

Town of Ashland

Howe Street Landfill Site Plan Review Meeting

February 11, 2016
Planning Board



770 kW, Waltham HS,
Massachusetts



1.5MW, Sudbury Landfill



1.6 MW, Acton Landfill



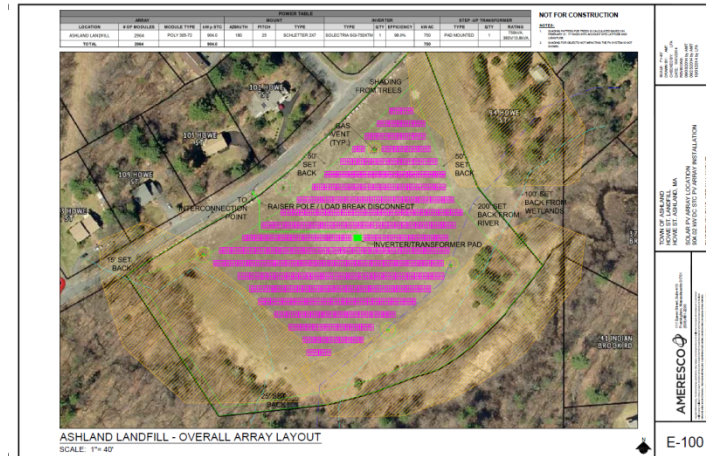
184kW, Carport, Natick

Project Overview

- PPA Executed: Howe St Landfill, Ashland Middle School and Ashland High School
- Electricity Purchase Price: \$0.1017/kWh, 1% annual Escalation
- Net Metering Credit Value: \$0.2169/kWh
- First Year Benefit to the Town: \$246,116 (Electric savings and Tax Payment)
- PB Requirements Price Adder: \$0.002/kWh per \$50,000 of added cost above budget of \$20,000

Howe Street Landfill: 904.0 kW_DC

- Benefit to the Town of Ashland
 - \$117,805 in First Year Electricity Savings
 - \$12,452 in Annual Tax Revenue
- Design Details
 - Non-penetrating ballasted ground mount
 - Minimum 50' set back from parcel boundary
 - Centrally located transformer
 - Interconnected to three phase wire on Howe Street



Site Plan Review Requirements Overview

- Compliance with all Laws, Bylaws, and Regulations (8.3.5)
 - Building Permit, Inspection, Fee
- Stormwater Management Permit (Bylaws Chapters 247 & 343)
 - Any activity subject to SPR requires a SMP
- Solar O&M Plan (8.3.6.4)
- Property setbacks (8.3.7)
 - Residential District: 50' all sides
- Design Standards (8.3.8)
 - Lighting, Signage, Utility Connections
- Safety and Environmental Standards (8.3.9)
 - Coordination with Fire Chief and local emergency services
 - Minimize land clearing
 - Landscape Architectural Plan: 8' high vegetative screening
- Abandonment/Decommissioning (8.3.11)
 - Financial Surety
- Site and Design Plans (9.4.4)
 - Traffic, water, landscaping

Input from Planning Board Members

Goals of Planning Board:


- Minimize impact on the neighborhood
- Maintain integrity of the street as a scenic corridor with a screening solution that maintains the open feeling of the road
- Minimize view shed of overhead wires
- Maintain plantings for term of the contract (20 years)

Suggested Screening Characteristics

- Install naturalistic berm screening views of the solar array along Howe St
- Plant native and varied tree species on the Howe St berm
- Install fencing on array side of the berm
- Provide screening measure for Indian Brook Rd residences
- Maintain vegetation and replace dead trees with a maintenance plan

