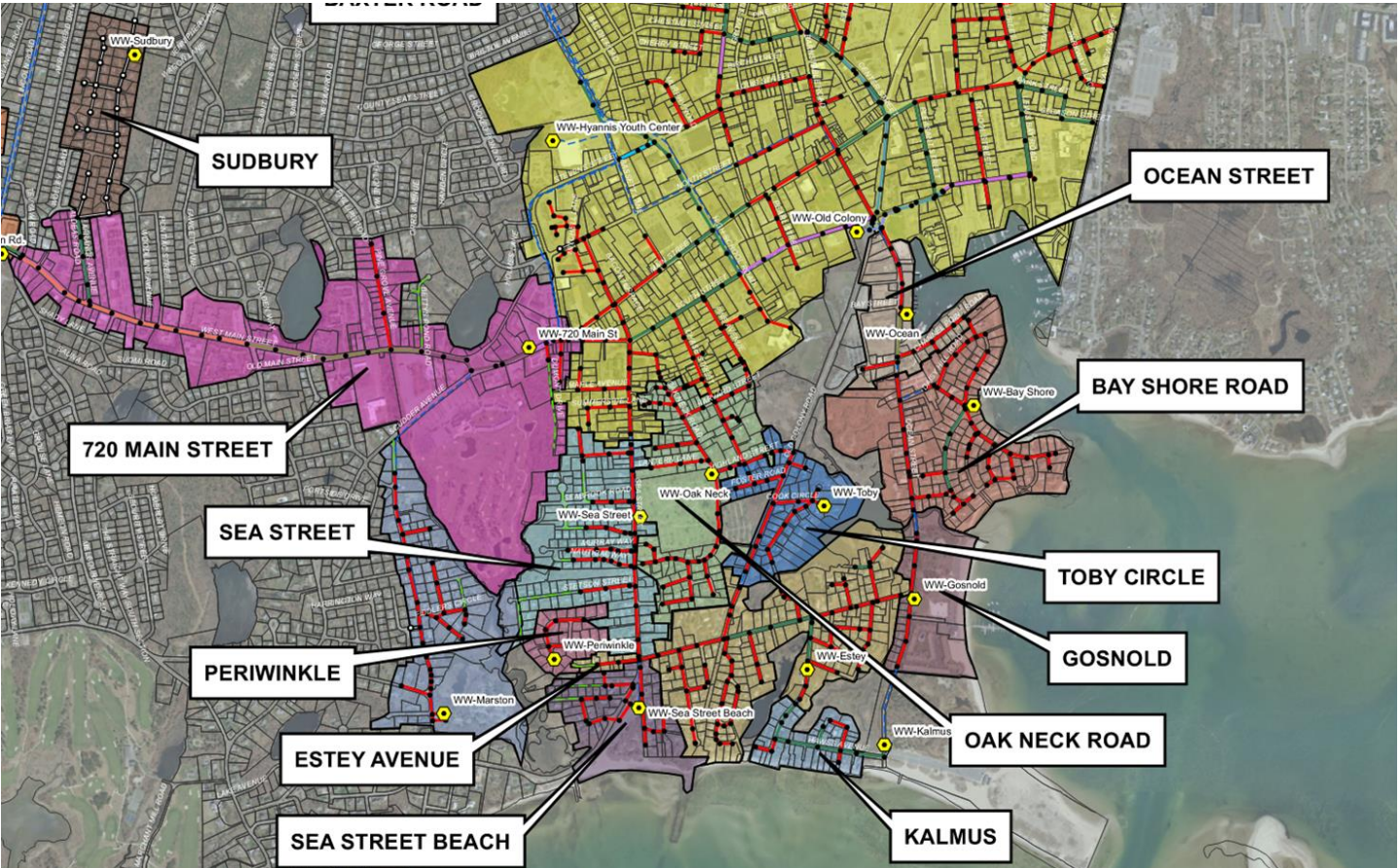
Newton St

Dumont Dr

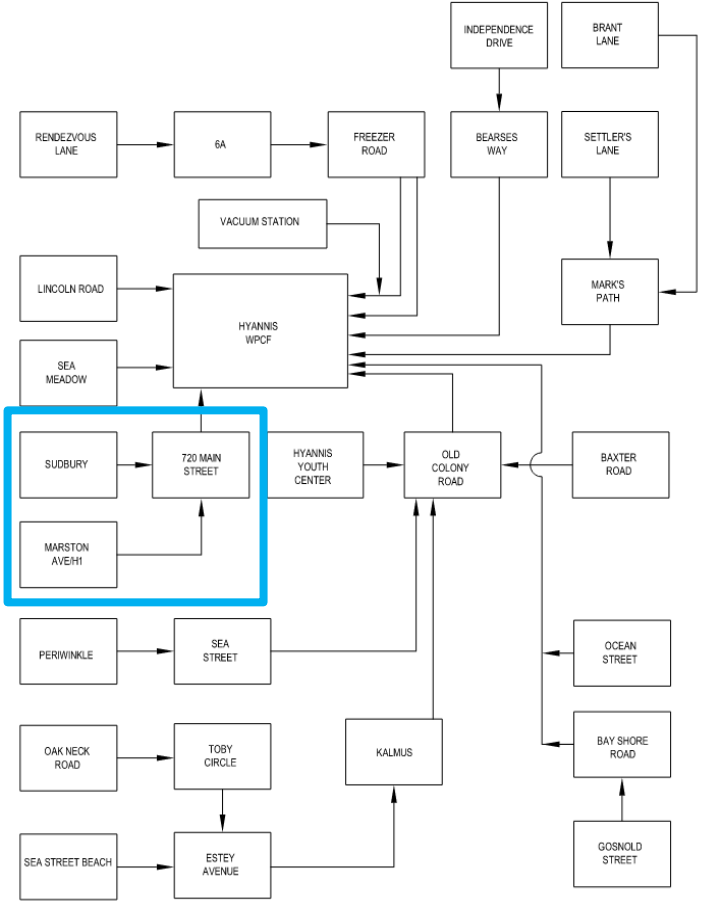
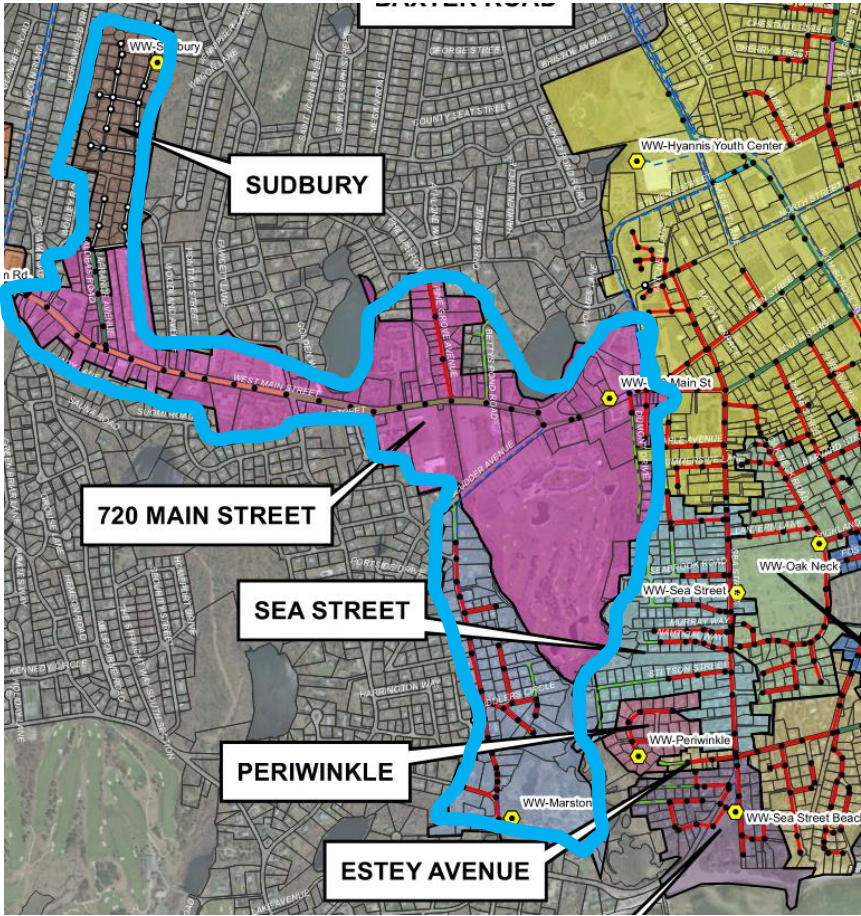
Potter Ave

