



# 720 Main Street Pump Station Relocation and Improvements Project

Informational Session  
Feb. 15, 2023

Town of Barnstable  
Department of Public Works



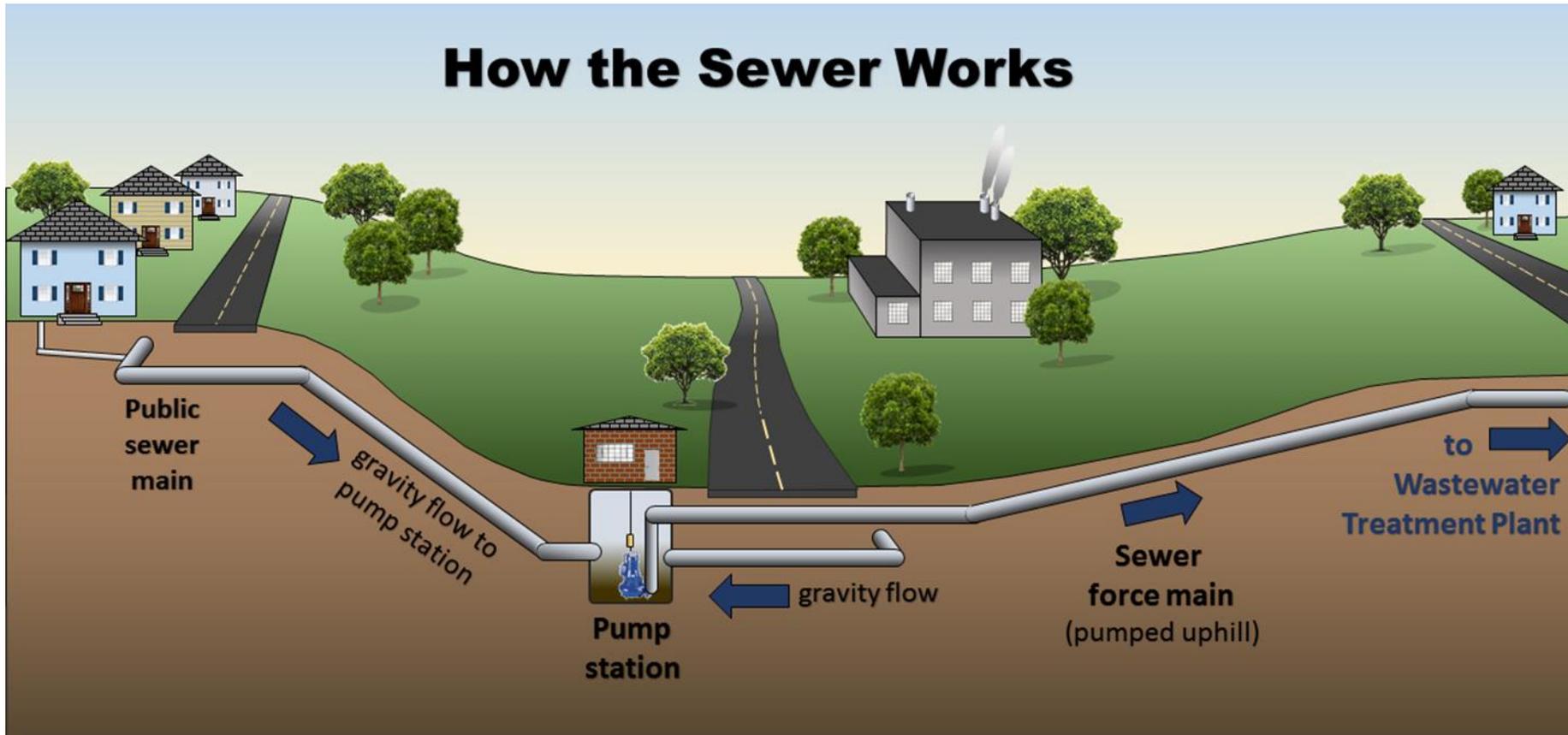
# Meeting Agenda

- Project Background & Need
- Proposed Project
  - Site Design
  - Pump Station Design
  - Sewer Improvements & Roadwork
- Funding
- Project Schedule
- Questions



# How a Sewer Collection System Functions

## How the Sewer Works





**Existing  
Pump Station**

**Existing  
Culvert**

**Stewart's  
Creek**

North St

Main St

Main St

Main St

South St

South St

South St

Main St

Main St

Dumont Dr

Potter Ave

Newton St

Dumont Dr

Potter Ave

Newton St

# 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
- 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



# Project Background & Need

## 2019 Pump Station Asset Management Plan

- Identified deficiencies that need to be addressed
- Indicated that the station is “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

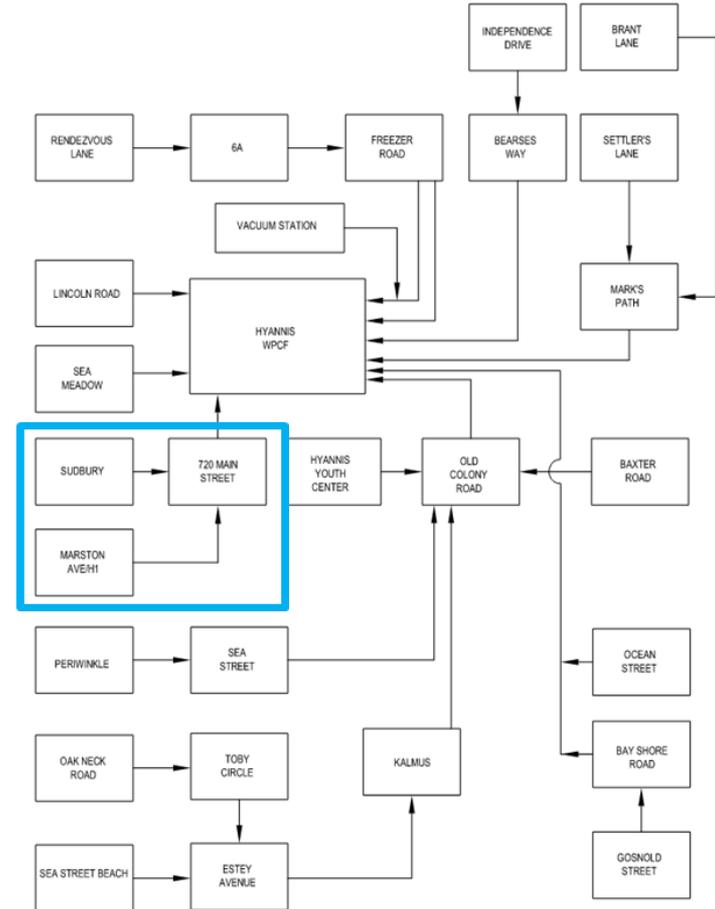
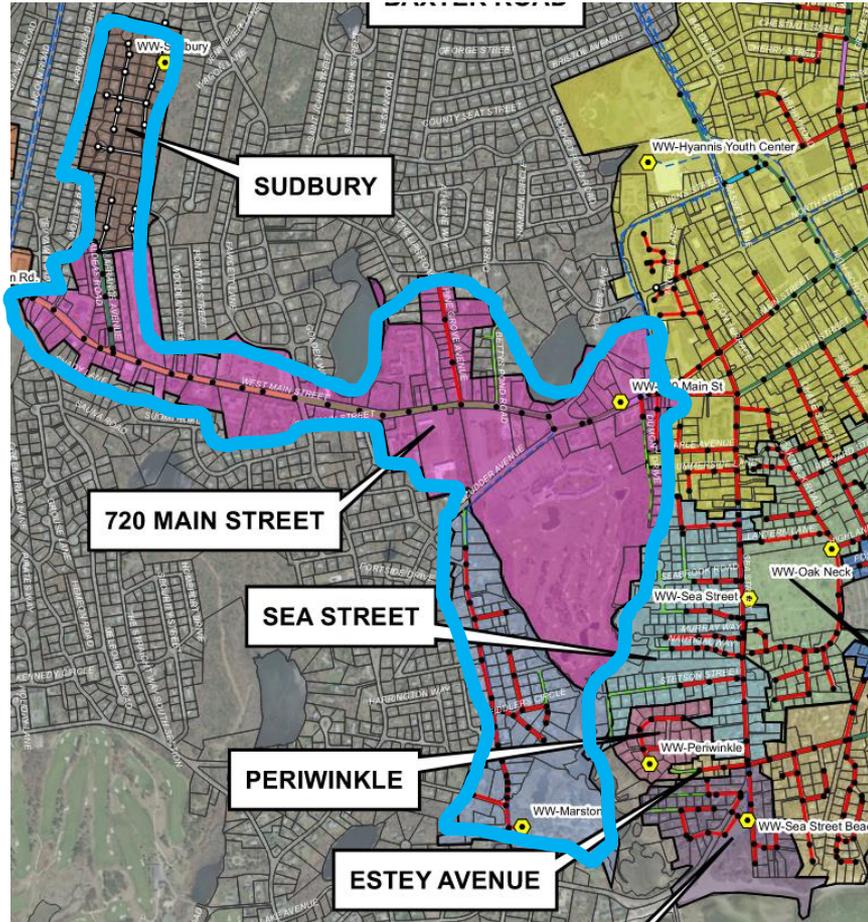


