



Bioengineering GROUP

Building Sustainable Communities
on an Ecological Foundation

Black's Nook Site Improvements

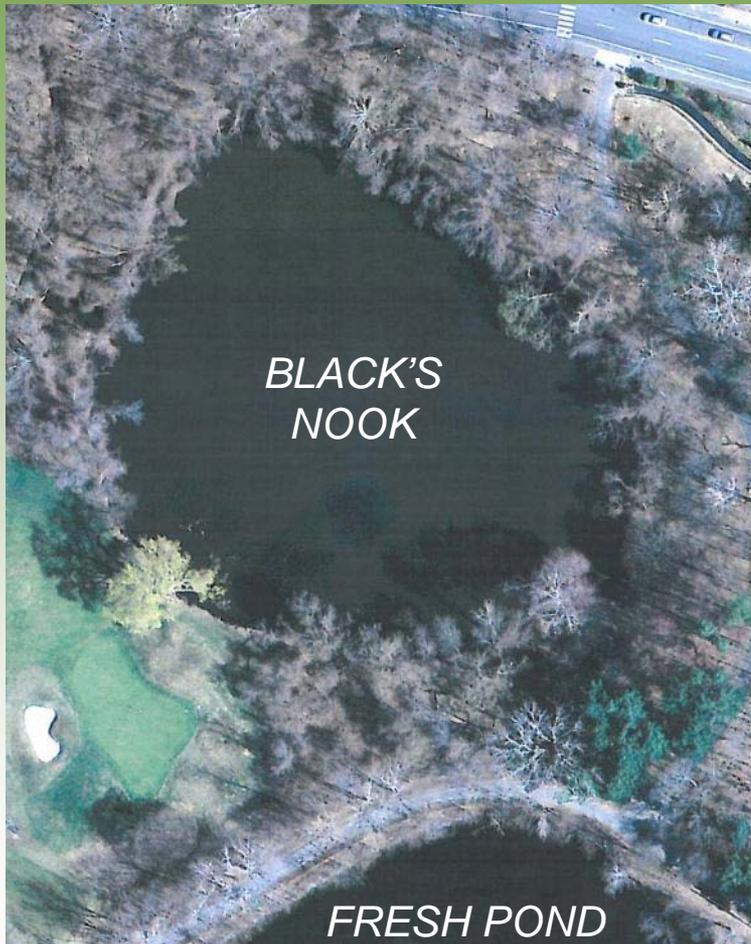
Fresh Pond Reservation

Cambridge, MA

Agenda

- Introductions (Chip Norton, Watershed Manager)
- Project Overview
- Visioning Session and Stakeholder Goals
- Concept Plans
- Schematic Design – Early Alternatives
- Schematic Design - Proposed path, platforms and restoration strategies
- Volunteer Opportunities
- Next Steps

Project Overview – Meetings and Milestones



- February 26, 2009 – Kickoff Meeting
- March 5, 2009 – Visioning Session
- March 31, 2009 – Stakeholder Meeting
- May 11, 2009 – Stakeholder Meeting: on-site walk-through
- September 17, 2009 – Stakeholder Meeting
- September 24, 2009 – Fresh Pond Advisory Board

Visioning Session

Summary of Stakeholder Goals

- Provide sense of wonder and discovery
- Maintain area as a resource /study area for children
- Provide for universal accessibility
- Respect active golf course users and passive Black's Nook users
- Preserve sense of wildness, untamed nature
- Minimize user conflicts with off leash dogs
- Unify and blend improvements with existing elements
- Maintain woodland retreat identity
- Evaluate entrance from Concord Street for appropriateness (scale, character, buffer)

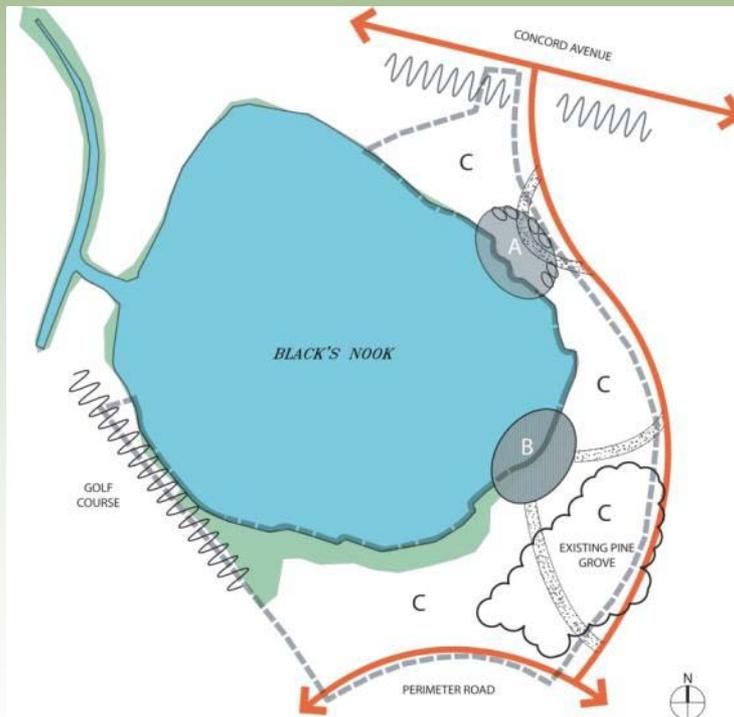
Concept Plans

Guiding Principals:

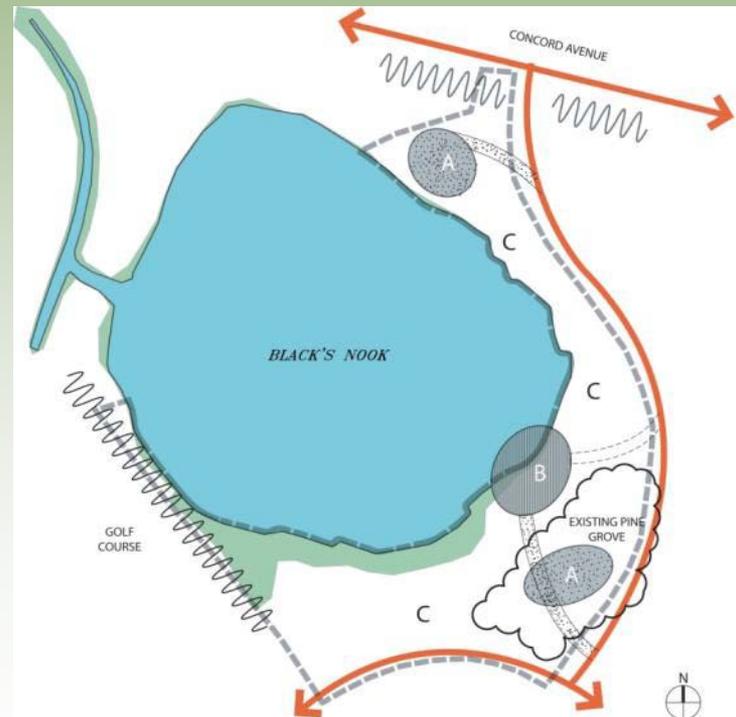
Location of spaces on or near the water.

Live lightly on the land.

Scheme 1

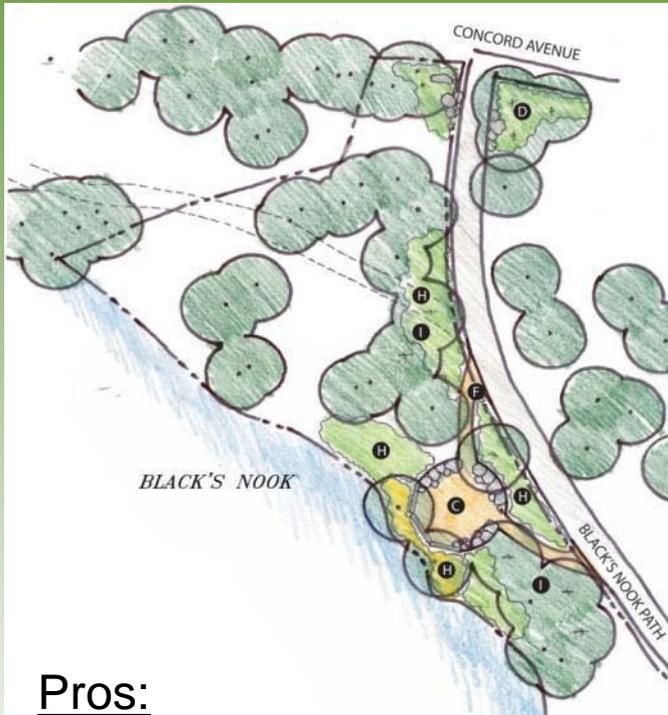


Scheme 2



Early Alternatives – Scheme 1

Northern Access



Southern Access



Pros:

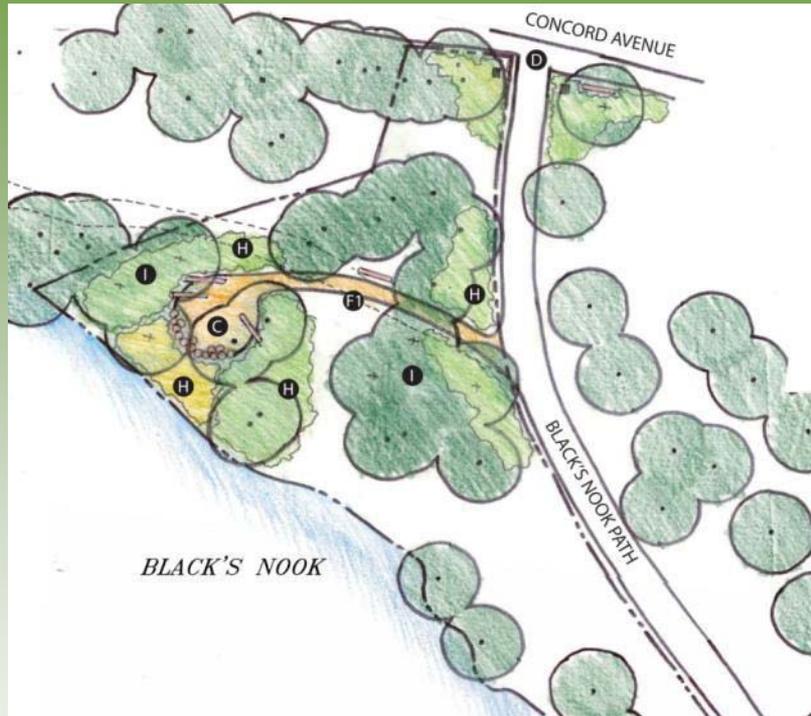
- Organic deck shape over water
- Short path to reach deck from Connector Path
- Planting buffers to block views from Connector Path