Newton St

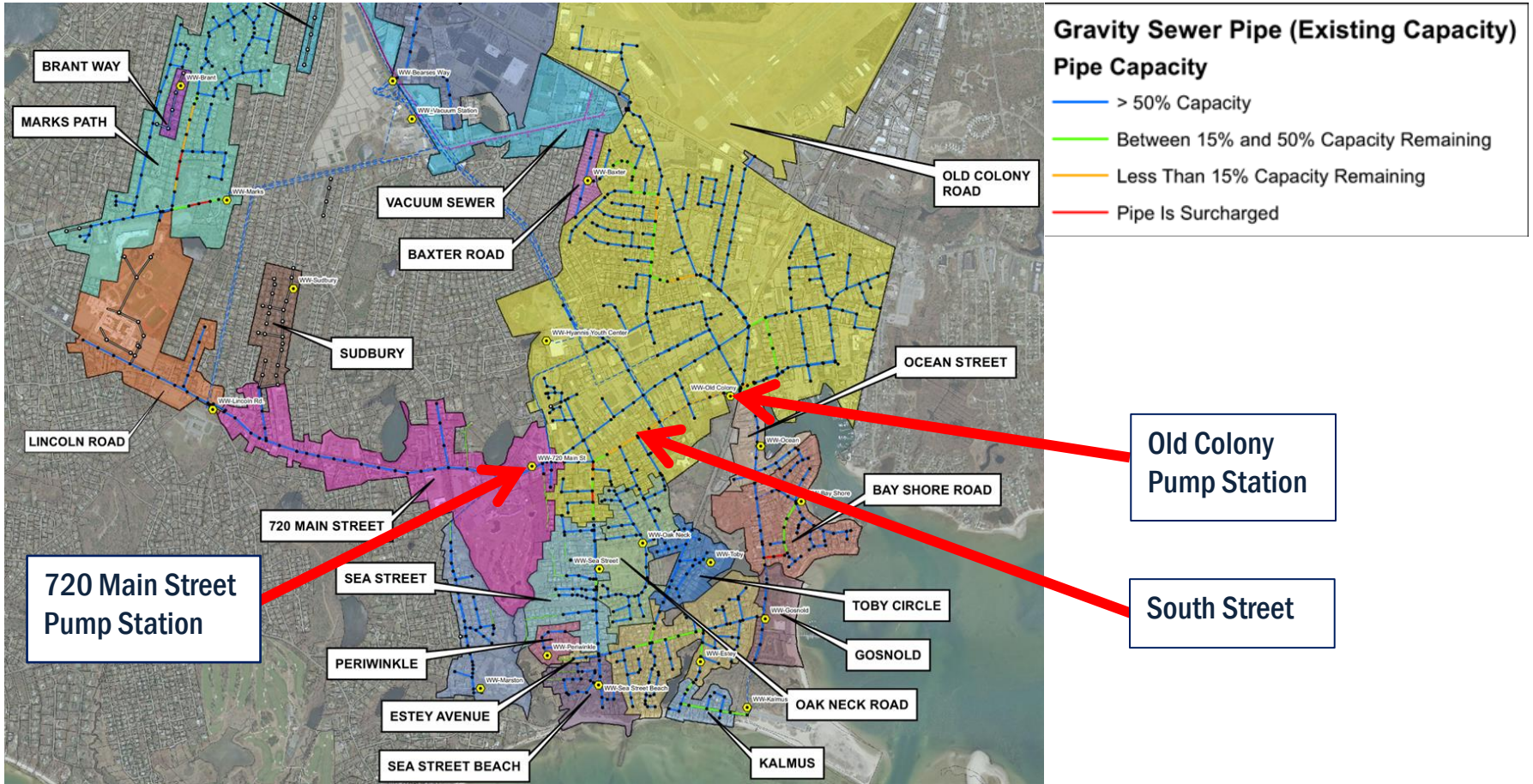
720 Main Street Pump Station Service Area



