

Request to Modify Site Plan Approval Town Garage Site Improvements

2 Dedham Street
Dover, Massachusetts



Planning Board Meeting 01/27/2025

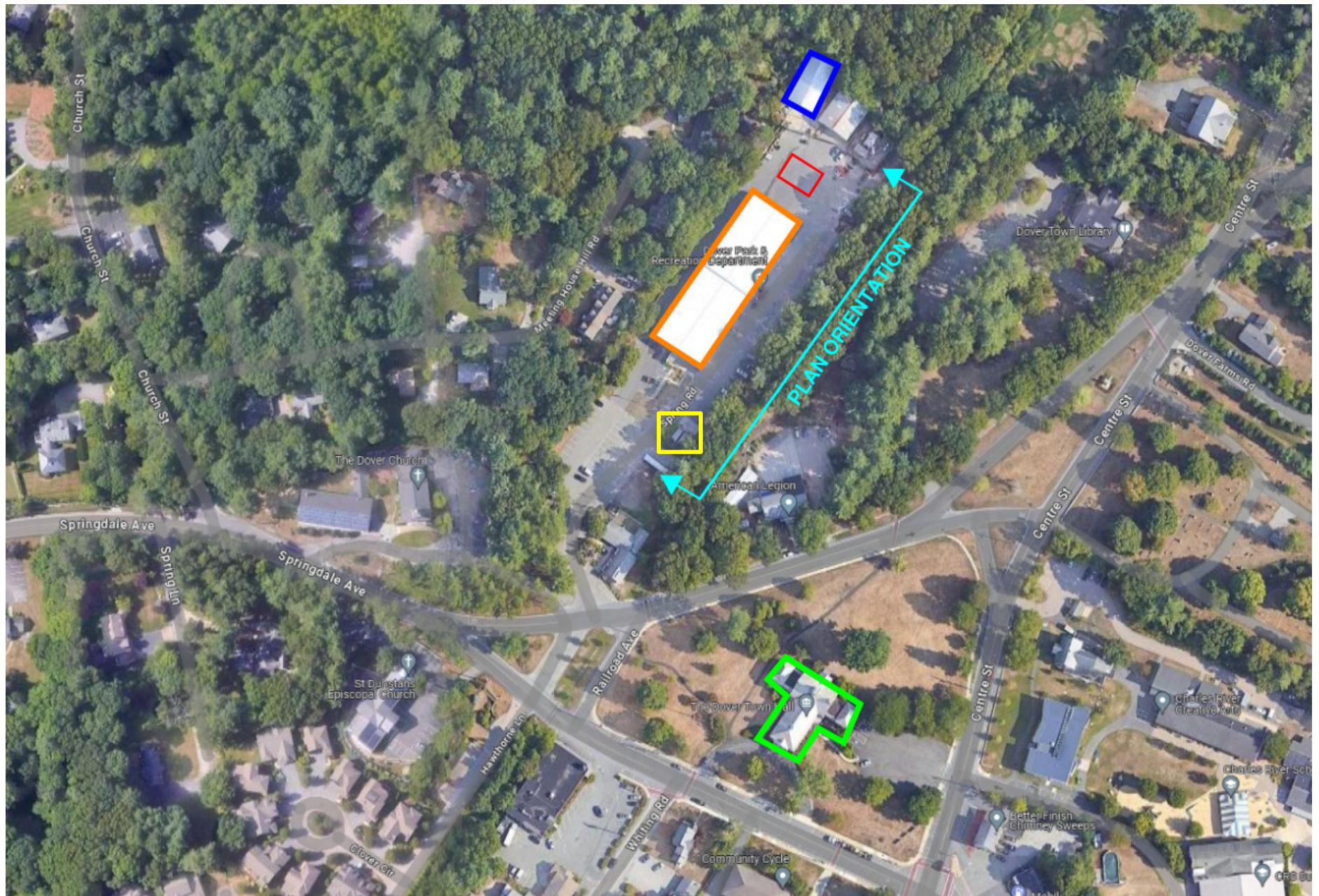