# Existing Pump Station at 720 Main Street



Existing  
Infrastructure

# Existing Pump Station Service Area



# Addressing Other 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 estimate) and disruptive ( $\pm 25'$  deep)
- Redirecting flow from the intersection of South Street @ Sea Street, to a replaced and improved 720 Main Street Pump Station, can resolve capacity concerns on South Street



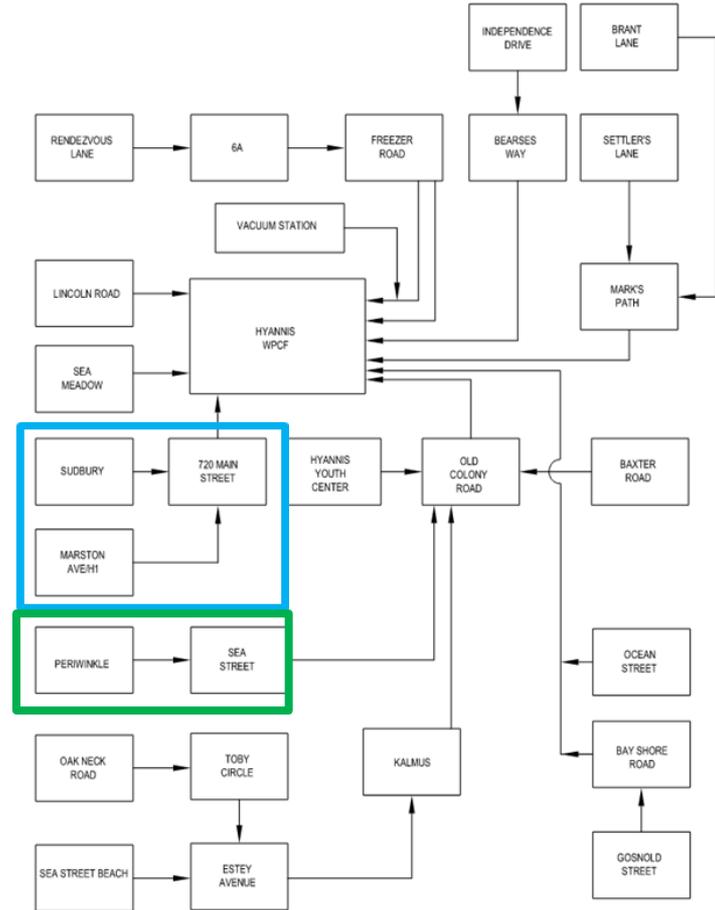
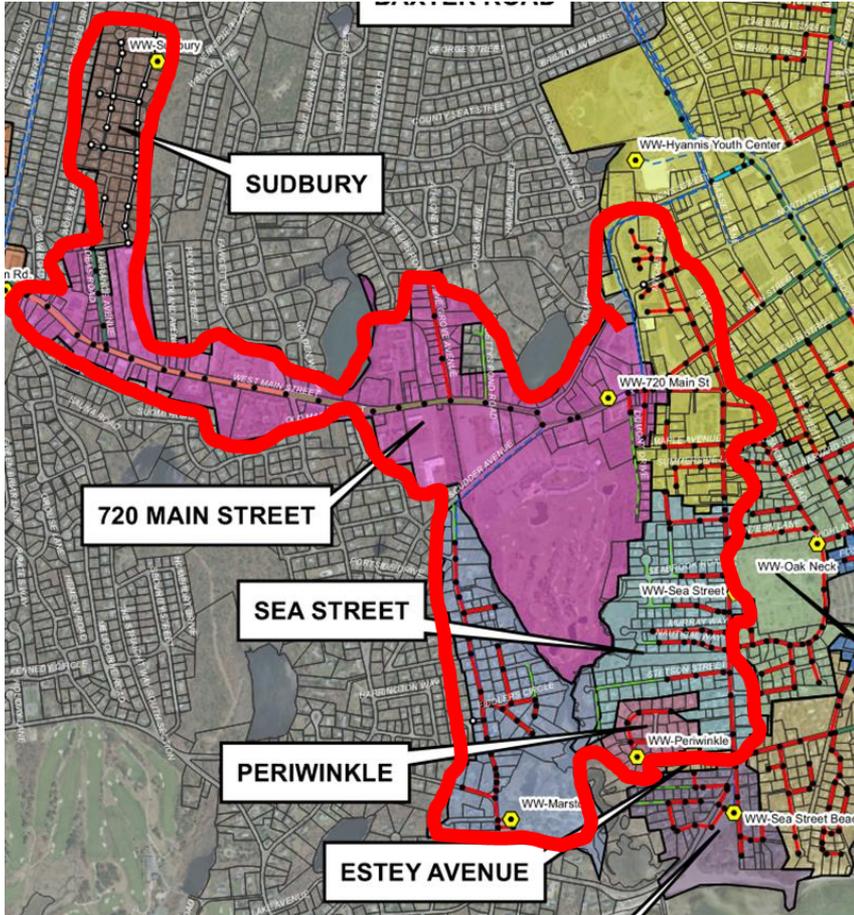
### Gravity Sewer Pipe (Existing Capacity)

#### Pipe Capacity

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



# Proposed Pump Station Service Area



# Proposed Project

## 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 constructing a sewer pump station
- 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:**

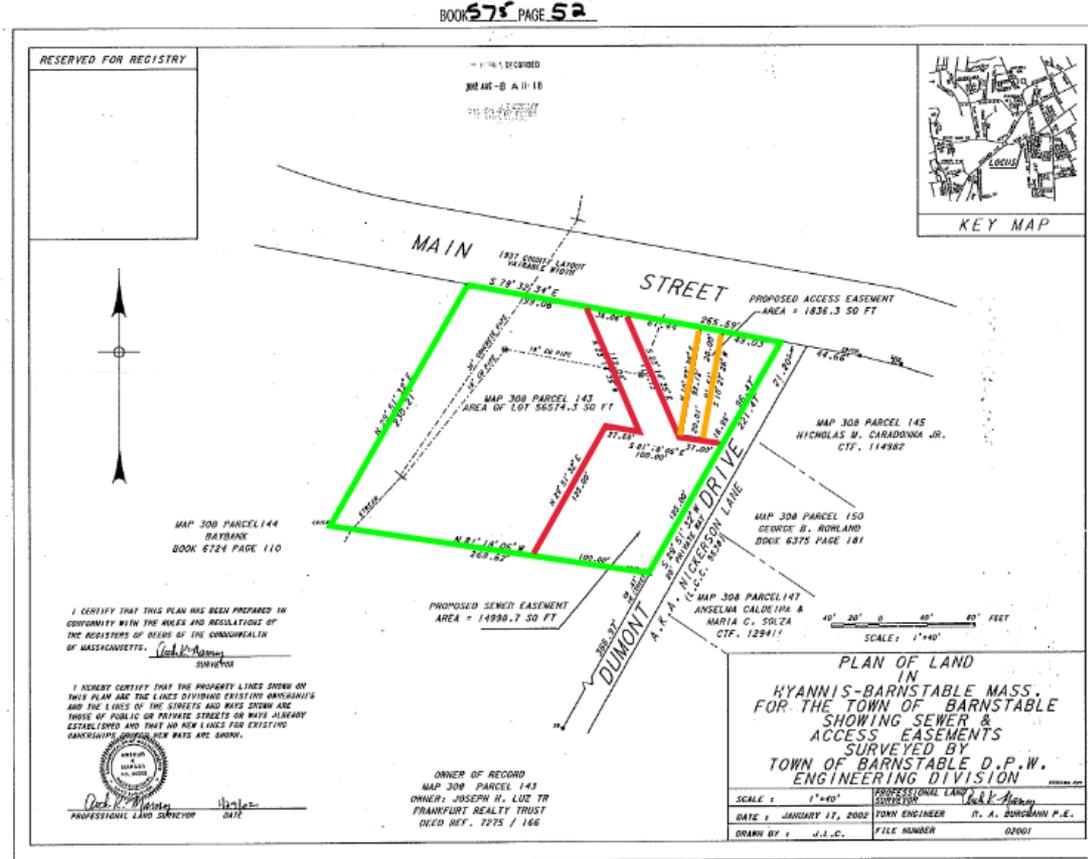
Easement retained for  
wastewater pump station