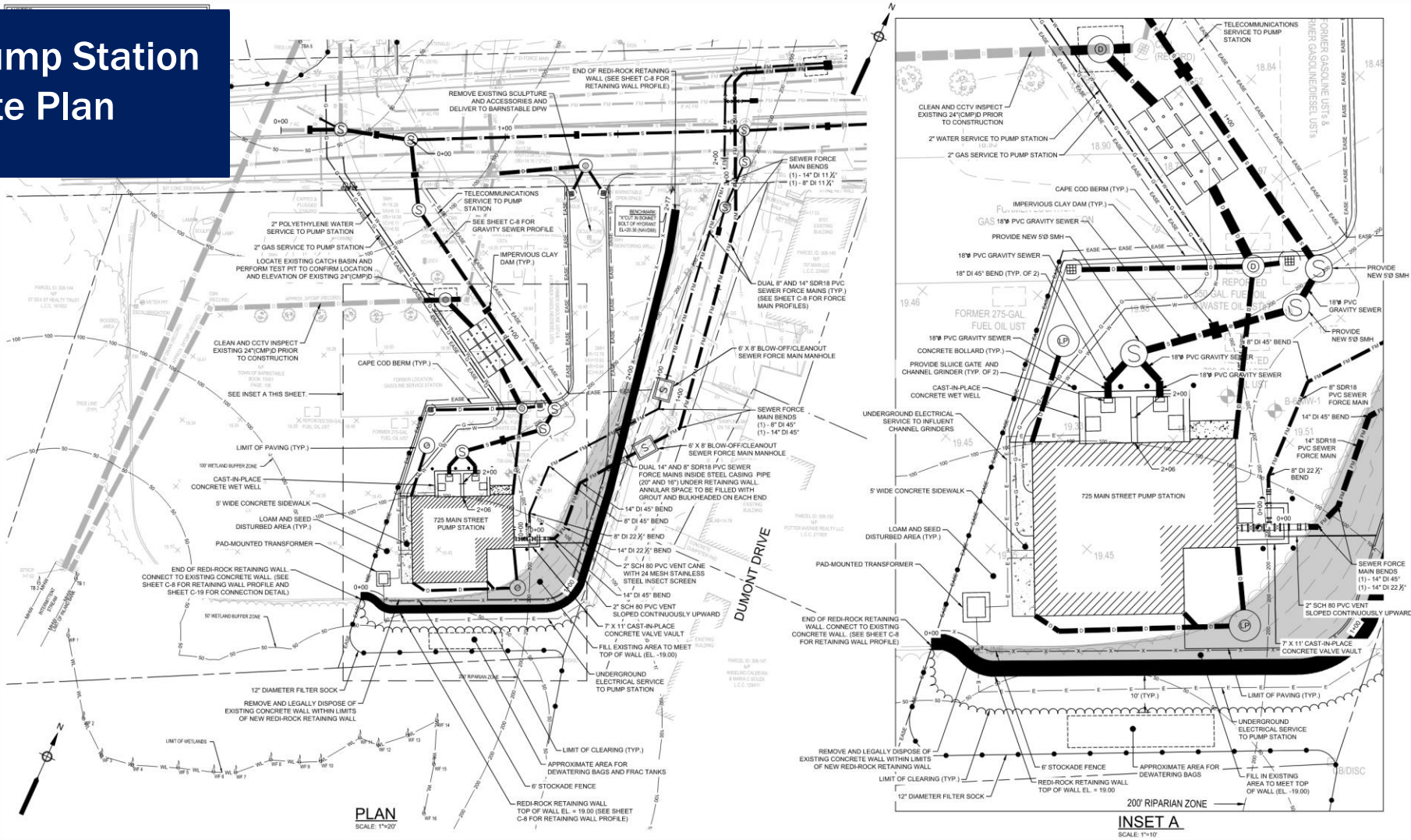
Existing Pump Station Service Area



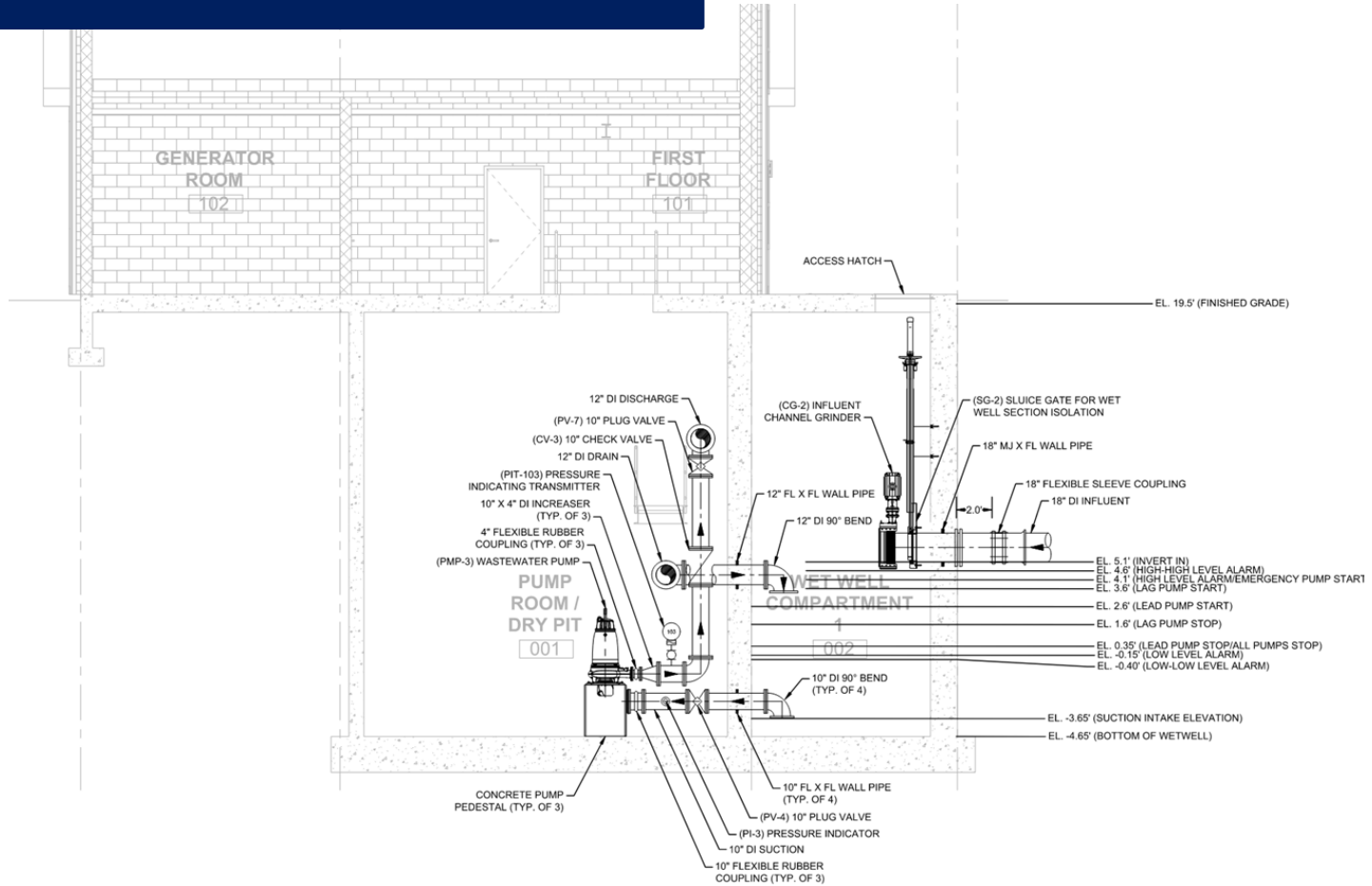
South Street Sewers