transform your environment

Dover, MA Town Garage Site Improvements

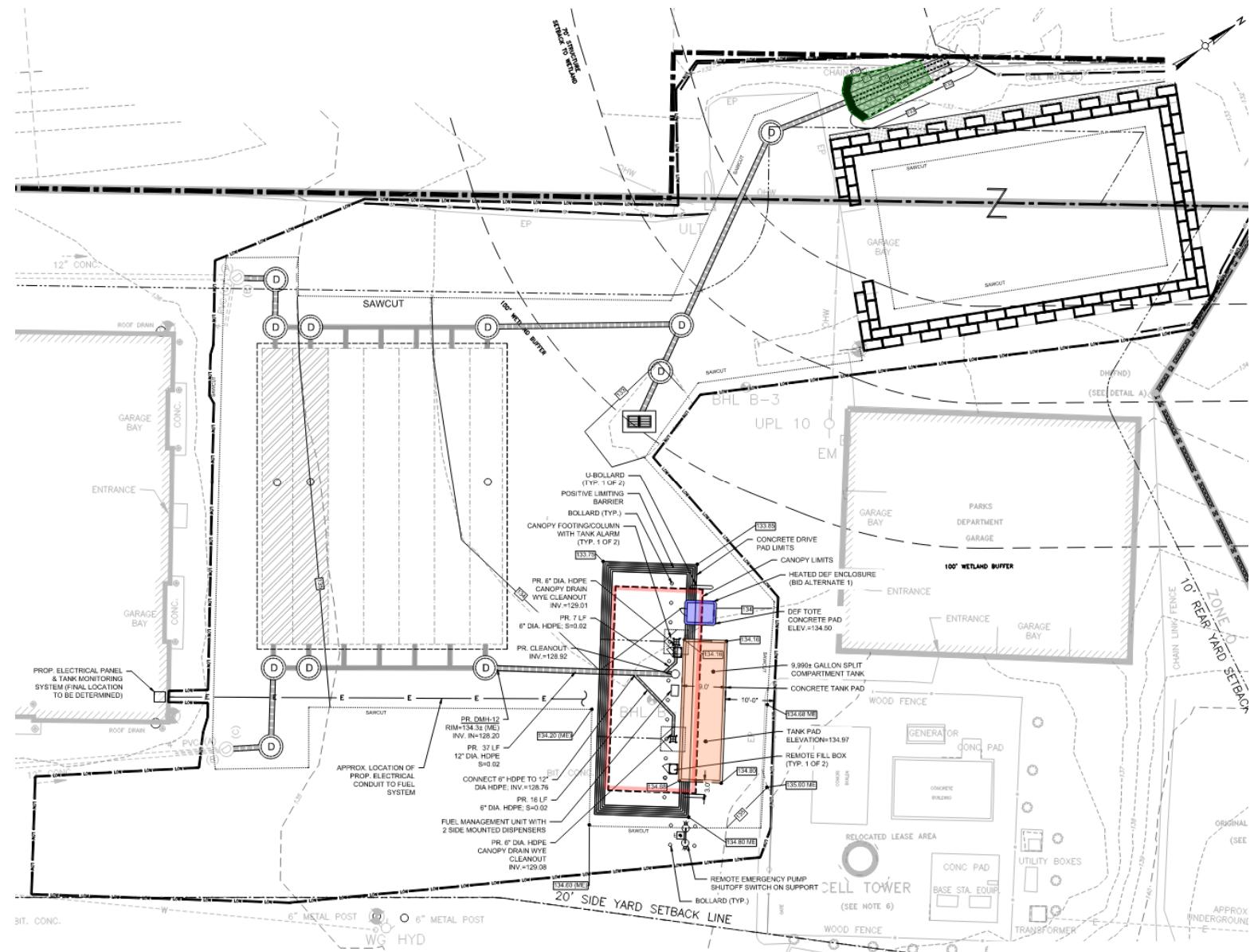
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Dover, MA