**Orange:**

Easement retained for accessing  
wastewater pump station

**Green:**

Boundary of 725 Main Street



575-52

# Site Location Map

**Existing  
Pump Station**

**Existing  
Culvert**

**Stewart's  
Creek**

**Proposed  
Pump Station**

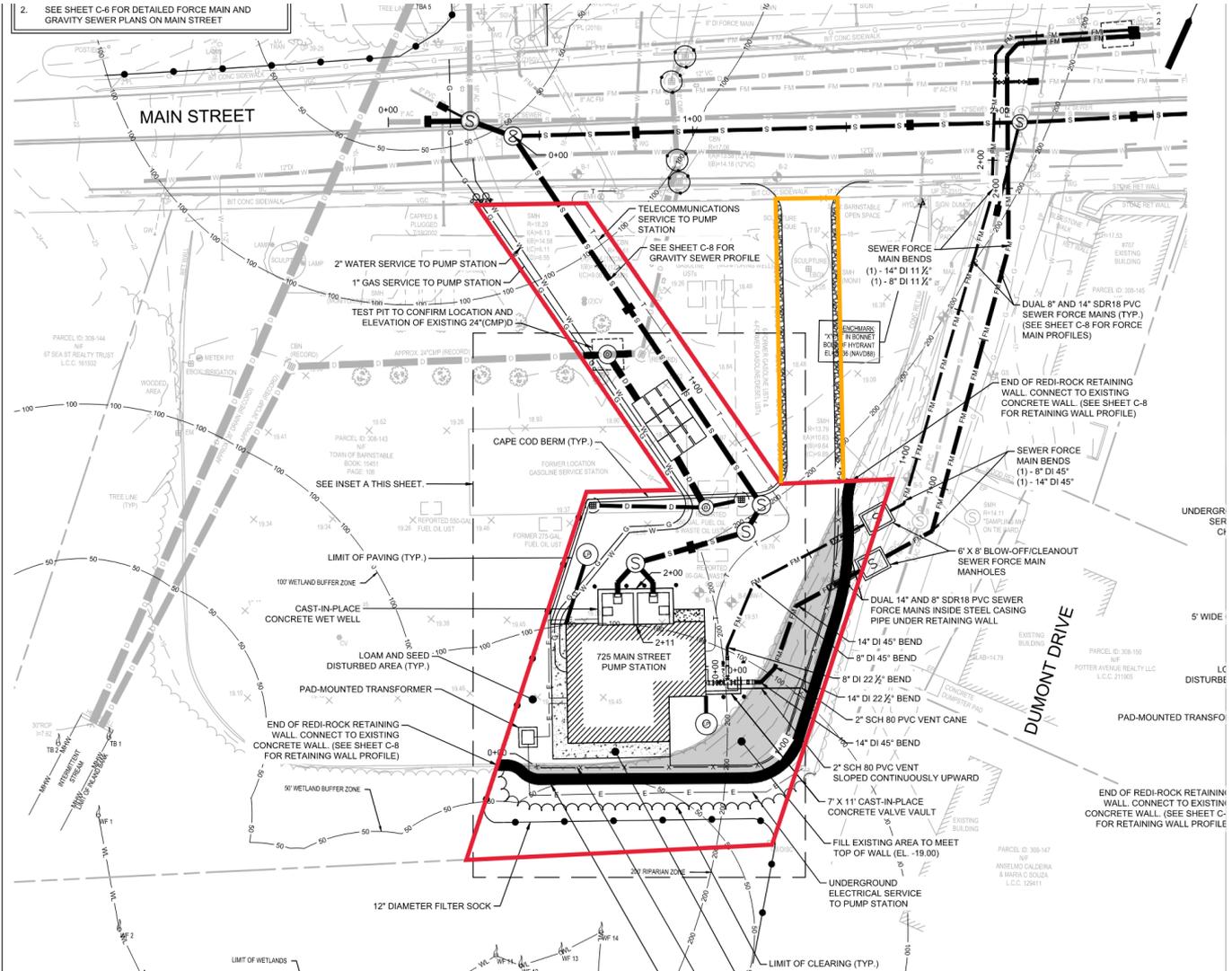


# Proposed Pump Station Overview

- Wet-pit, dry-pit style pump station
- Single story structure with concrete masonry walls, cedar shingle 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