Cons:

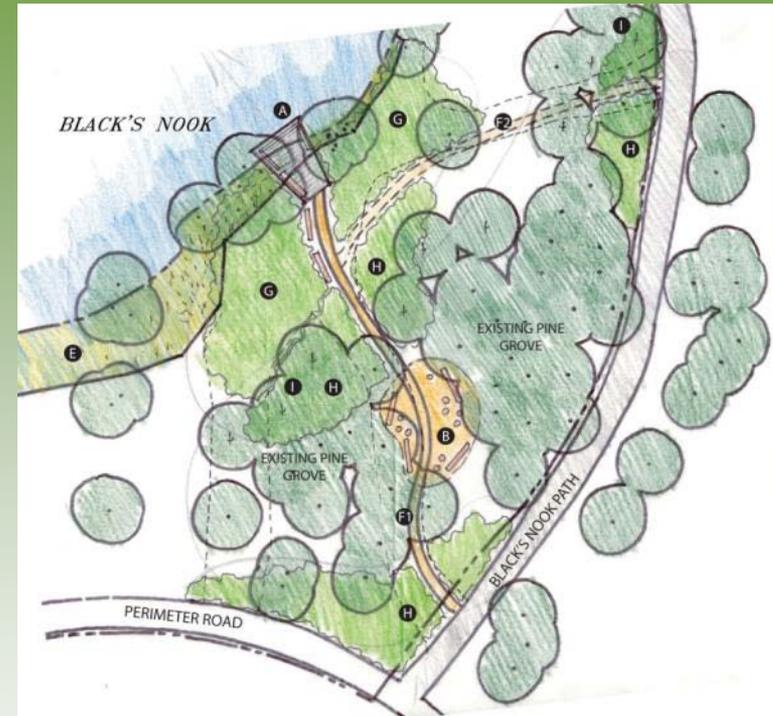
- Too noisy for gathering spaces close to Concord Ave
- No need for programmed gathering spaces
- Black's Nook Pond area is a gathering space

Early Alternatives – Scheme 2

Northern Access



Southern Access



Pros:

- Design reinvigorates space
- Pine grove “room” a nice alternative
- Design creates a contemplative place (currently active place)

Cons:

- Loop path should be smaller
- Increased paths may increase dog use

Stakeholder Comments

Black's Nook as an Outdoor Classroom:

- Maximize opportunities for discovery (meandering paths, hidden platforms)
- Minimize travel time (shorten path length)
- Reduce dog traffic and use (move access point away from the Perimeter Road)
- Designate gathering area for up to 20 students
- Provide 2 smaller observation platforms with access to collect water samples
- Maintain ability to coexist with passive recreationists (i.e. birders and walkers)

Stakeholder Comments (contd.)

Black's Nook as a Restored Landscape:

- Minimize impacts to existing shoreline vegetation, including path relocation/removal
- Favor degraded areas when placing design features
- Propose native canopy trees along shoreline to promote shading and stabilization
- Choose native plants best suited to hydrology and soils
- Consider historic landscape planting strategies
- Utilize shading shading to minimize algal blooms

Stakeholder Comments (contd.)