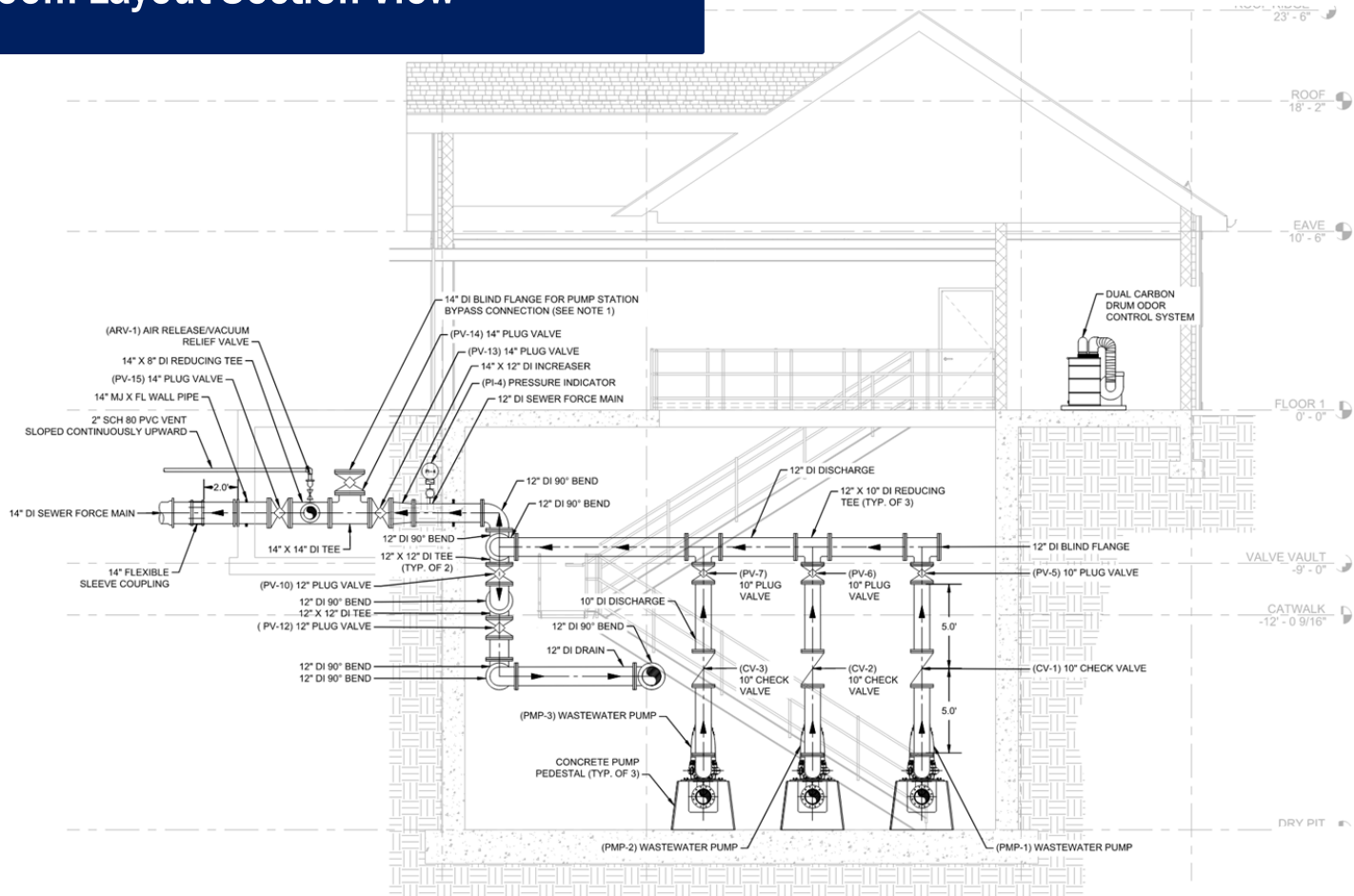
Pump Station Site Plan



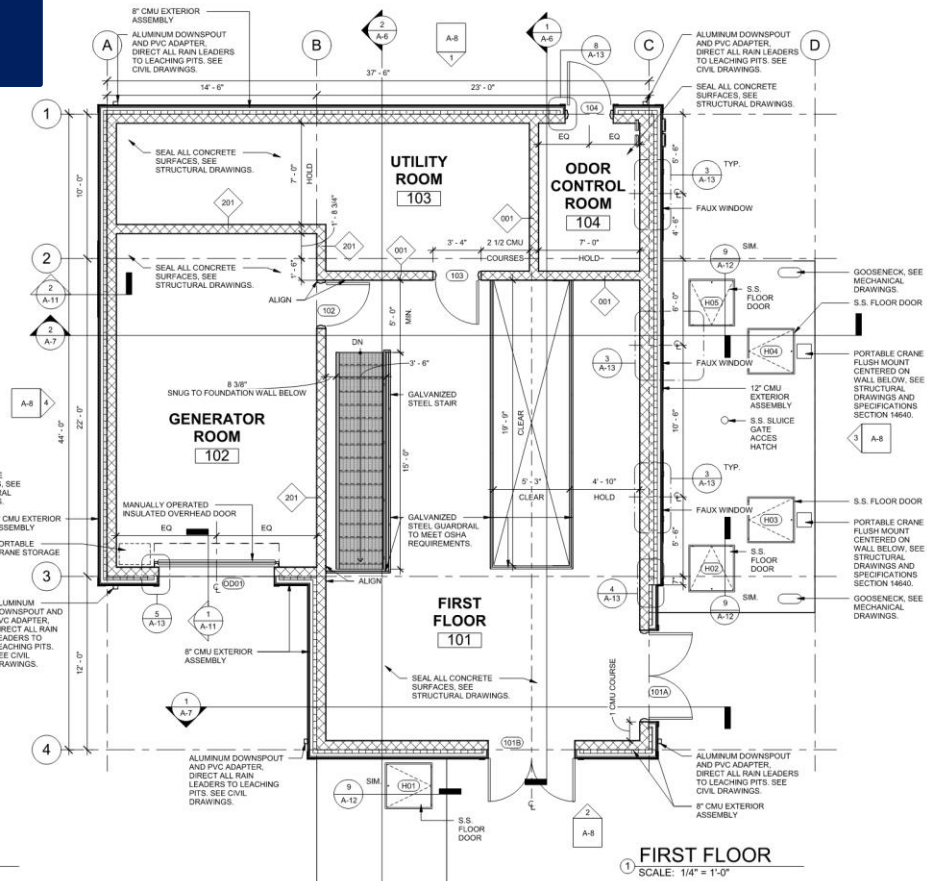
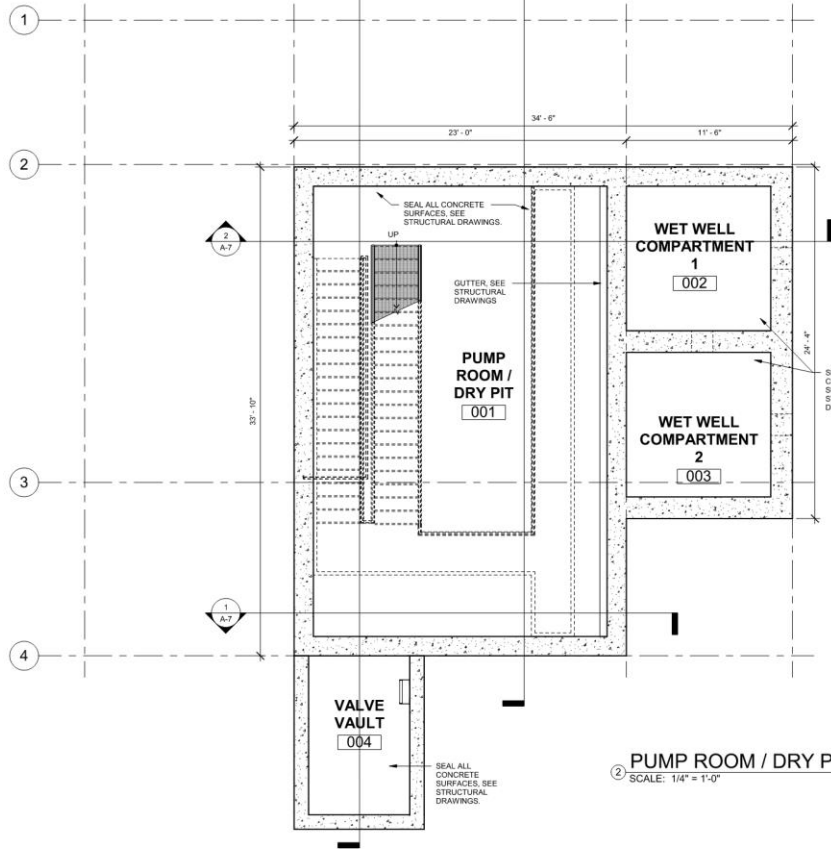
Pump Room Layout Section View