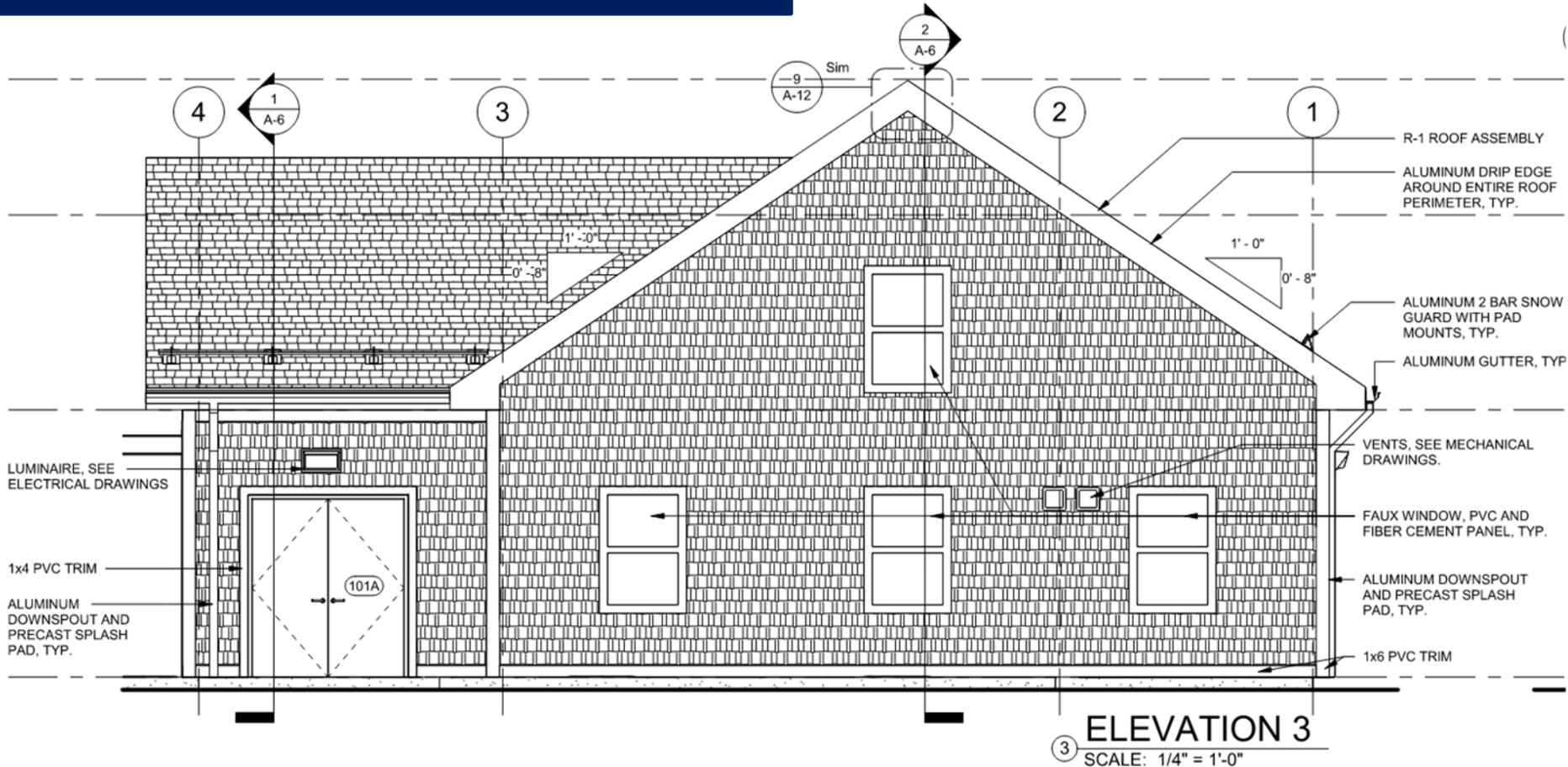
# Proposed Pump Station Site Plan



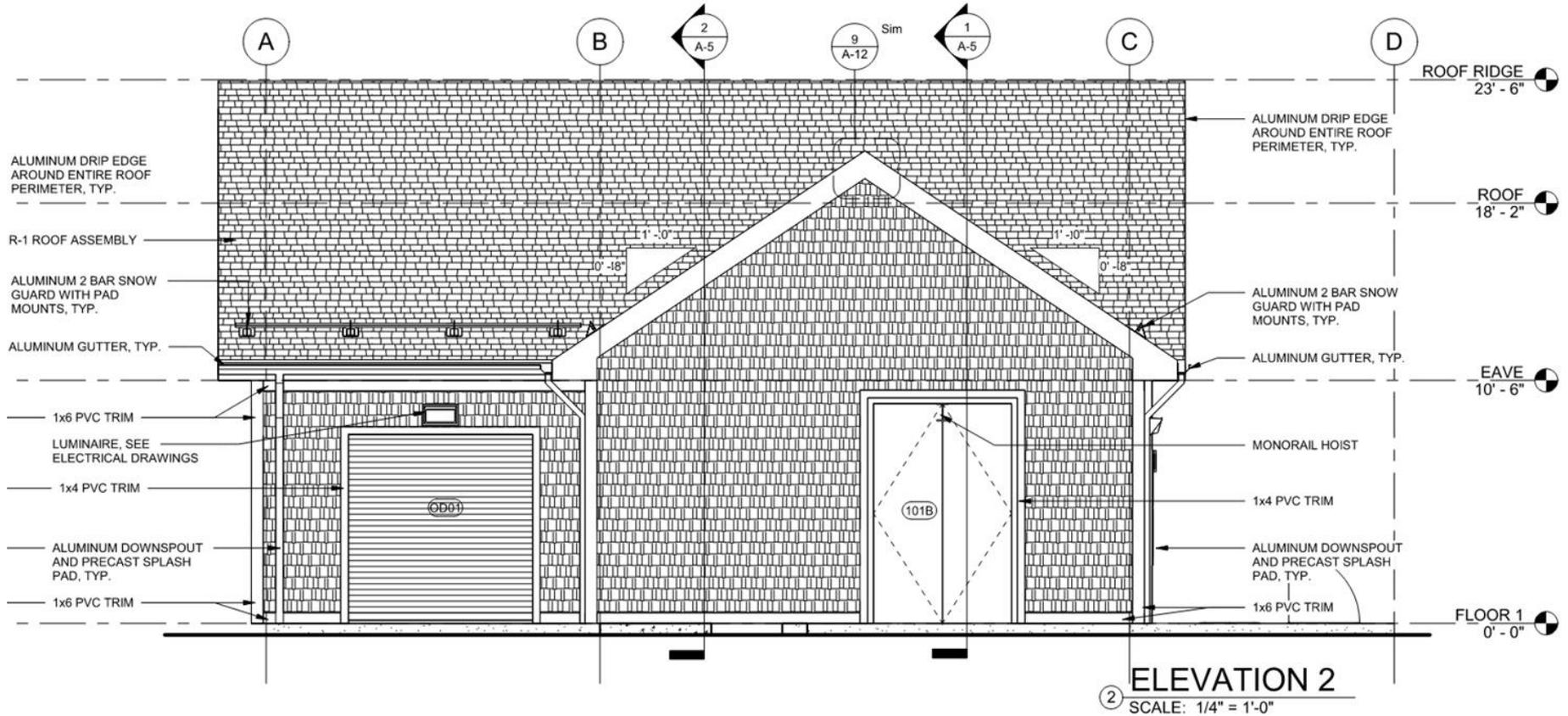
# Proposed Pump Station Site Plan



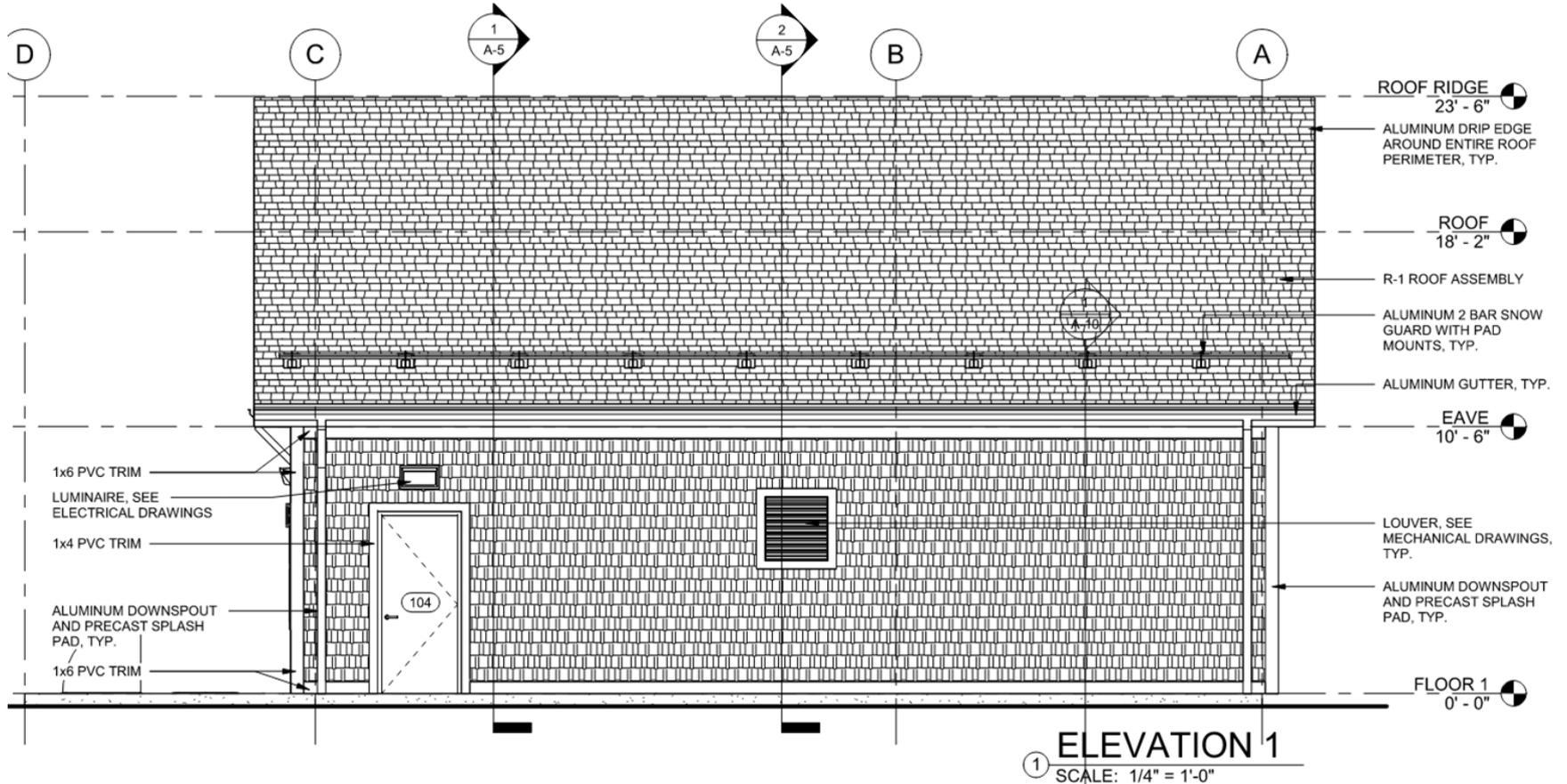
# Looking South (from Main Street)



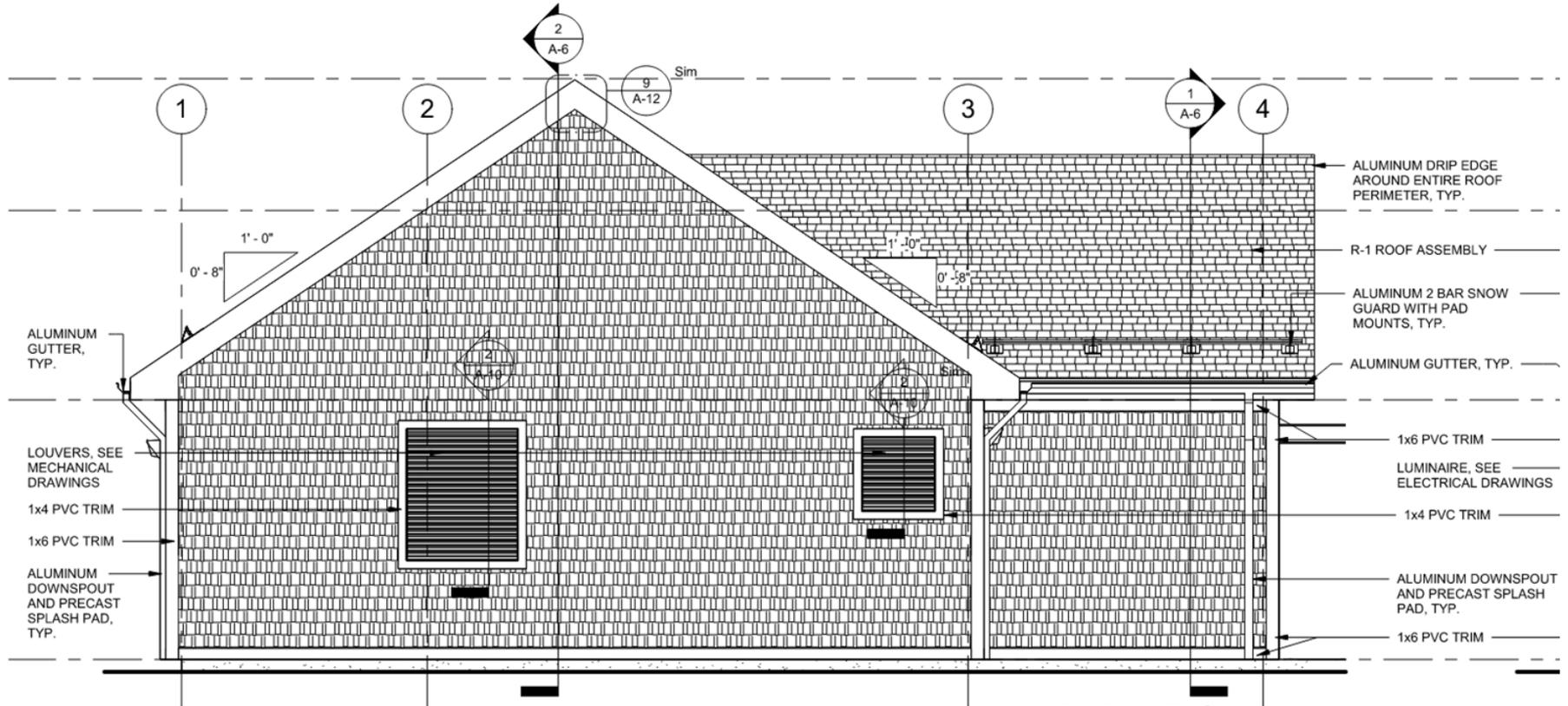
# Looking West (from Dumont Drive)