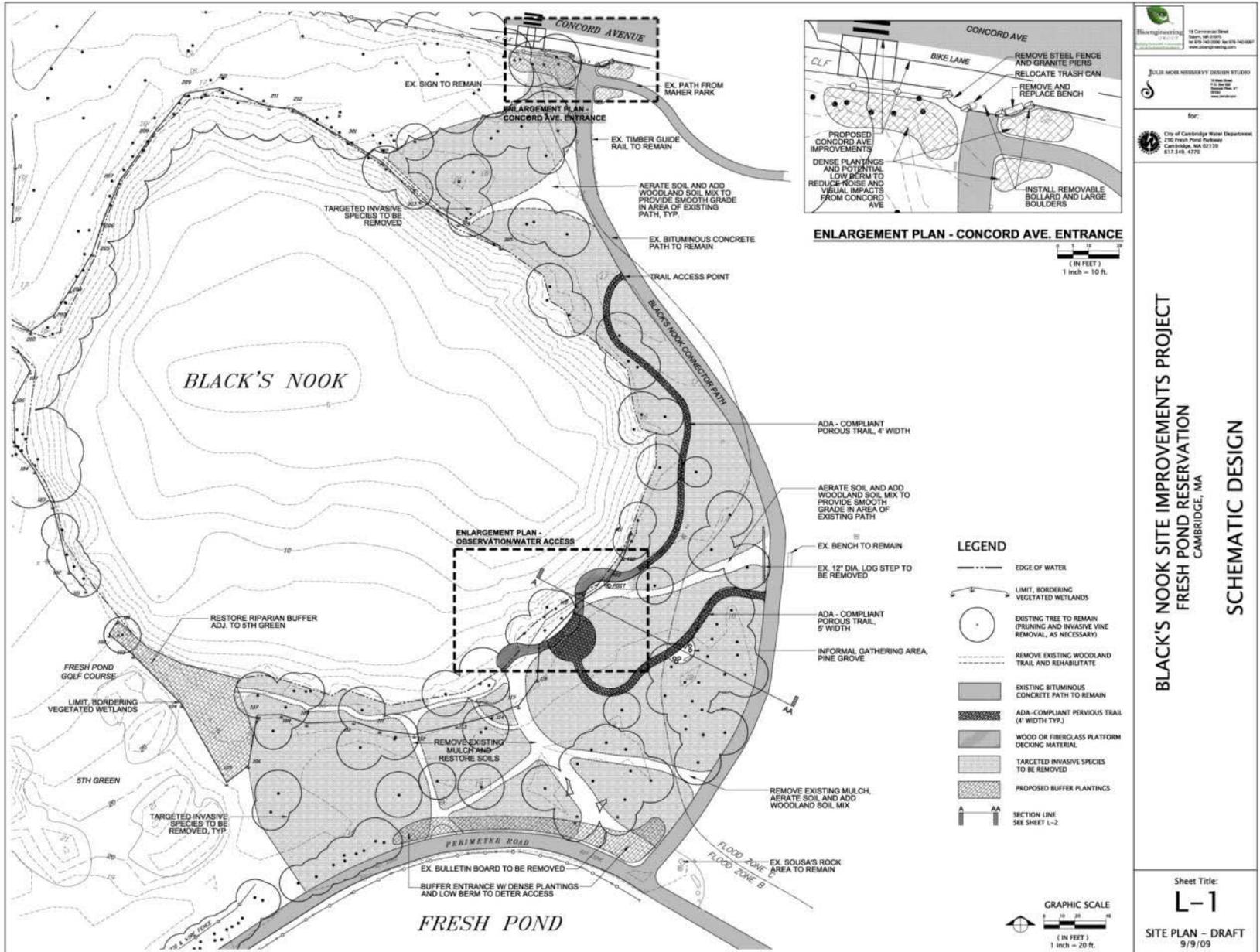
Path and Platform Materials:

- “Quiet” Material (visual and audible)
- Pervious
- Non-toxic
- ADA - Compliant

General:

- Reduce path length, to greatest extent possible
- Buffer Concord Ave (visual & noise)
- Minimize perception of built environment
- Minimize views to golf course

Proposed Site Plan



Blawie Engineering
10 Cambridge Street
Cambridge, MA 02142
www.blawie.com

JULIE MOER-MISSISSY'S DESIGN STUDIO
100 North Street
Cambridge, MA 02142
www.juliemoer.com

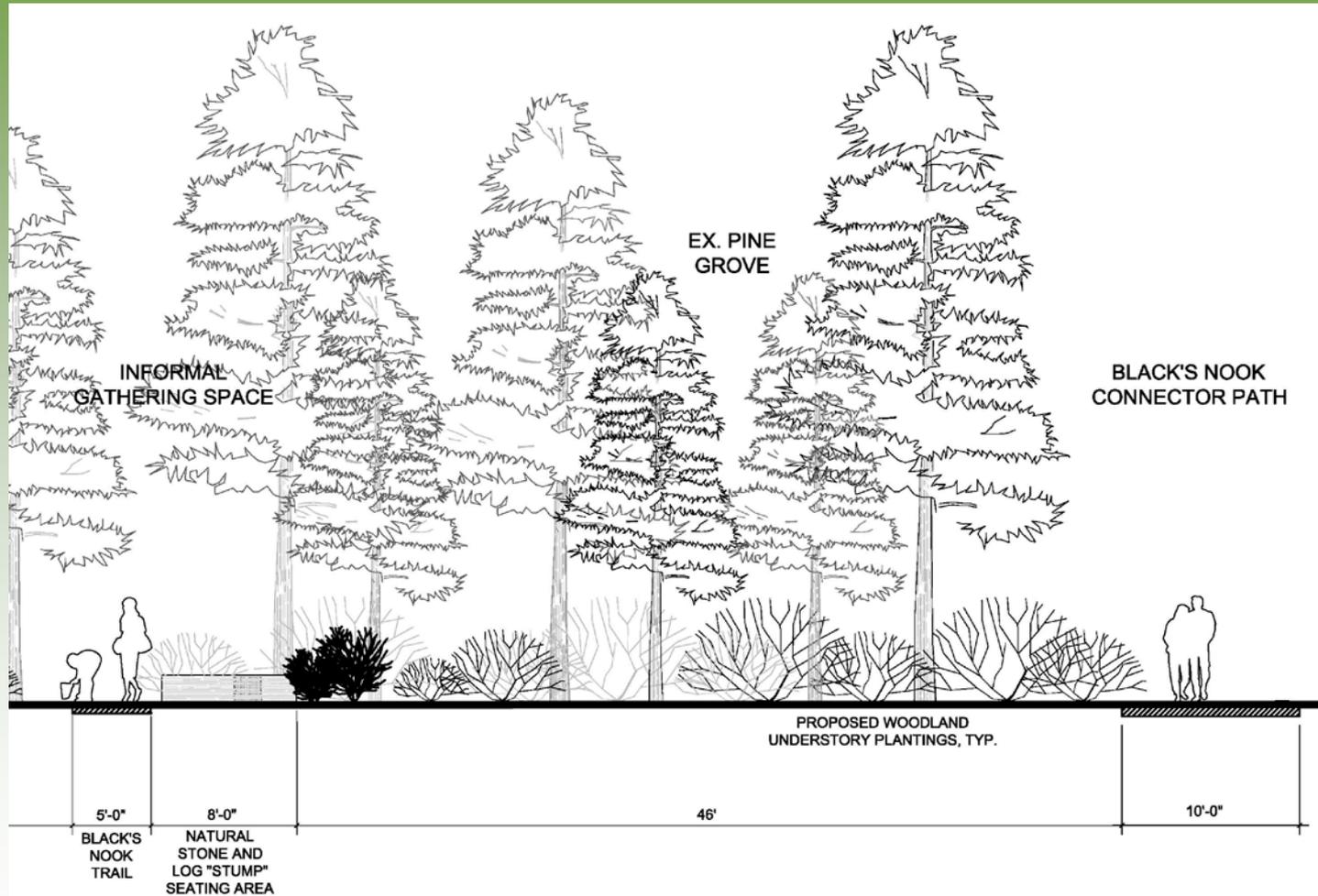
for:
City of Cambridge Water Department
250 French Pond Parkway
Cambridge, MA 02139
617 348 4770