Viewshed Analysis & Mitigation Design Process

 GENERAL SOLAR FIELD VIEWSHED

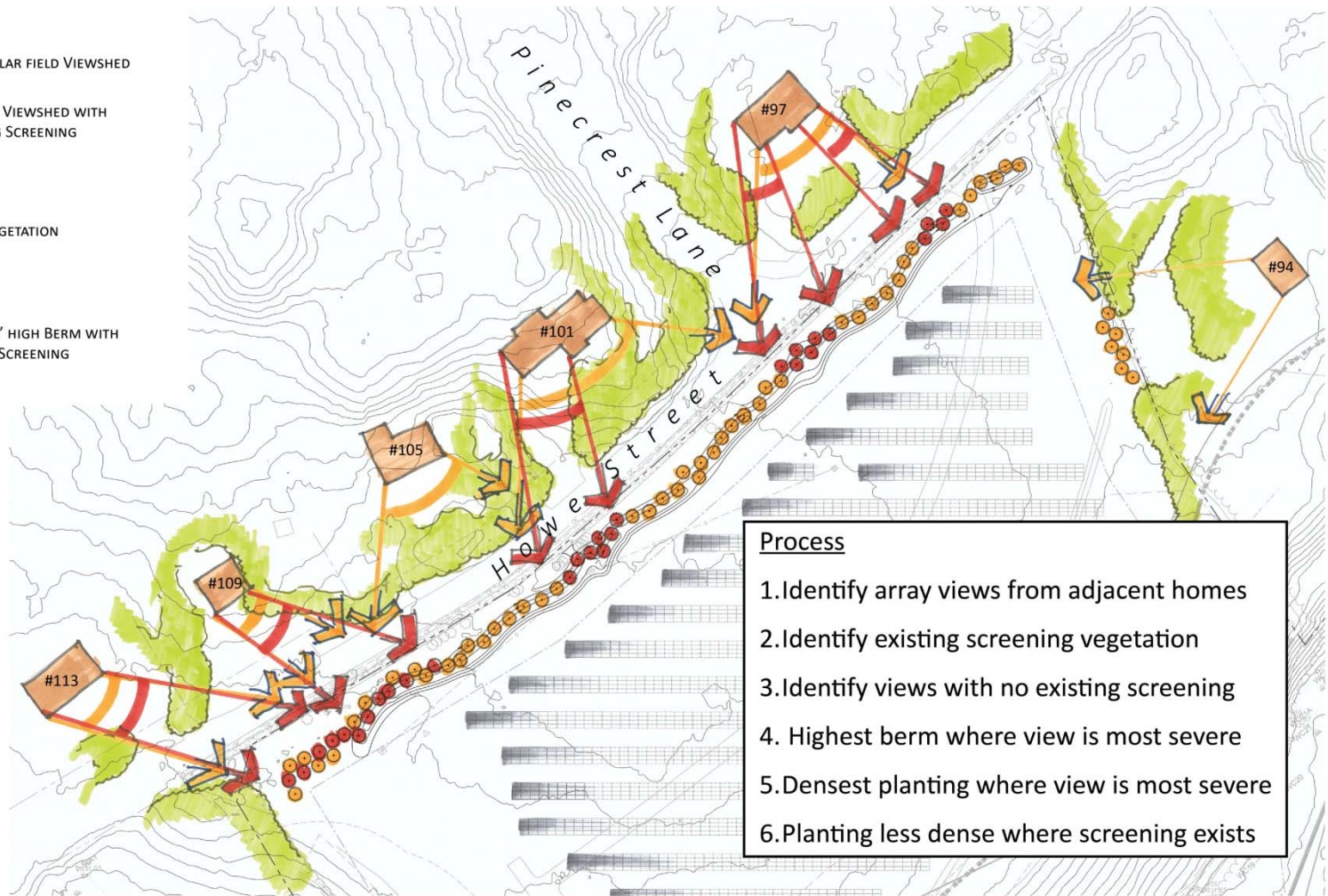
 SOLAR FIELD VIEWSHED WITH NO EXISTING SCREENING