# Looking East (from within 725 Main Street)



# Rear View



**ELEVATION 4**

4 SCALE: 1/4" = 1'-0"

# Front View



**Looking South from Main Street**



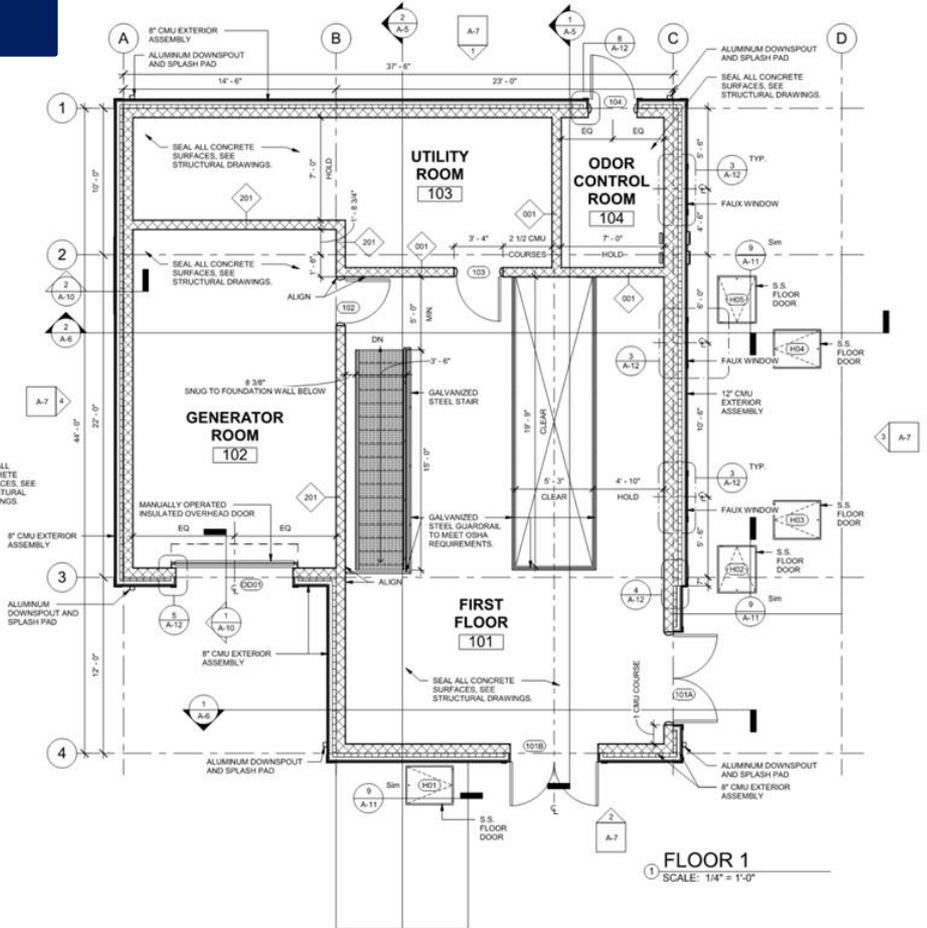
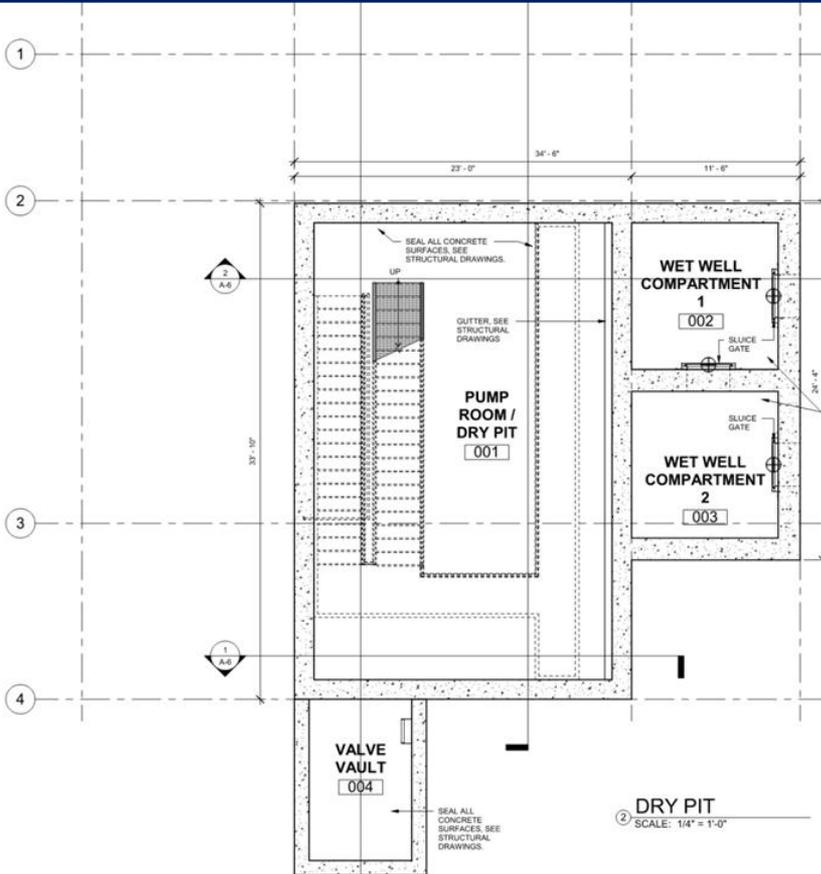
**Looking South from Main Street (Zoomed In)**



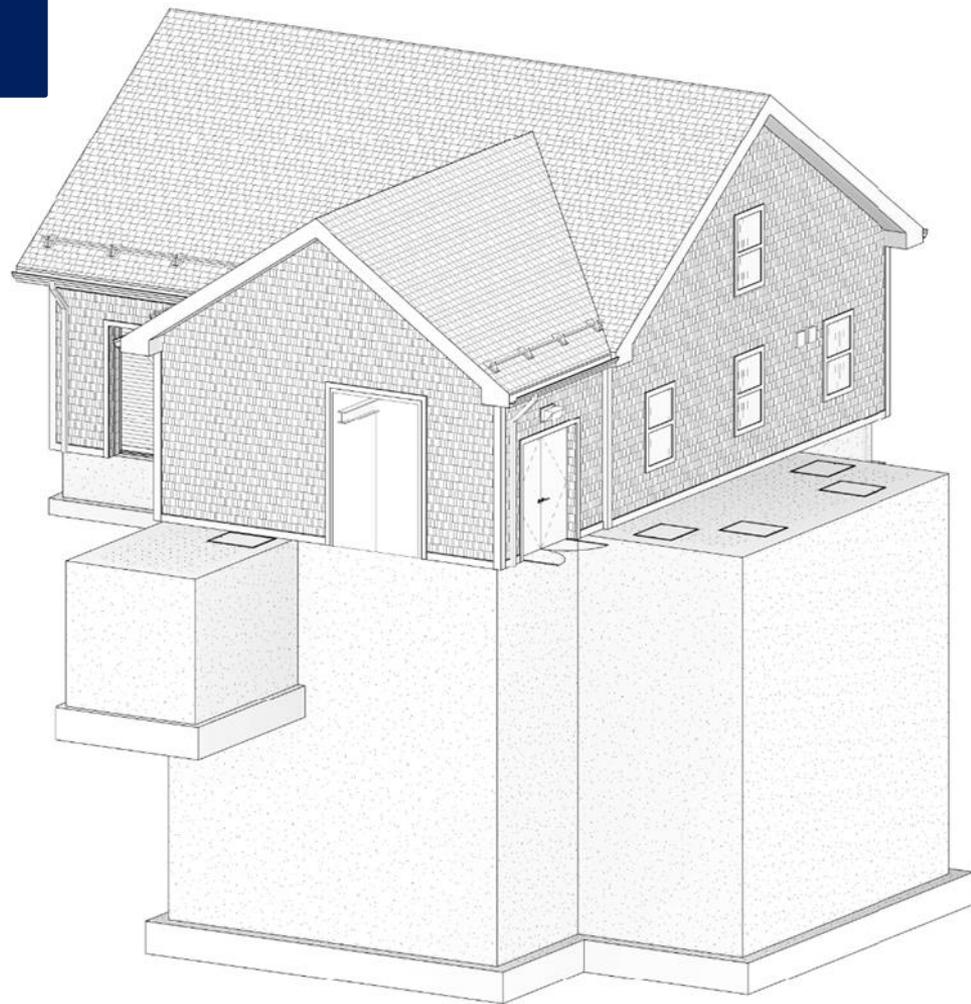
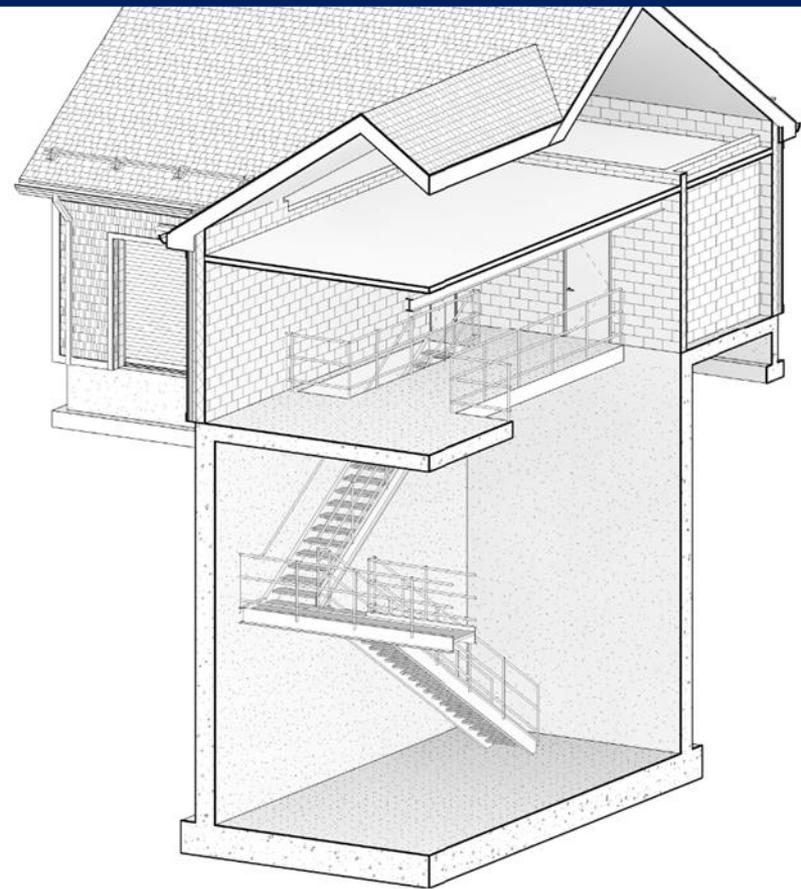
Looking East from Dumont Drive