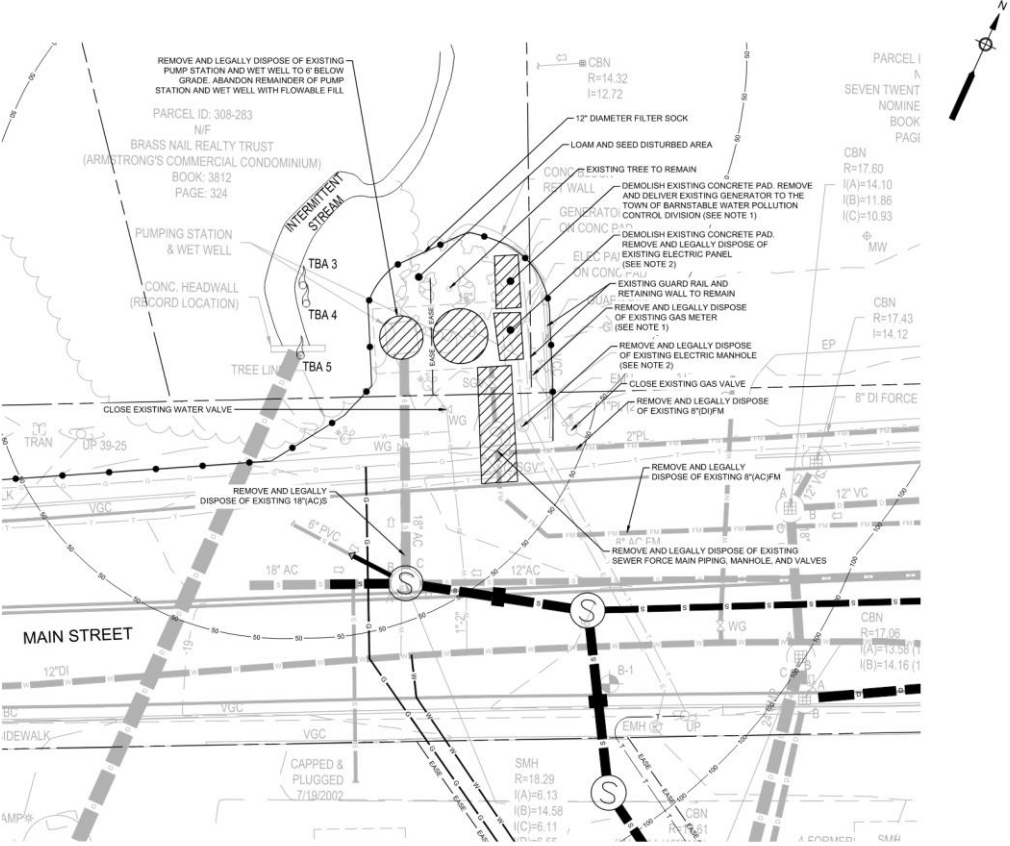
Pump Room Layout Section View



Floor Plan



Demolition of Existing Station



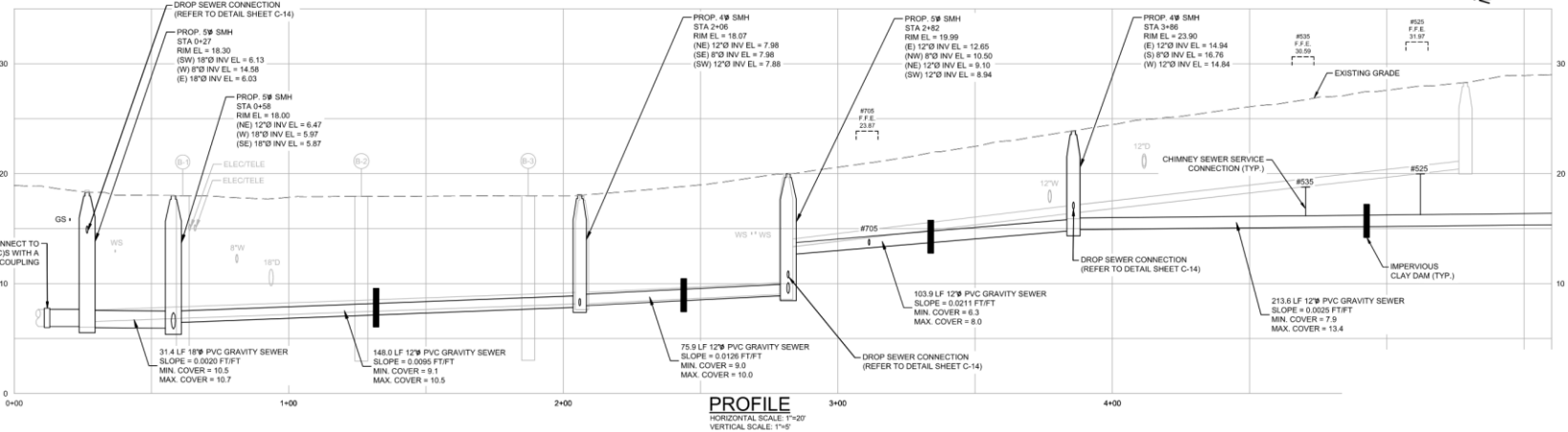
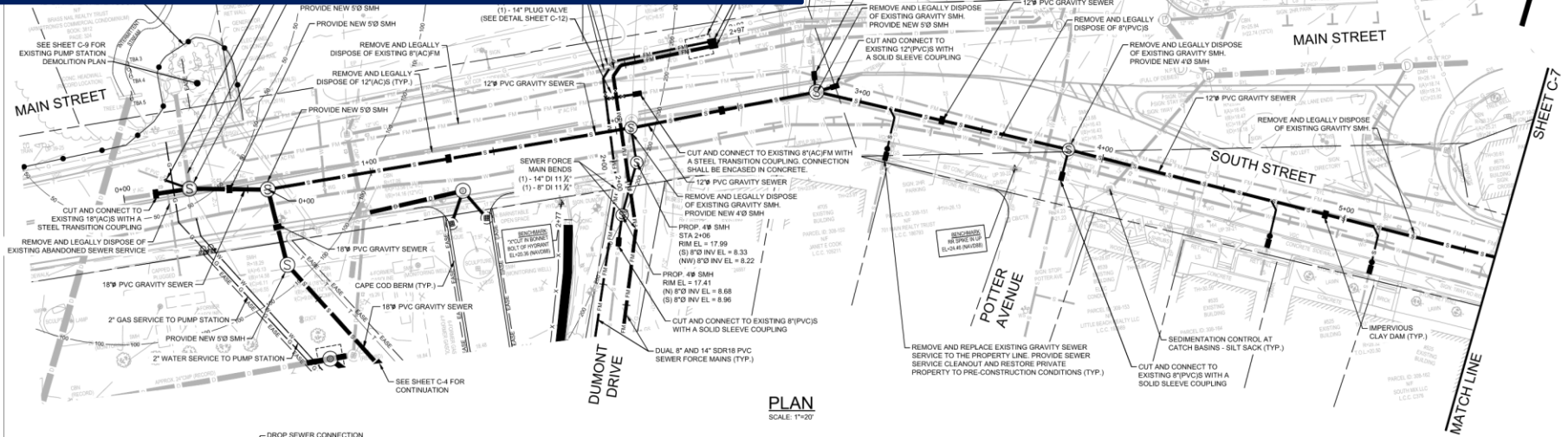
PLAN
SCALE: 1" = 10'