EXISTING VEGETATION



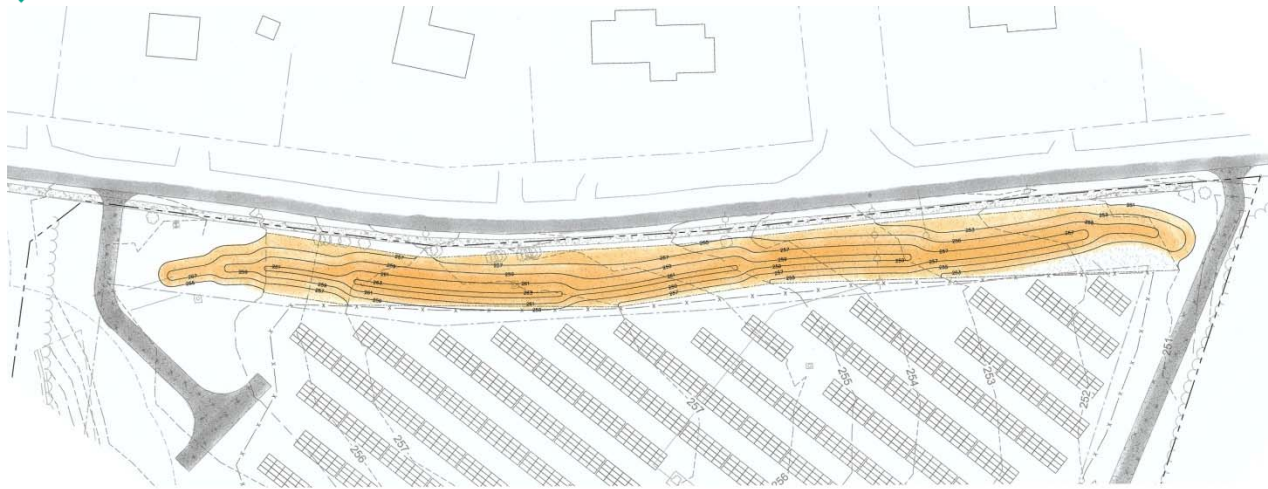
PROPOSED 6' HIGH BERM WITH VEGETATIVE SCREENING



- Process
1. Identify array views from adjacent homes
 2. Identify existing screening vegetation
 3. Identify views with no existing screening
 4. Highest berm where view is most severe
 5. Densest planting where view is most severe
 6. Planting less dense where screening exists

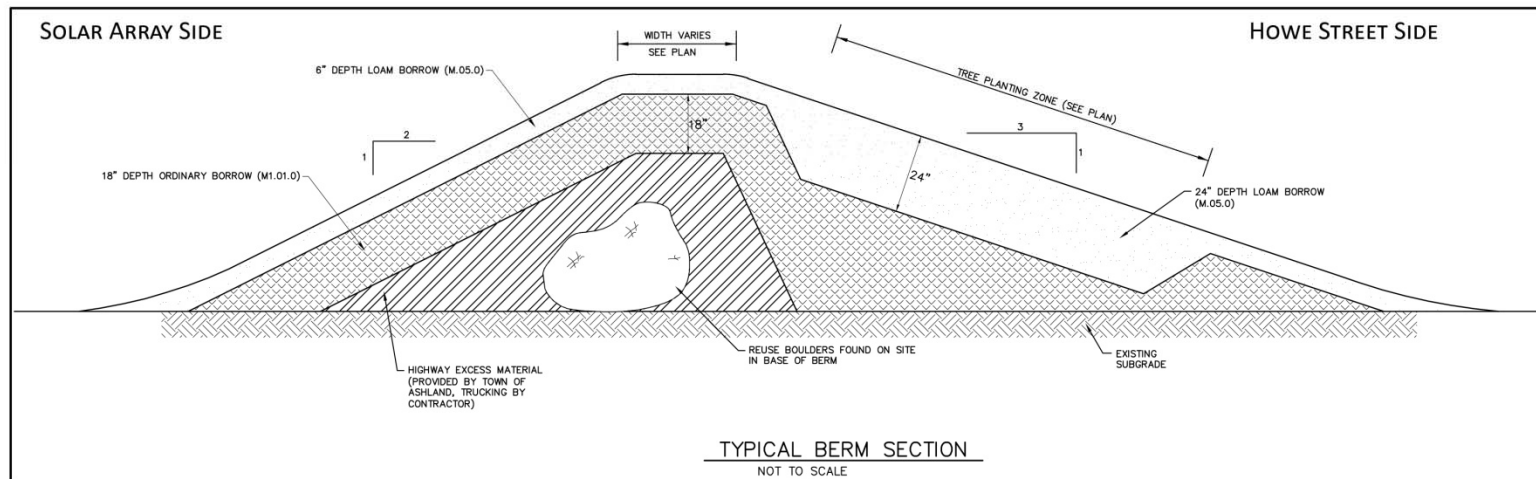


Landscape Berm Design



Grading Design Principles

- Berm 6' high above existing grade
- Reuse boulders found on site
- Highway excess material provided by Town of Ashland
- 3:1 slope on Howe Street side
- 2:1 slope on solar array side
- Berm length ~670'
- Sweeping curves for more naturalistic appearance
- Berm height varies based on existing grade for more naturalistic appearance