# Floor Plan



## Perspective View



# Sewer Work Overview

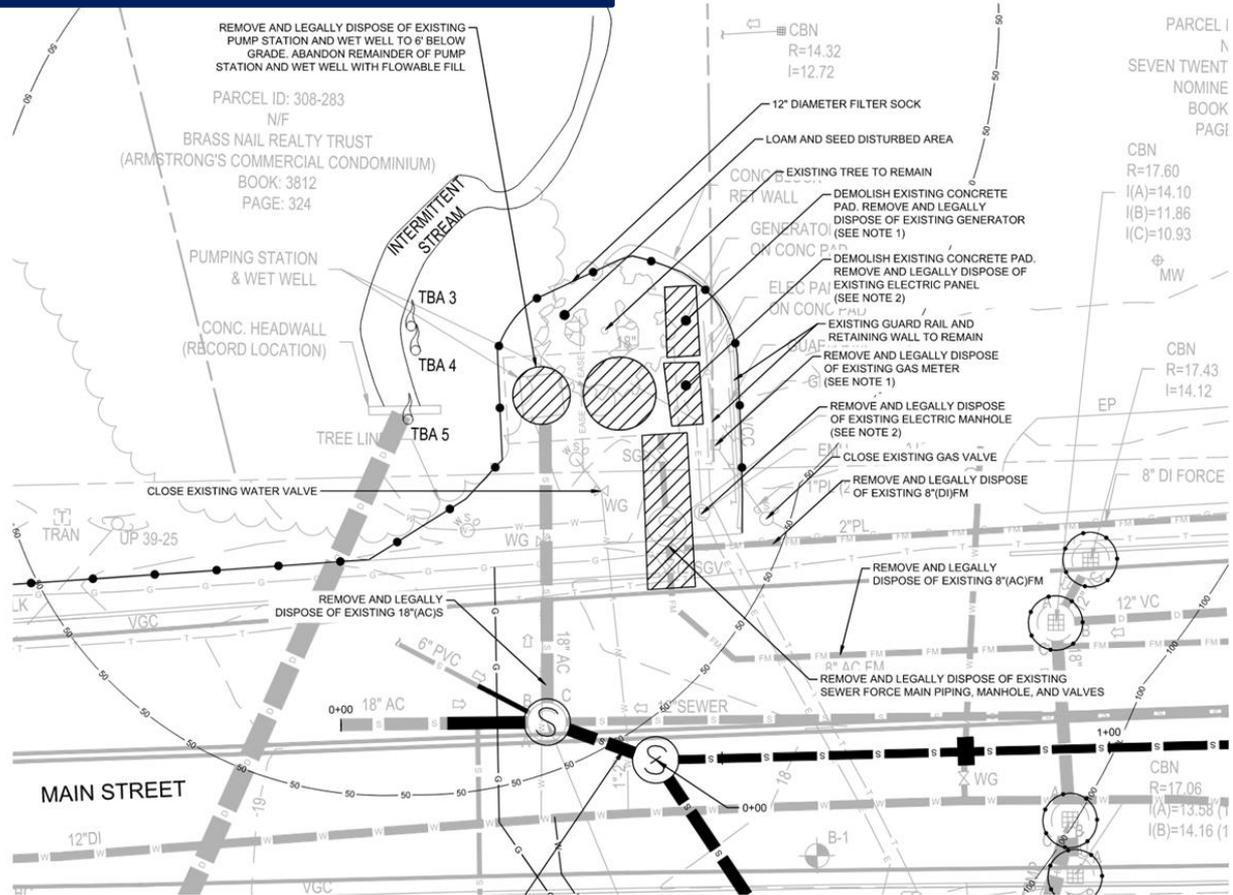
- Sewers will be replaced from the intersection of South Street & Sea Street to the proposed pump station. ( $\pm 1,100$  LF)
  - Sewer service maintained to all existing users (bypass system)
  - Reconnection of existing users
  - Relocation of utilities as necessary
  - Road closures and detours necessary
    - Coordination w/ local residents and businesses
  - Curb to curb repaving
- 8" and 14" force main from proposed pump station, up Dumont Street, to existing force mains in Main Street







# Demolition of Existing Station



# Project Funding

- Opinion of Probable Construction Cost = \$11,000,000
- Project funded by Water Pollution Control Division Enterprise Fund
- Town received \$1,965,218.61 Barnstable County ARPA grant for the project
- Project is listed on 2022 Clean Water State Revolving Fund (CWSRF) Intended Use Plan
  - Low interest loan (1.5% for Barnstable)
  - Loan forgiveness subsidy (10.8% for Barnstable's 2021 projects)
  - Anticipate additional subsidy from Cape Cod and Islands Water Protection Fund (25% in previous years)



# Anticipated Project Schedule

## February 2023

- Complete design & permitting

## Spring 2023

- Bid project

## Fall 2023

- Commence construction

## Spring 2025

- Complete construction



# Project contacts

- Project Contact

**Griffin Beaudoin, P.E. at [Griffin.Beaudoin@town.barnstable.ma.us](mailto:Griffin.Beaudoin@town.barnstable.ma.us)**

Town Engineer, Barnstable Department of Public Works

- Receiving public comment

**Comments due by: March 3, 2023**

**Email: Kelly Collopy at [Kelly.Collopy@town.barnstable.ma.us](mailto:Kelly.Collopy@town.barnstable.ma.us)**

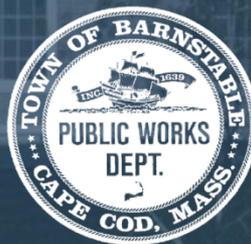
Communications Manager, Barnstable Department of Public Works