Pump Station Operations

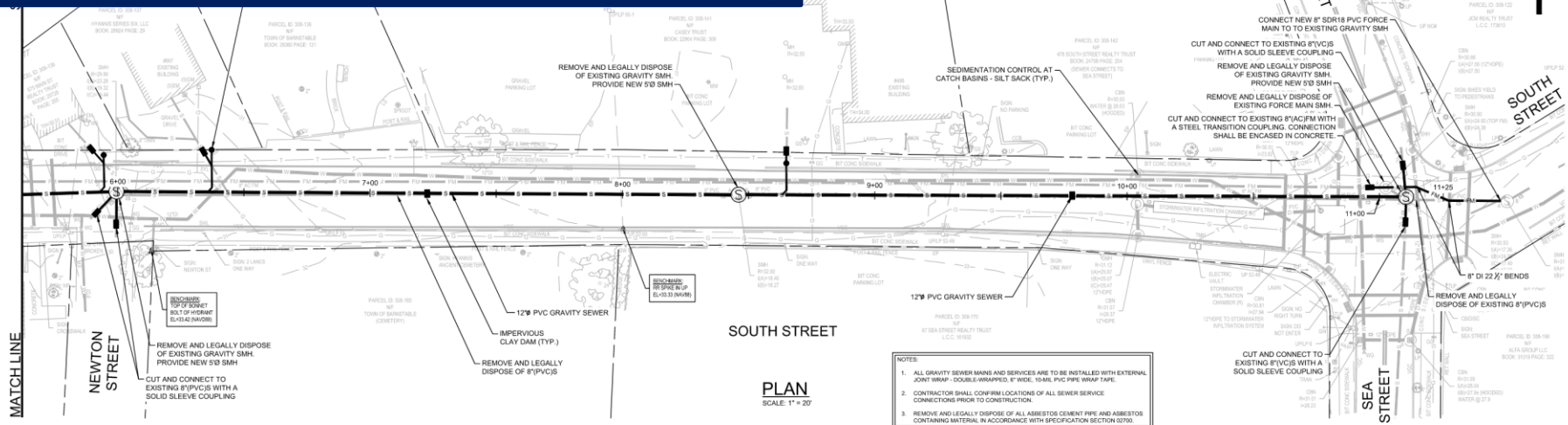
- Crews required to visit the pump station once a day
 - Identifiable in Town pickup truck, will consist of visual inspection
 - Pump station monitored remotely
- Periodic maintenance to service old/failing components
- Generators automatically exercised weekly for 15 minutes
- Odors and noise are generally not an issue for submersible pump stations when properly functioning
 - Equipment well below grade
- Landscaping is maintained by Town crews



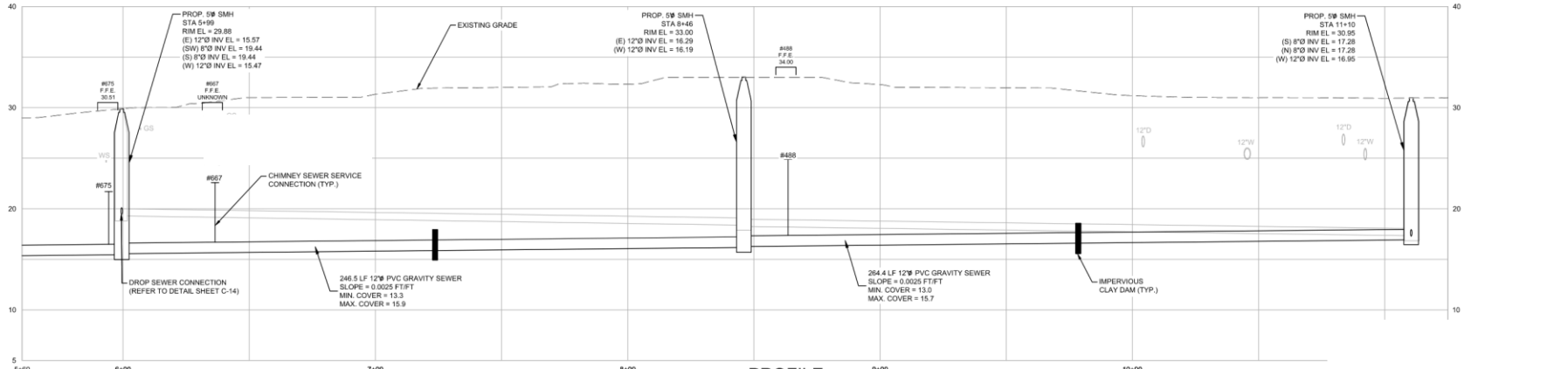
Sewer Work in Main Street & South Street



Sewer Work on South Street

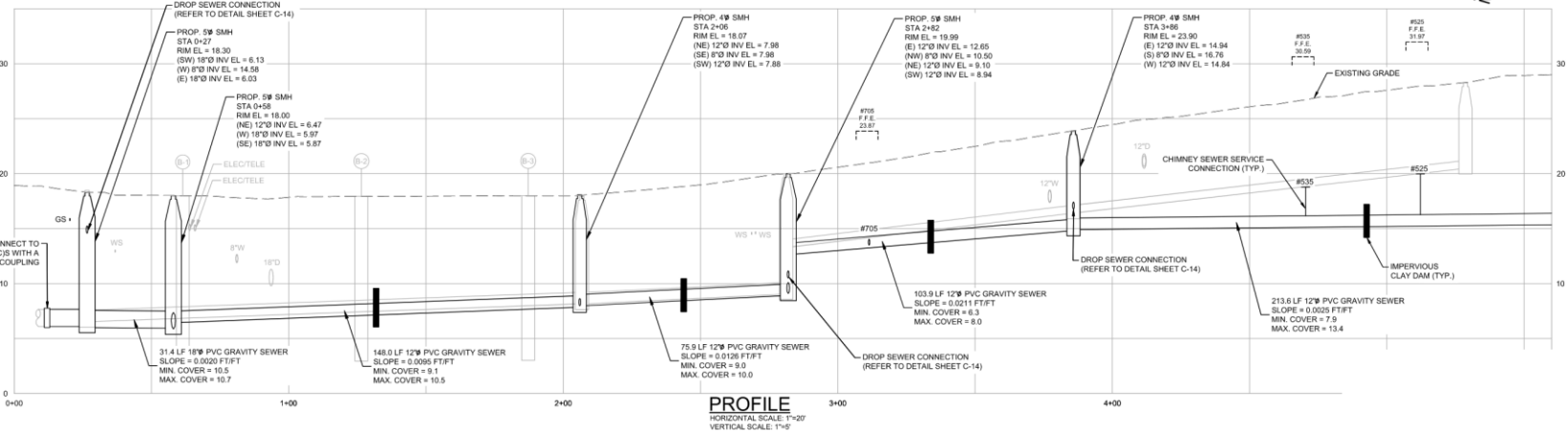
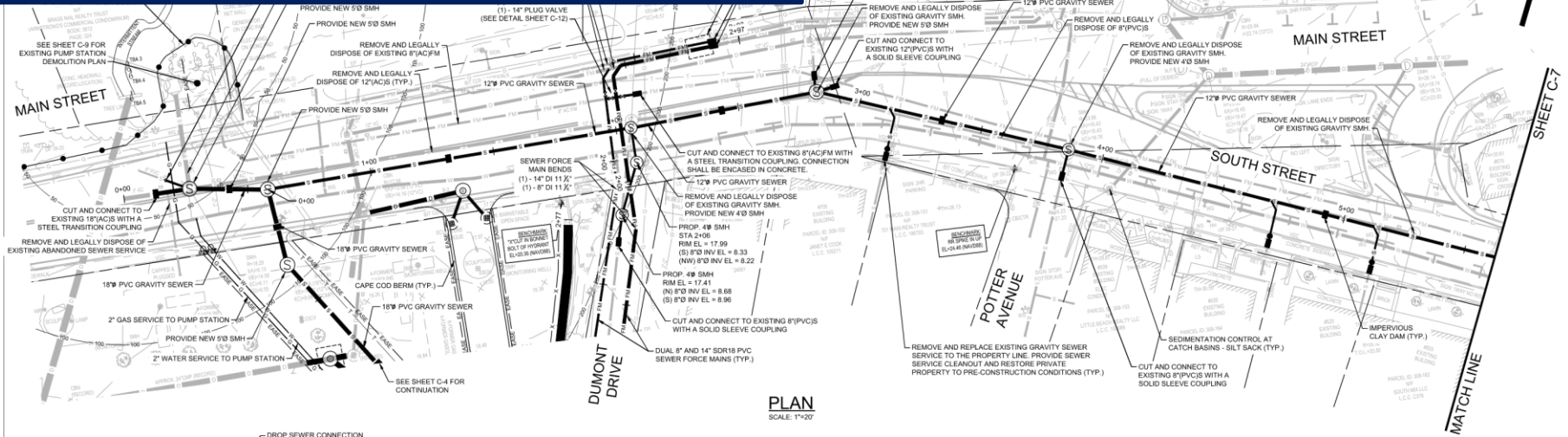