Planting Concept & Plant Selection



Planting Design Principles

- Multiple evergreen and deciduous species for visual interest and naturalistic variation
- All trees 6 - 8' at initial planting
- Trees clumped and distributed for naturalistic variation
- Evergreen species placed to maximize screening
- Deciduous species for color and seasonal visual interest

Evergreen Species:



Fraser Fir
(*Abies fraseri*)



Eastern White Pine
(*Pinus strobus*)



White Spruce
(*Picea glauca*)

Deciduous Species:



Pin Oak
(*Quercus palustris*)



Paper Birch
(*Betula papyrifera*)



October Glory
Swamp Maple
(*Acer rubrum*
'October Glory')

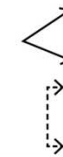
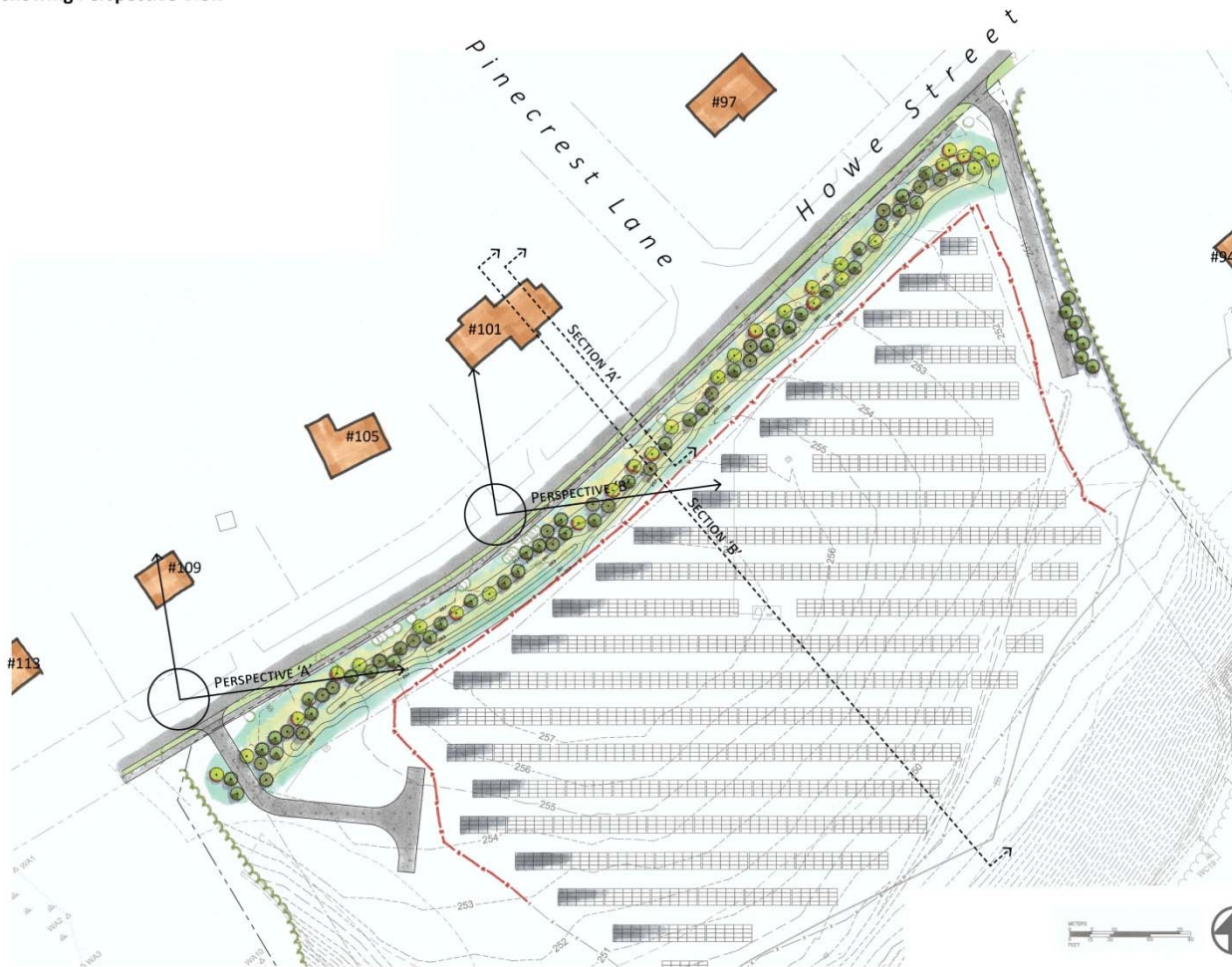
Groundcover:



New England Wildflower
Meadow

#101 Howe Street Section: 10-Year Projected Tree Growth

Plan showing Perspective View

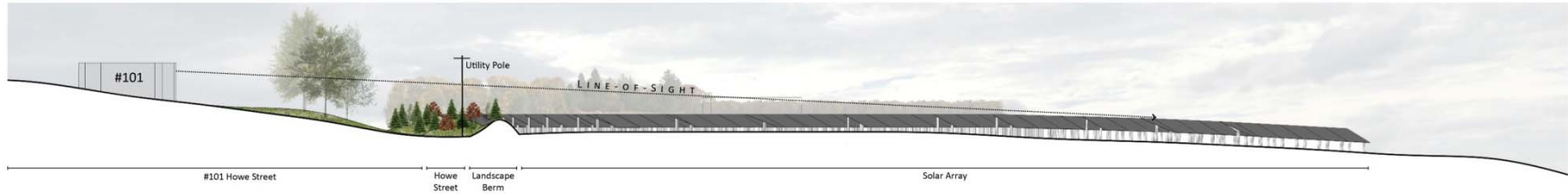


PROPOSED PERSPECTIVE VIEW

PROPOSED SECTION VIEW

#101 Howe Street Section: 10-Year Projected Tree Growth

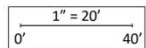
Initial Planting (vegetation ~ 6-8' tall)



5 Years (vegetation ~ 12-14' tall)



10 Years (vegetation ~ 18-20' tall)

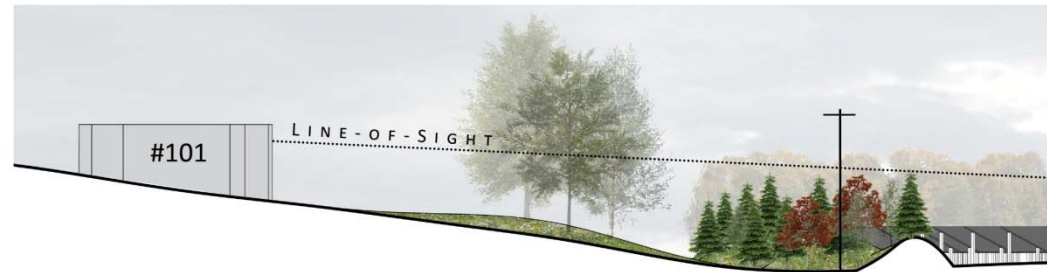


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Experience: View NE along Howe Street near #101