Town Garage Site Improvements

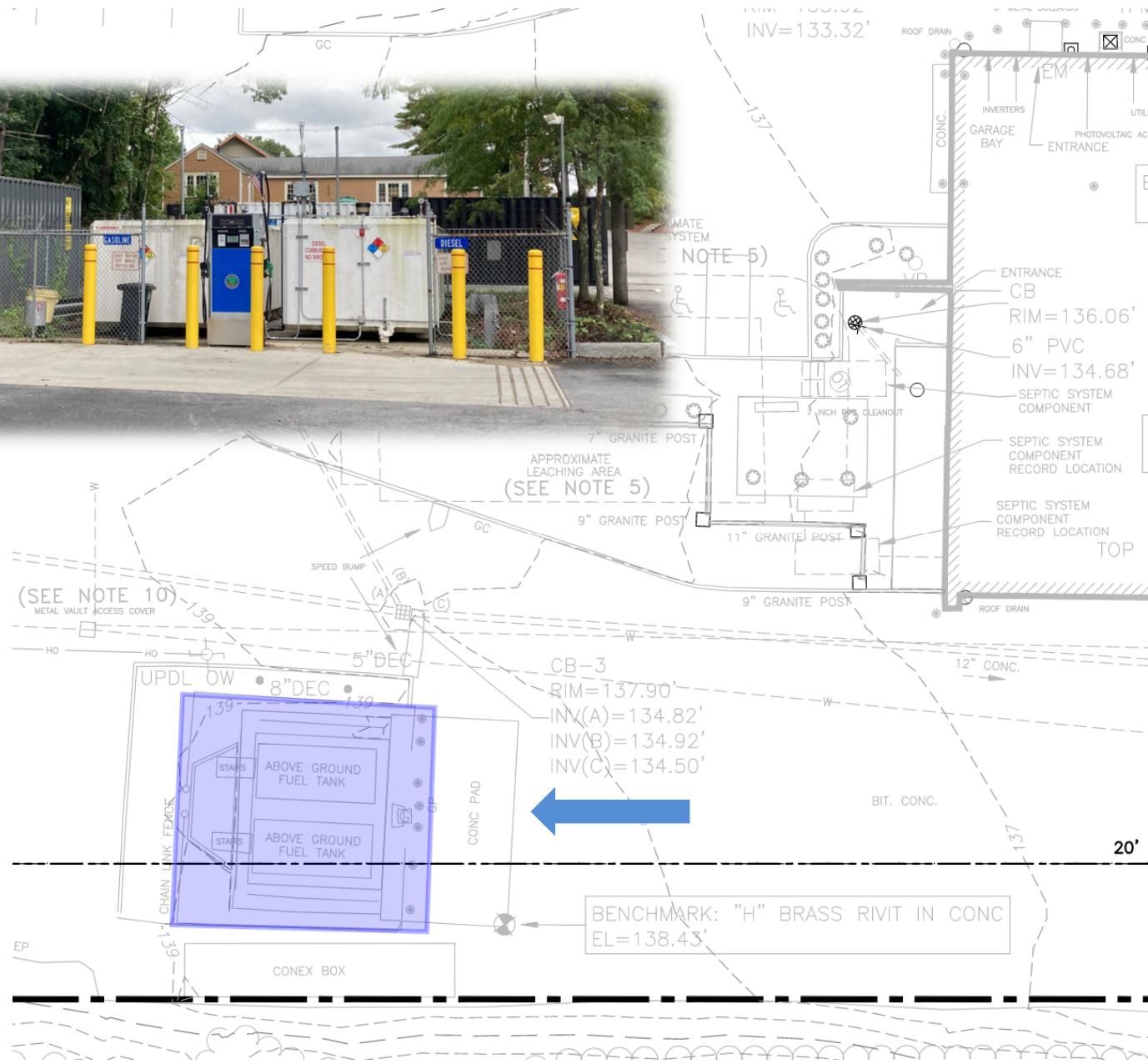
- 9,990± gallon double walled steel split tank (gasoline and diesel fuel)
- Single-side fueling configuration
- Fueling Canopy with storm drainage & recessed lighting
- Concrete fueling pad with bollard protection
- One gasoline/diesel dispenser & fuel management system
- Diesel exhaust fluid tote with heated enclosure and dispenser reel
- Existing fuel system in front of site to be removed after install
- Headwall & riprap apron (requested by Conservation Commission)