BLACK'S NOOK SITE IMPROVEMENTS PROJECT
FRESH POND RESERVATION
CAMBRIDGE, MA

SCHEMATIC DESIGN

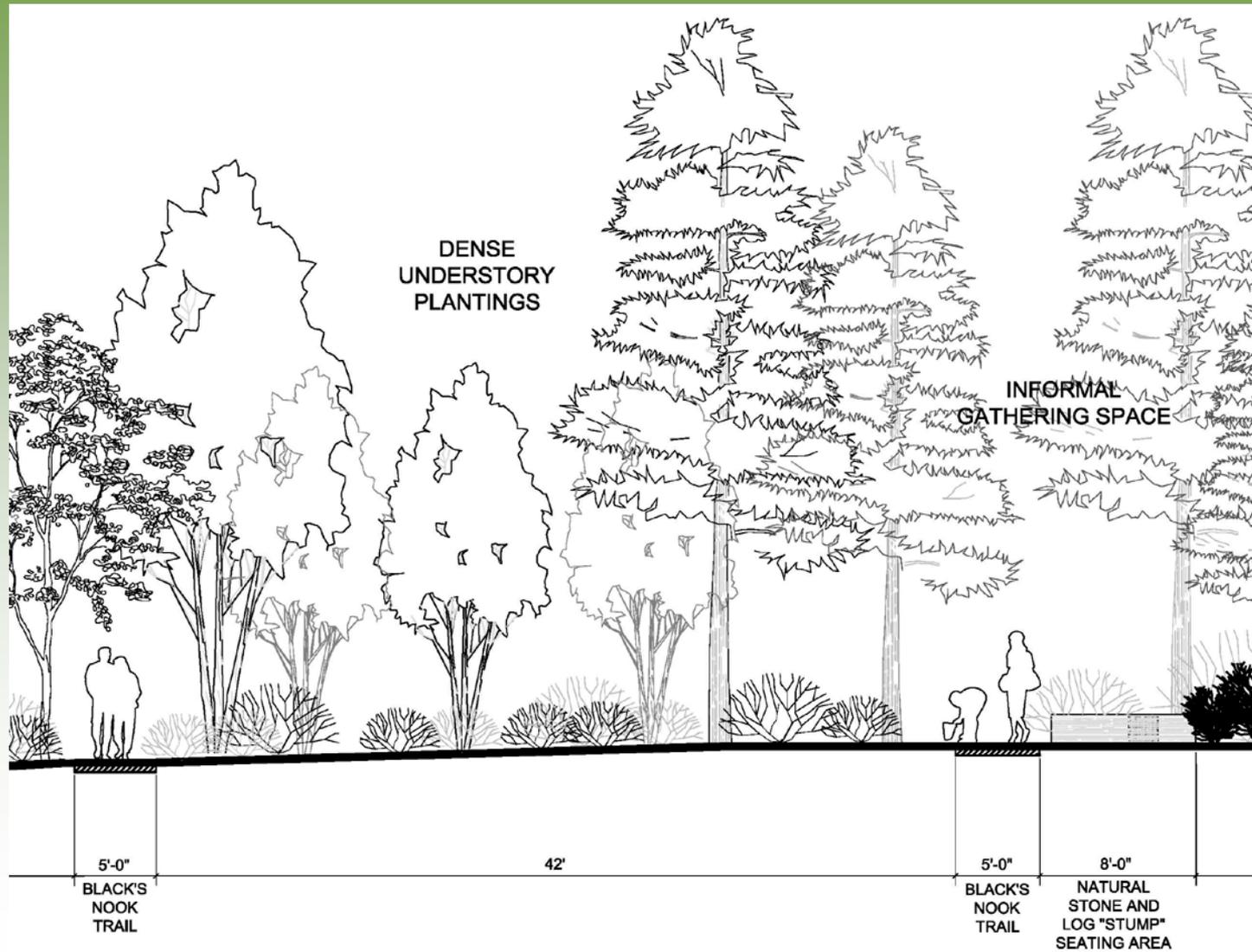
Proposed Site Sections

Connector Path to Pine Grove



Proposed Site Sections

Pine Grove to Trail



Proposed Site Sections

Trail to Observation Platform



Observation/Sampling Platforms

Function:

- Outdoor classroom
- Student access for water quality sampling
- Wildlife observation

Properties:

- Width varies, 4' – 10'
- Extends over pond surface and degraded shoreline – 12"-18" above surface
- Controls circulation
- ADA – compliant (2 options for materials)
- Informal gathering area for “overflow”

Outdoor Classroom

Existing Conditions Photos



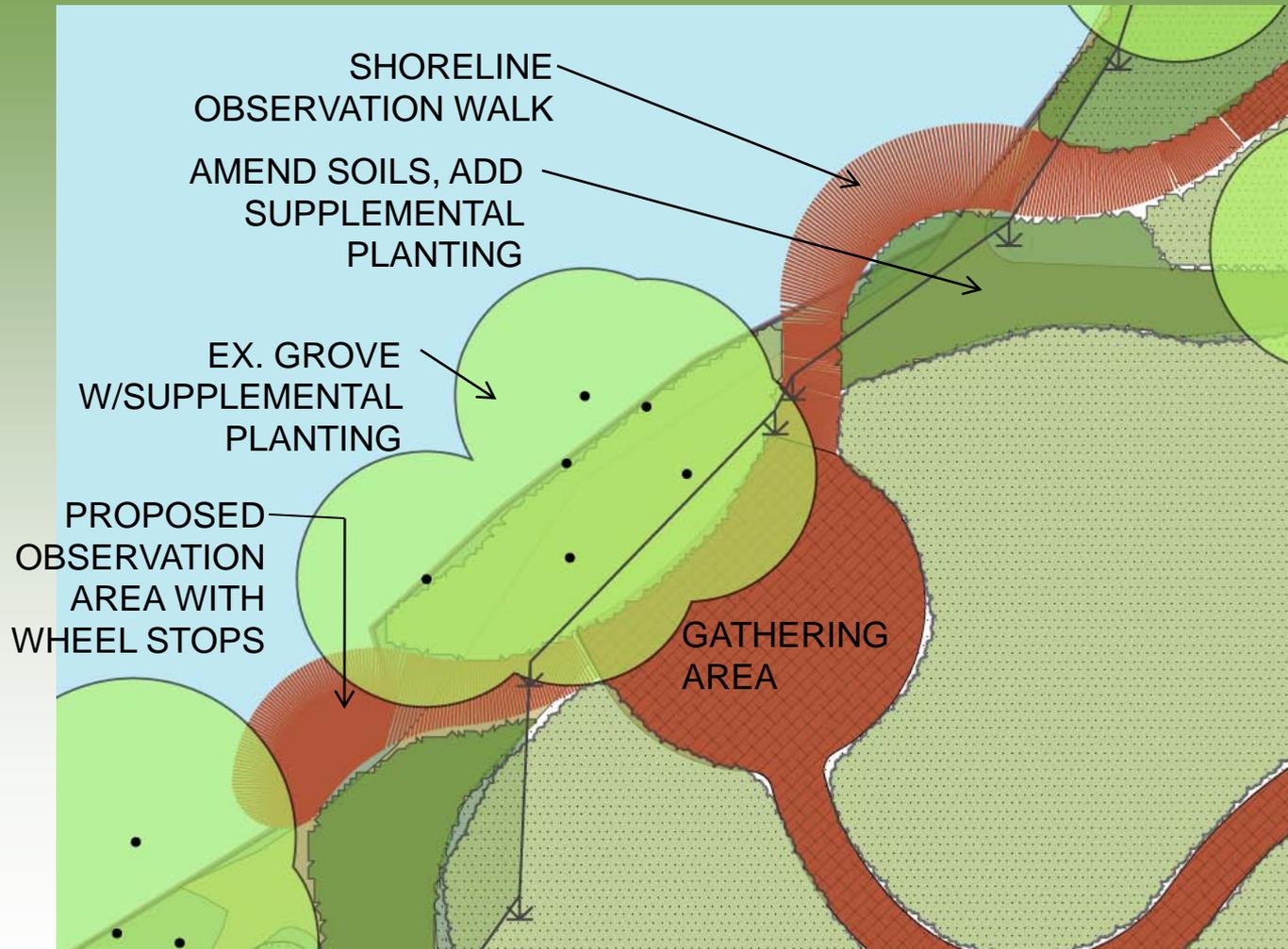
Proposed Sampling Area 1



Proposed Sampling Area 2

Outdoor Classroom

Proposed Sampling Areas and Gathering Space



Observation Platform Materials

Option 1: Ipe Timber

Benefits:

- 50+ year longevity
- Minimal maintenance
- Natural, non-toxic material
- Blends well with natural environment
- Successful Installation at Fresh Pond Golf Course



Drawbacks:

- Flammable
- Expensive material and installation costs



Observation Platform Materials

Option 2: Fiberglass Grating

Benefits:

- Extremely durable and lightweight
- Non-flammable
- Can be painted any color
- Low maintenance and long-lasting
- Non-skid surface