Experience: View NE along Howe Street near #101



Experience: View NE along Howe Street near #101



Experience: View NE along Howe Street near #101



Experience: View NE along Howe Street near #109



Experience: View NE along Howe Street near #109



Experience: View NE along Howe Street near #109



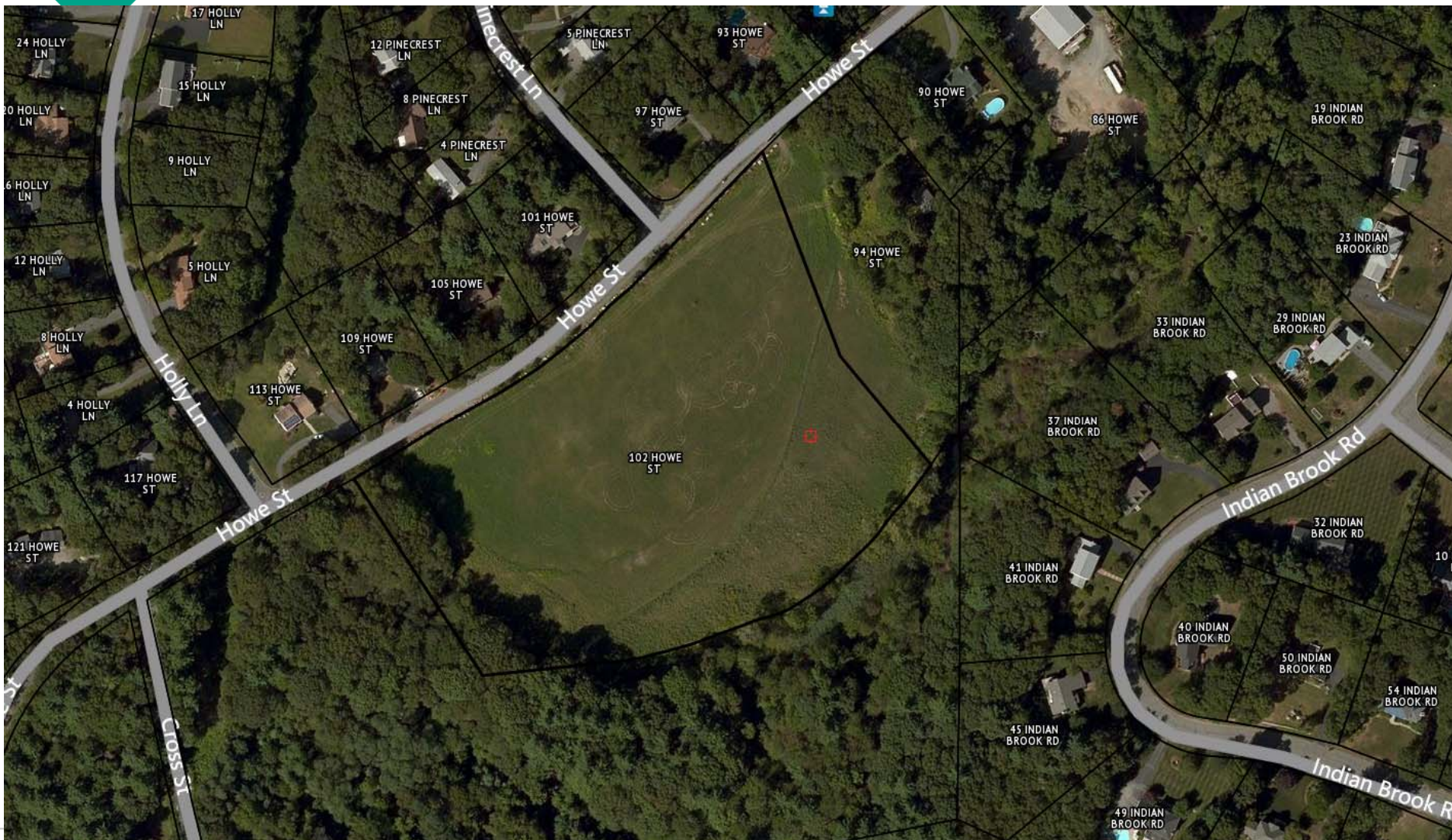
Experience: View NE along Howe Street near #109



Maintenance Program

- Annual fertilization, pruning, and liming
- Mulching to conserve moisture
- Periodic water for initial plant establishment
- Weeding and edging
- Provide replacement trees and shrubs, as needed
- Pest and disease control, with use of pesticides, herbicides and fungicides sparingly

Aerial Image of Howe St Landfill



Current Indian Brook Viewshed



Fencing Options for Indian Brook Viewshed



- Cedar Fence of Similar
 - 7' Tall Ballasted
 - Fencing will screen views of the solar array from Indian Brook Road residences
 - Extra cost increases PPA price
- Black Vinyl Coated Chain Link Fence
 - 7' Tall Ballasted

Design Objectives Met for Screening

- Berm: Installation of 6' berm along the entire frontage of Howe St
- Native Plantings: White spruce, fraser fir, eastern white pine, October glory swamp maple, pin oak, paper birch, and New England wildflower mix planting
- Comprehensive Maintenance Plan
- Solid 7' high cedar fencing will screen views from Indian Brook Rd residences
- Utility poles will carry wire perpendicular to Howe St towards the array in line with one another

Next Steps

- Planning Board Site Plan Approval
- DEP Post Closure Use Permit (submitted January 2016, expected March 2016)
- Ashland Con Comm Storm Water Permit (February 2016)
- File for Net Metering Cap Allocation and SREC Assurance of Qualifications
- Procure Equipment (April 2016)
- Commence Construction (Spring 2016)