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



# Questions or Feedback?



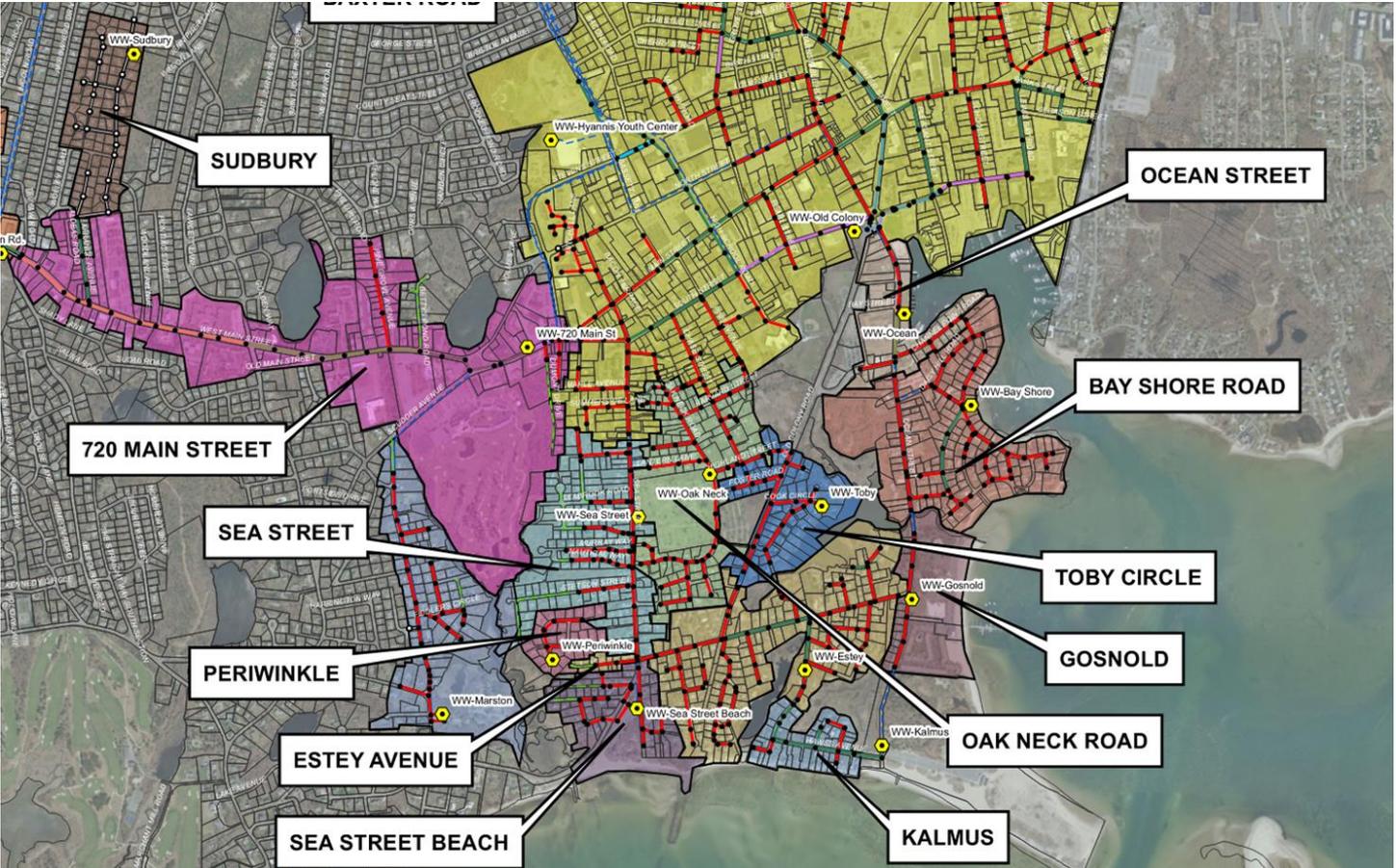
# Resources

# Pump Station Operations

- Staff required to visit the pump station once a day
  - Identifiable in Town pickup truck
  - Visual inspection of all major components
  - Pump station monitored remotely
- Periodic maintenance to service old/failing components
- Generator automatically exercised weekly for 15 minutes
- Odor control system installed to manage odors
- Landscaping is maintained by Town crews

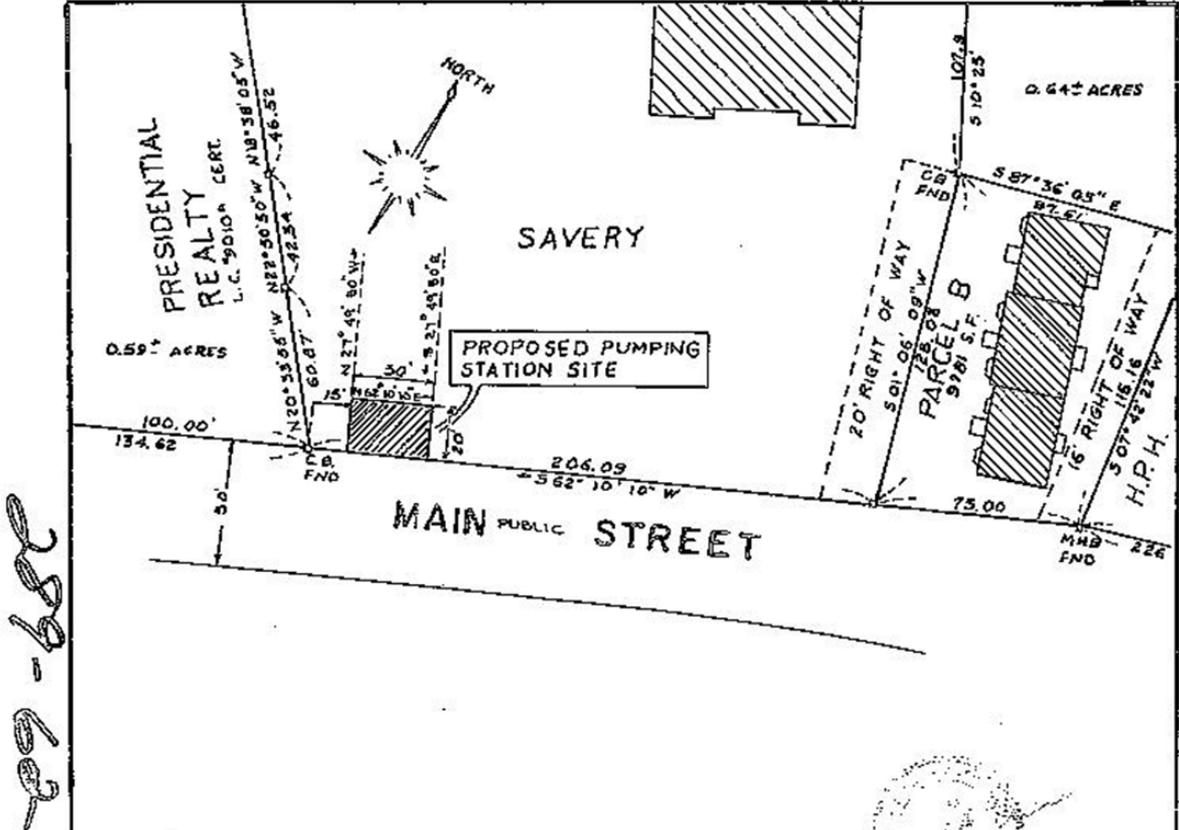


# 720 Main Street Pump Station Service Area



# Existing Pump Station at 720 Main Street

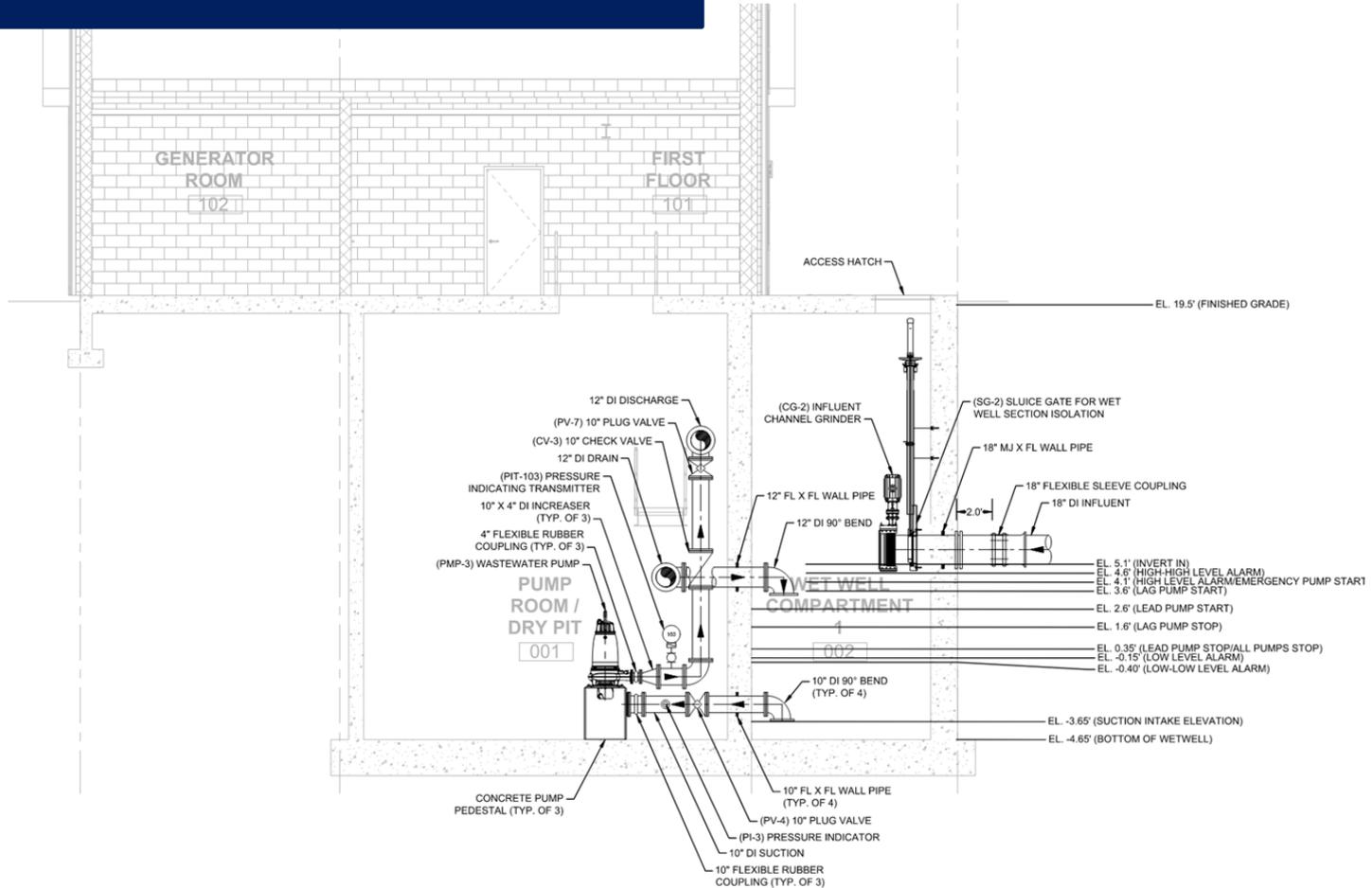
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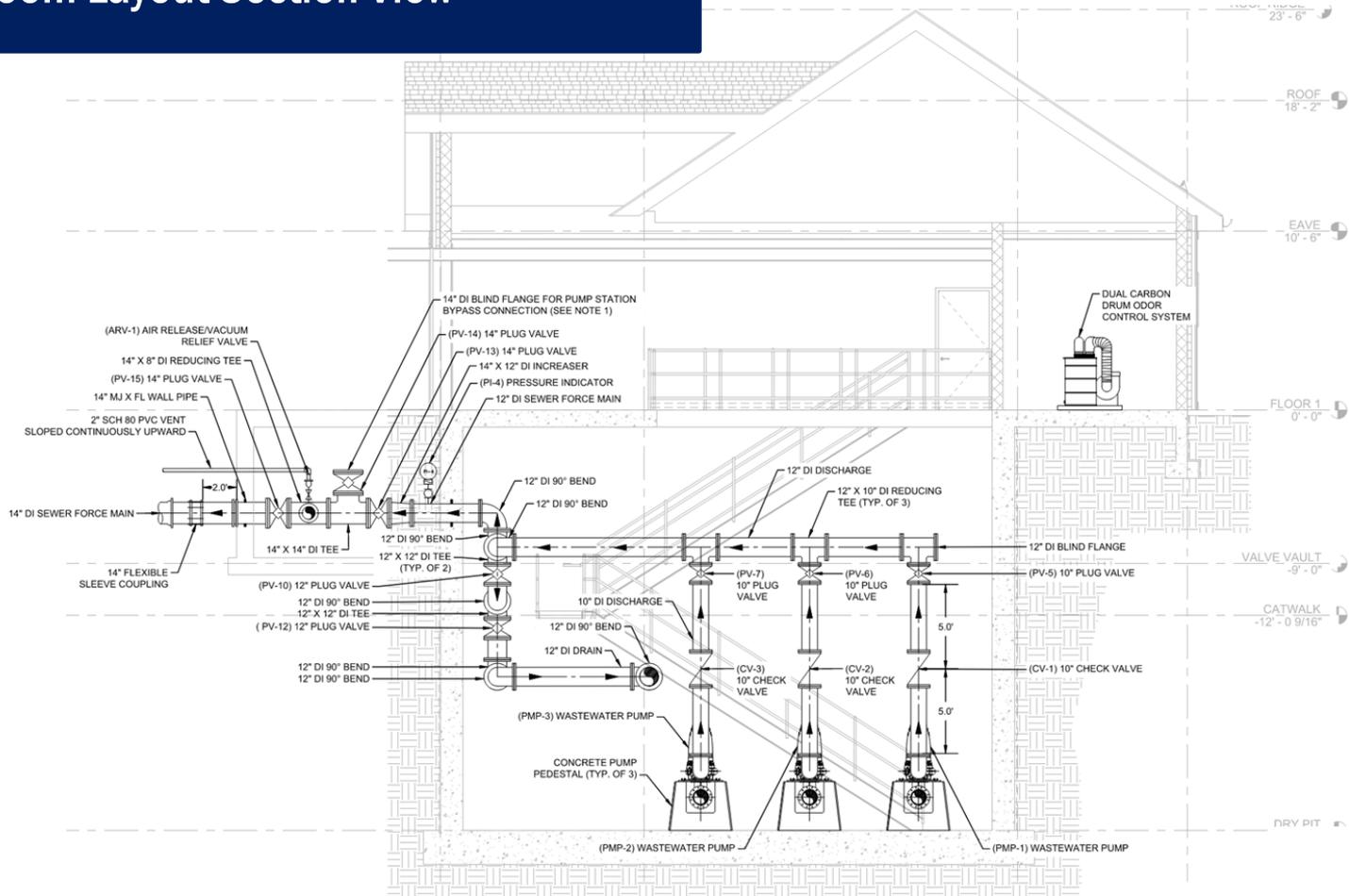
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# Pump Room Layout Section View