- NOTES:
1. ALL GRAVITY SEWER MAINS AND SERVICES ARE TO BE INSTALLED WITH EXTERNAL JOINT WRAP - DOUBLE-WRAPPED 8" BULKHEAD PVC PIPE WRAP TAPE.
 2. CONTRACTOR SHALL CONFIRM LOCATIONS OF ALL SEWER SERVICE CONNECTIONS PRIOR TO CONSTRUCTION.
 3. REMOVE AND LEGALLY DISPOSE OF ALL ASBESTOS CEMENT PIPE AND ASBESTOS CONTAINING MATERIAL IN ACCORDANCE WITH SPECIFICATION SECTION 02700.

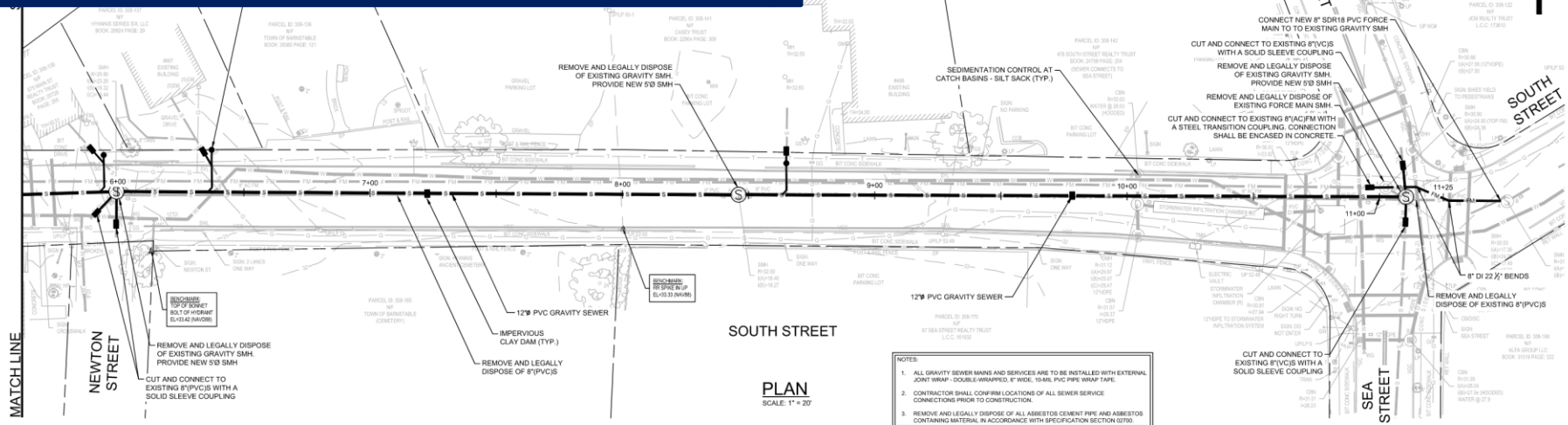


PROFILE
 HORIZONTAL SCALE: 1"=20'
 VERTICAL SCALE: 1"=5'

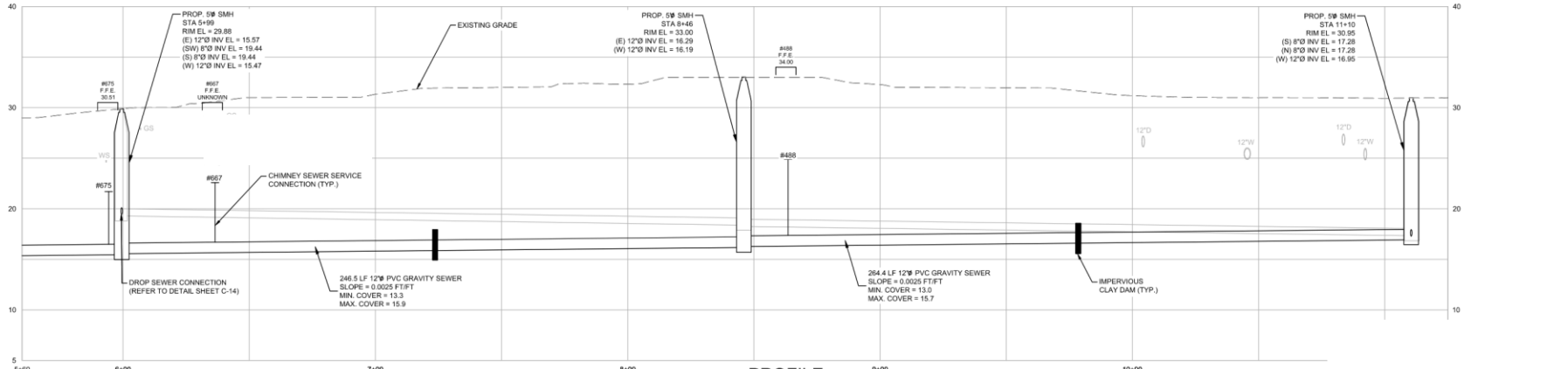
Sewer Work in Main Street & South Street