Drawbacks:

- “Hard” texture
- Does not blend as well with natural environment



Proposed Black's Nook Trail

Function:

- Connects Black's Nook Connector Path to Pond Edge

Properties:

- Primary trail - 5' width, Secondary trail 4' width
- ADA-compliant
- Total length of 390 linear feet, including platforms (existing paths total 970 linear feet)
- 2 options for Paving Material

Proposed vs. Existing Trails



Proposed Trail Materials

Option 1 – Flexipave

Benefits:

- Color/texture blend well with natural environment
- Softer walking surface
- ADA compliant, non-toxic
- Highly porous (14" per hour)
- Longevity
- Successful installation at Little Fresh Pond

Drawbacks:

- Requires periodic sweeping
- Higher installation costs



Proposed Trail Materials

Option 2 – Porous Asphalt

Benefits:

- Flexible paving
- ADA compliant
- Highly porous
- Longevity (25 plus years)

Drawbacks:

- Difficult to construct (messy)
- Initial color is dark
- Requires periodic sweeping



Concord Avenue Entrance

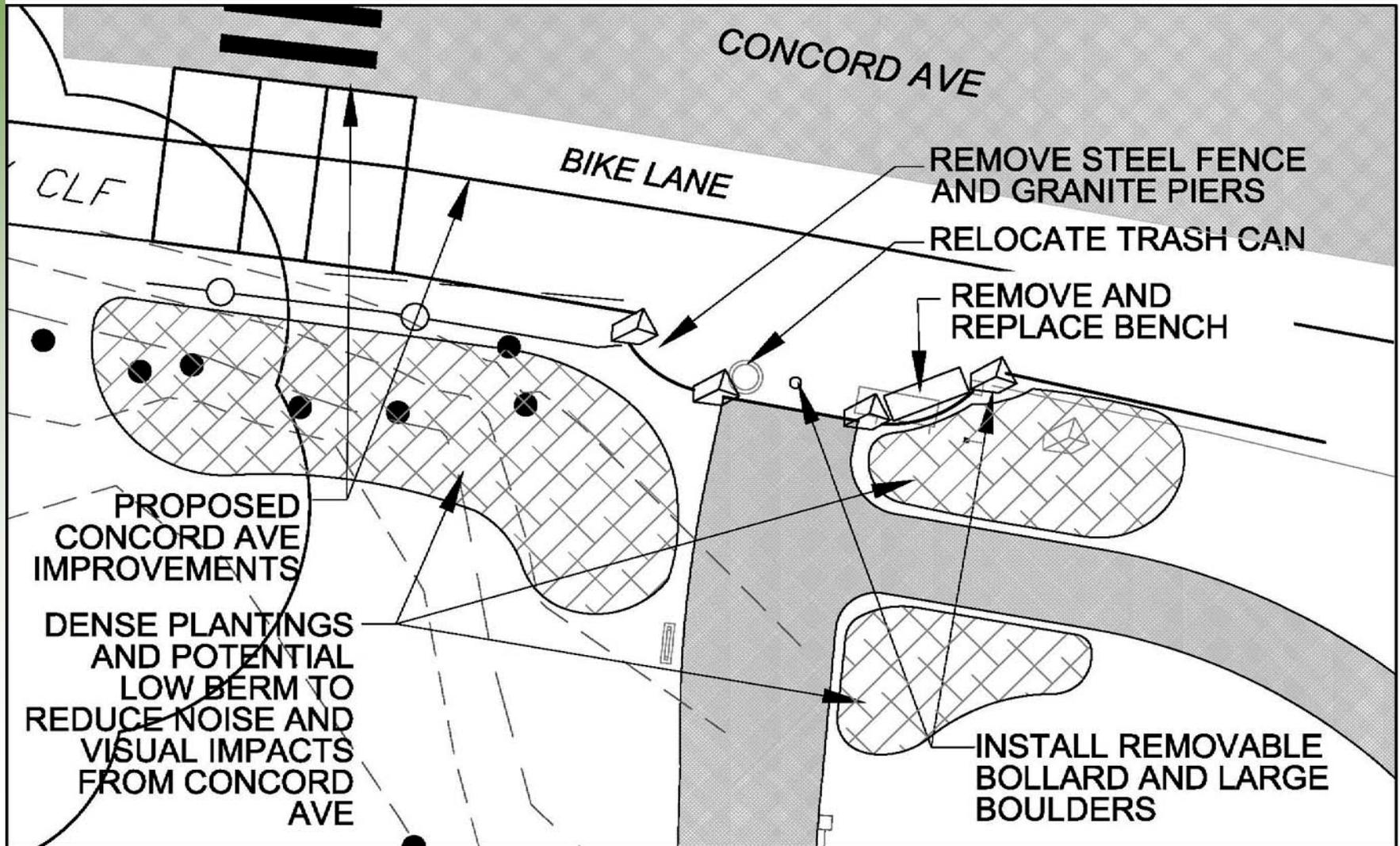
Existing Conditions



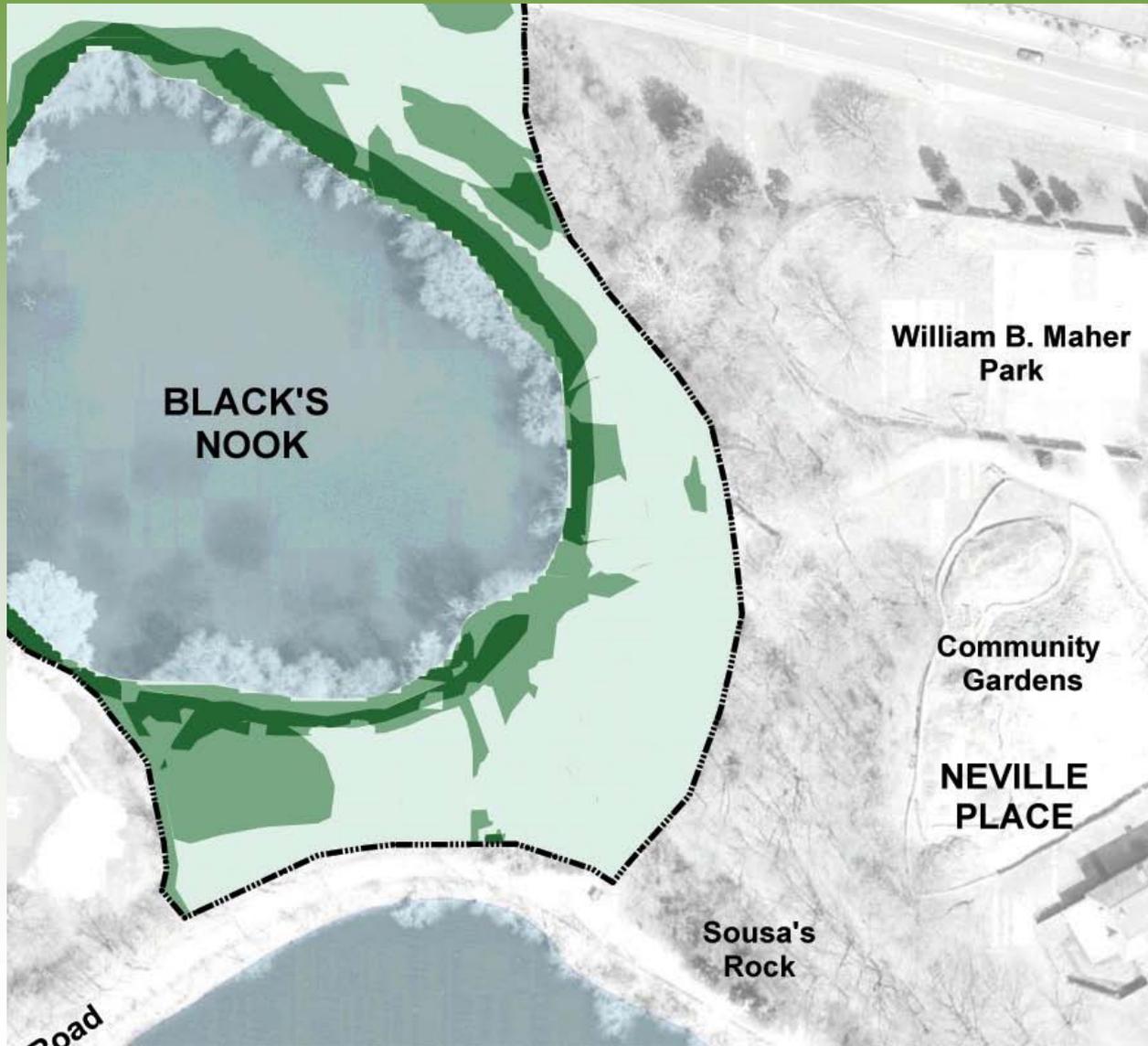
Goal: Coordinate and/or modify entrance with future Concord Avenue Improvements