# Pump Room Layout Section View



# Current Town of Barnstable Pump Stations



A. Old Colony Road



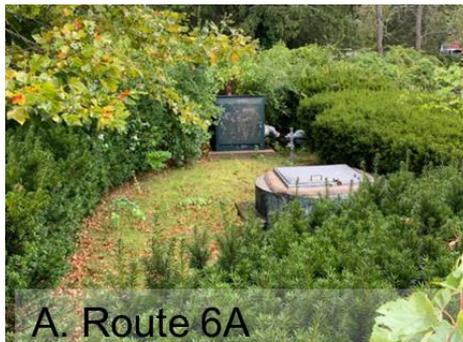
B. Lincoln Road



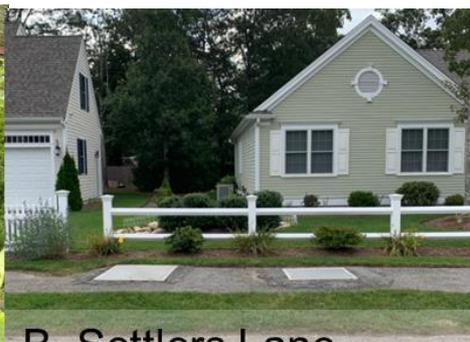
C. Oak Neck Road



D. Gosnold Street



A. Route 6A



B. Settlers Lane

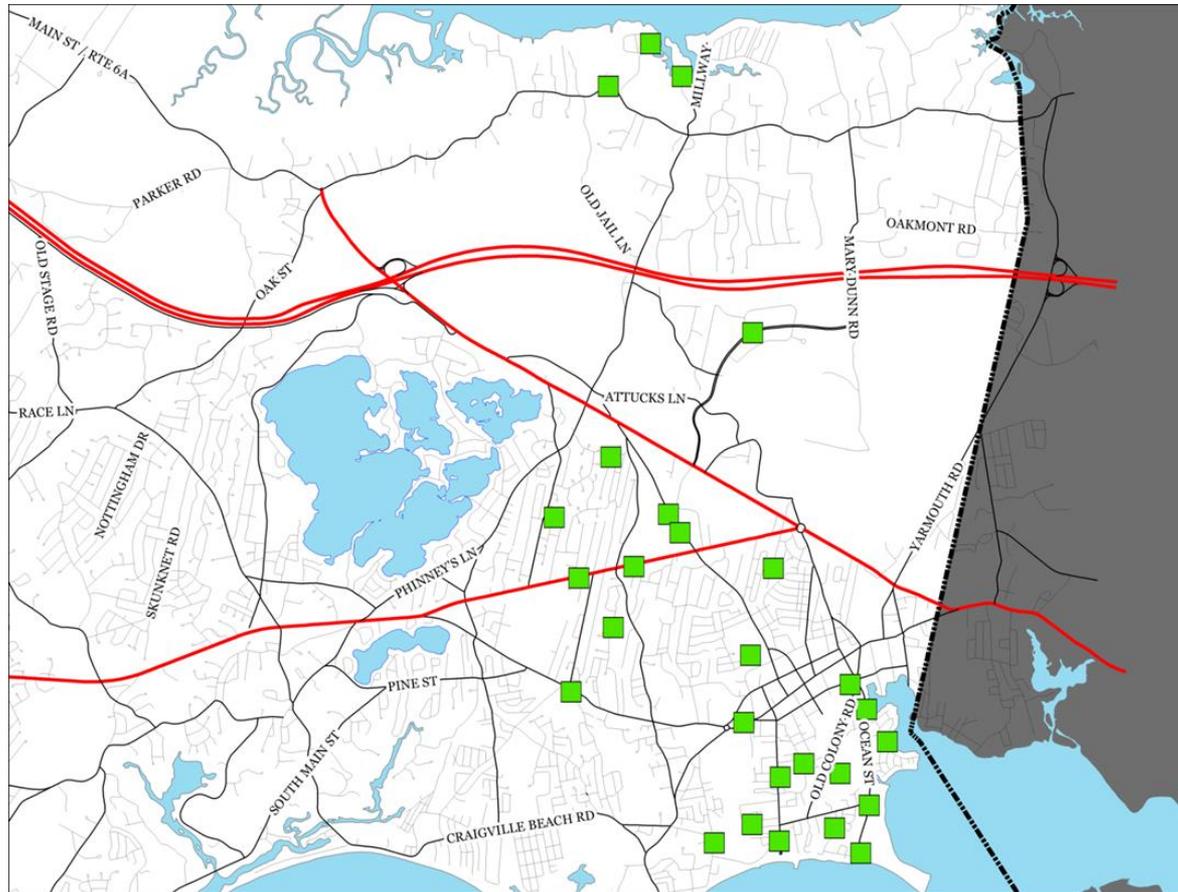


C. Marston Avenue



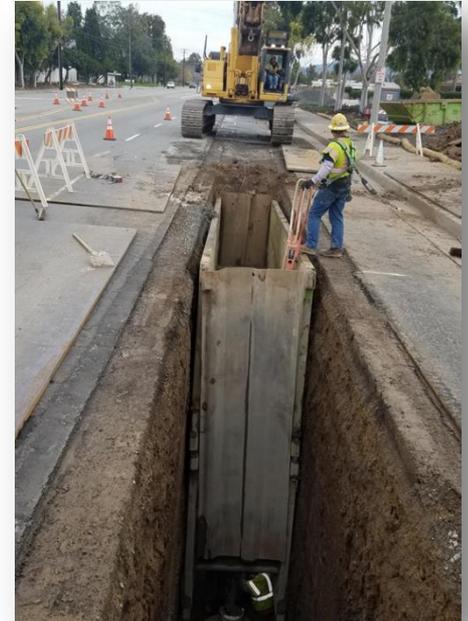
D. Estey Avenue

# Locations of Current Town of Barnstable Pump Stations



# Construction Impacts

- Sewer installation requires deep excavations (up to 25' deep)
- Sewer installation will require some temporary bypass piping and temporary, scheduled, shutdowns
- 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



# South Street Sewers