Sewer Work on South Street

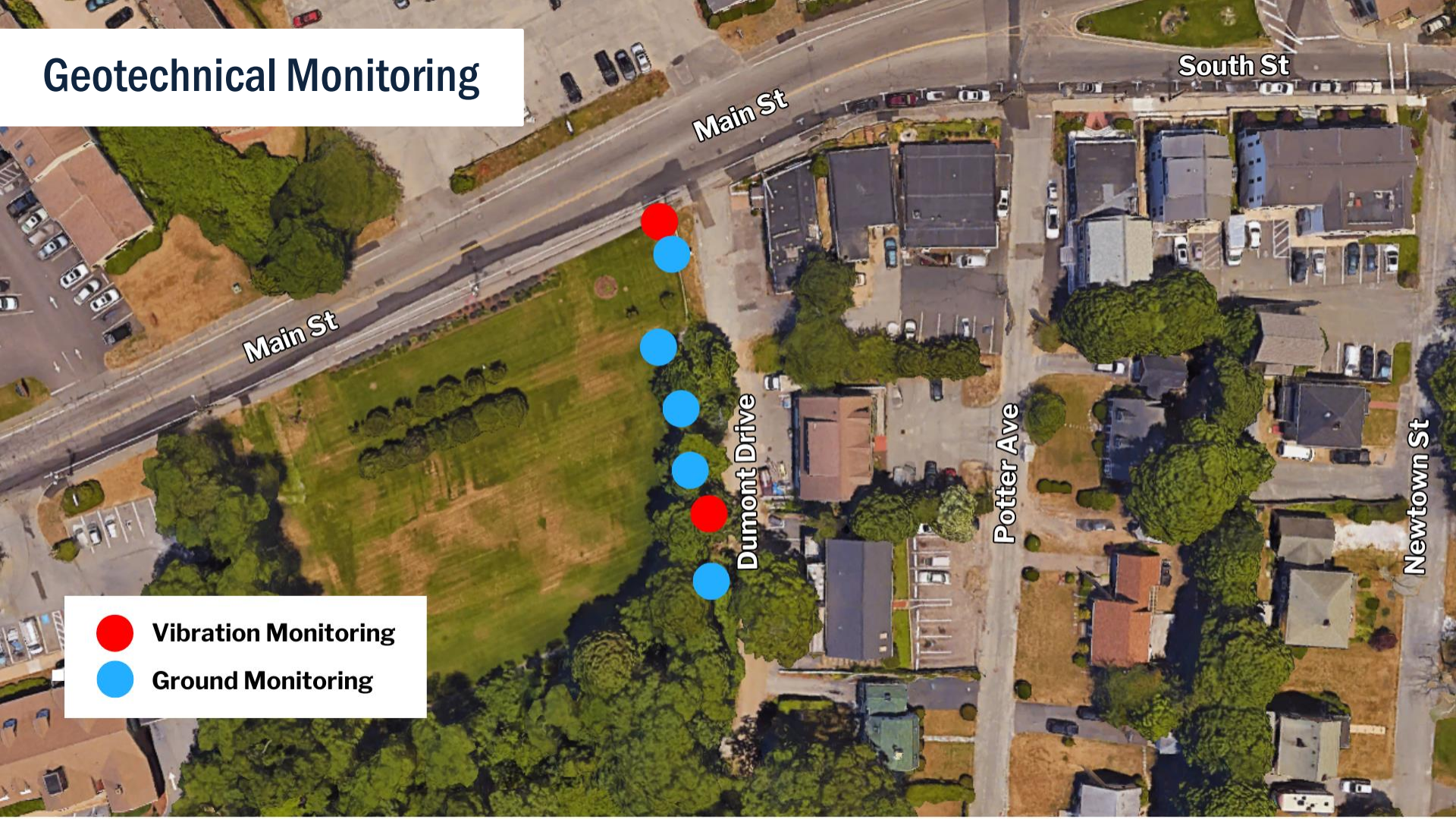


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PROFILE
 HORIZONTAL SCALE: 1"=20'
 VERTICAL SCALE: 1"=5'

Geotechnical Monitoring



South St

Main St

Main St

Dumont Drive

Potter Ave

Newtown St

-  **Vibration Monitoring**
-  **Ground Monitoring**

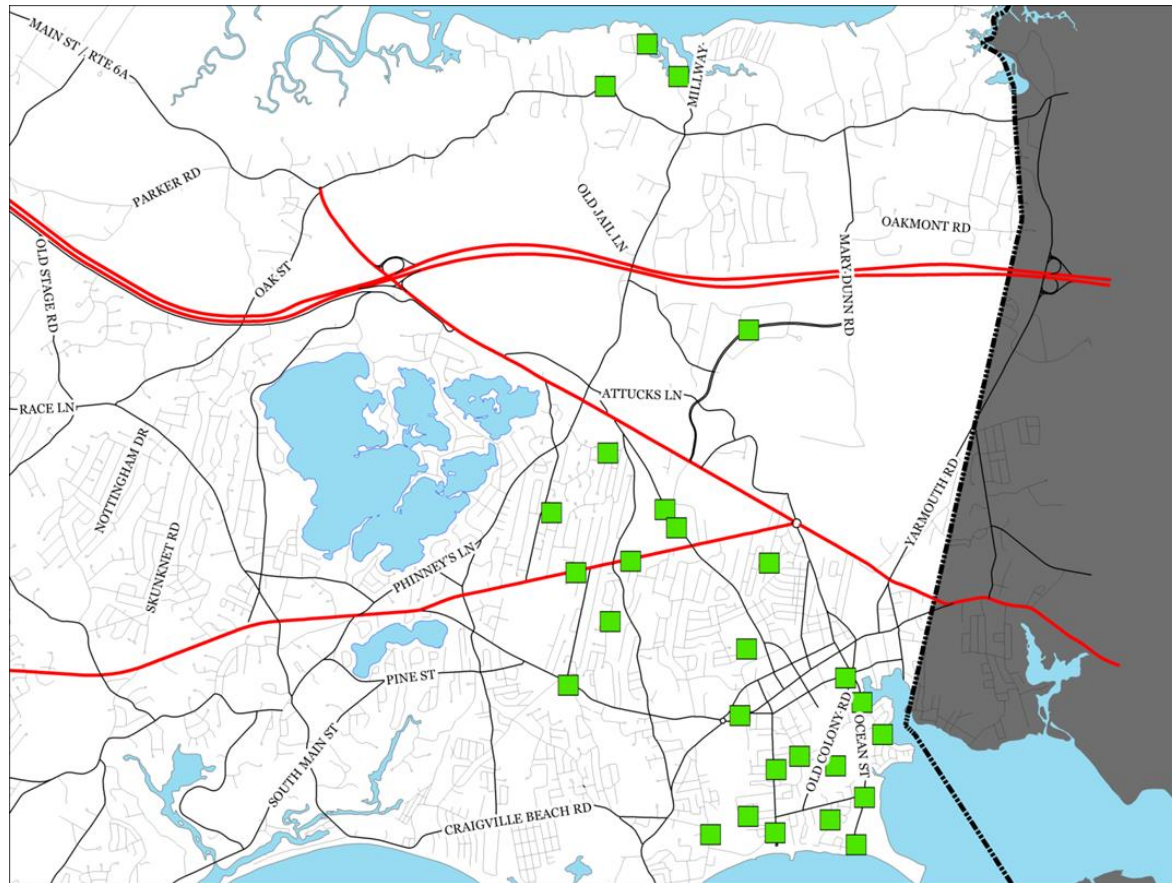
SRF Loan

LOAN ELIGIBILITY COSTS

<u>ITEM</u>	<u>LOAN ELIGIBLE COST</u>	<u>PROJECT ELIGIBLE COST</u>	<u>PROJECT INELIGIBLE COST</u>
<u>Construction</u>			
720 Main St PS Replacement	\$8,923,183.00	\$8,923,183.00	\$1,933,758.00
<u>Construction Contingency</u>			
Contingency	\$542,847.00	\$542,847.00	\$0.00
<u>Construction Services</u>			
Construction Services	\$1,456,970.00	\$1,456,970.00	\$0.00
<u>Other</u>			
Barnstables Independant Material Testing	\$27,000.00	\$27,000.00	\$0.00
Traffic Detail	\$50,000.00	\$50,000.00	\$0.00
Total:	\$11,000,000.00	\$11,000,000.00	\$1,933,758.00



Locations of Current Town of Barnstable Pump Stations



Current Town of Barnstable Pump Stations



A. Old Colony Road



B. Lincoln Road



C. Oak Neck Road



D. Gosnold Street



A. Route 6A



B. Settlers Lane



C. Marston Avenue



D. Estey Avenue