Enlargement Plan at Concord Avenue Entrance

Proposed



Habitat Restoration - Opportunities



UE	- +5
UC	- +5
Slope	
<5%	- 0
5%-15%	- +3
>5%	- +5
Vegetation	
HF	- +4
SF	- +3
FW	- +5
Canopy	
<30%	- +4
30%-70%	- +3
>70%	- -1
Ground Cover	
<10%	- +4
10%-50%	- +2
>50%	- +1
Invasives	
<10%	- 0
10%-30%	- +3
>30%	- +5
Bank height	
<12"	- 0
>12"	- +5

LEGEND

- Water Bodies
- Limit of Project Area

Opportunity Rating

- Low (Score: 0-12)
- Medium (Score: 13-19)
- High (Score: 20-29)

Woodland Restoration – Stream C

Targeted Invasive Species Removal (Fall/Winter)

- Invasives targeted include:
 - Buckthorn
 - Norway Maple
 - Japanese Knotweed
 - Oriental Bittersweet
 - Poison Ivy
- Damaged trees that pose a threat to public safety



Woodland Restoration - Stream C



Site after Clearing
and Grubbing



Shortly after Planting

Next Steps

- Revise plan based on feedback
- Submit Notice of Intent to Conservation Commission
- Invasive tree and vine removal Fall 2009/Winter 2010
- Additional targeted invasive plant removal Spring 2010
- Shoreline stabilization and soil amendments Spring
- Planting late Spring/early Summer 2010
- Black's Nook Trail and Platform Construction Summer 2010