Dover, MA

Town Garage Site Improvements

- Removal of existing fuel system located in front near Town Garage Building (remove tanks, piping, chain link fence, bollards)



Dover, MA

Town Garage Site Improvements

SITING ASSESSMENT

- Existing Convault tanks installed in 1994; warranty has expired
- Siting options assessed:
 - **1. Replacing fuel system in-place**
 - Current location requires reverse maneuvers (presents safety risk and fuel delivery challenges). This is mentioned in memos from Fire and Police Chiefs.
 - Interruption to on-site fueling operations, added cost associated with temporary fueling solution.
 - Tanks are currently located within AT&T easement and property line structure setback.
 - **2. Front of building**
 - Would block vehicular access to one side of building, require septic system removal, or removal of several parking spaces.
 - **3. Area south of existing fuel tanks**
 - DPW material and equipment storage area. Relocating here would reduce operational efficiency.
 - Area is not paved; adding impervious would exacerbate flooding issues. DPW aims to limit new impervious in accordance with SW BMPs.

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Town Garage Site Improvements
SITING ASSESSMENT

- **3. Area south of existing fuel tanks (continued)**
 - 4% slope → presents pad installation and fueling operation challenges
 - Would require additional geotechnical & environmental exploration
- **4. Rear of site (selected option)**
 - Conforms to zoning and dimensional requirements
 - Already incorporated Conservation Commission feedback to their satisfaction
 - Best option for vehicular access and circulation
 - Rear location keeps critical infrastructure away from public facing location
 - Grades are more forgiving, less steep
 - NFPA requires tanks to be offset 15' from other buildings (20'+ offset is proposed)

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Town Garage Site Improvements
SAFETY MEASURES

TANK DESIGN

UL2085 Rating (Protected Aboveground Tank)

- **Fire Test**
 - 2000-degree furnace to simulated pool fire for 2 hours:
- **Stream Hose Test**
 - Shows tank wont rupture during a fire event when sprayed with water
- **Impacted Test**
 - 12,000 Lbs. object traveling at 10mph
- **Ballistics test**
 - 5 times 100ft away with a .308 caliber rifle. Bullet cannot pierce inner tank.



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SAFETY MEASURES

Vapors & Emissions

- **Stage I Vapor Recovery System:** returns vapors to fuel delivery truck
- **Certified Pressure/Vacuum Vent Caps:** prevent vapors from escaping tanks, venting allowed only when tank depressurizes
- **Onboard refueling vapor recovery in vehicles:** starting in 1998, vehicles began incorporating this to capture vapor during refueling



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SAFETY MEASURES

Additional Safety Measures

- Continuous electronic leak monitoring system
- Overfill prevention valves
- audible/visual high-level
- In-line leak detection
- 10-gallon remote fill box to contain minor spills
- Camlock poppetted fill port
- Dispenser hoses with shear valves
- Dispensers' emergency shear valves
- Expansion relief valves
- Anti-Siphoning Valve
- A fuel management
- Catch basin mat used during tank fuel deliveries
- Fire extinguishers
- Amenable to add fixed fire suppression



Thank you.

