Spy Pond Edge Protection and Erosion Control Project

Town of Arlington, MA

Public Meeting

24 October 2016

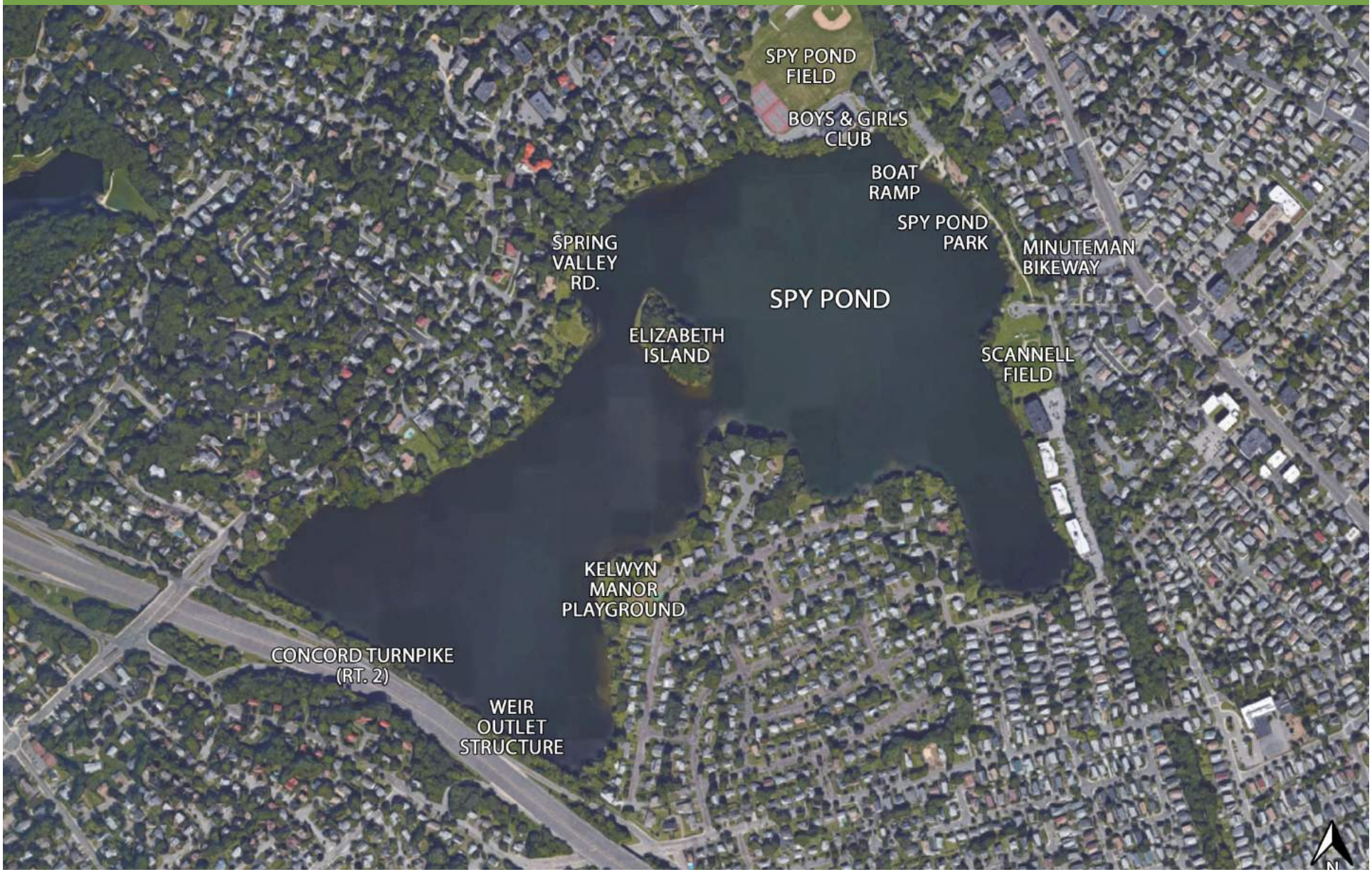
CHESTER ENGINEERS

TOWN OF ARLINGTON MASSACHUSETTS

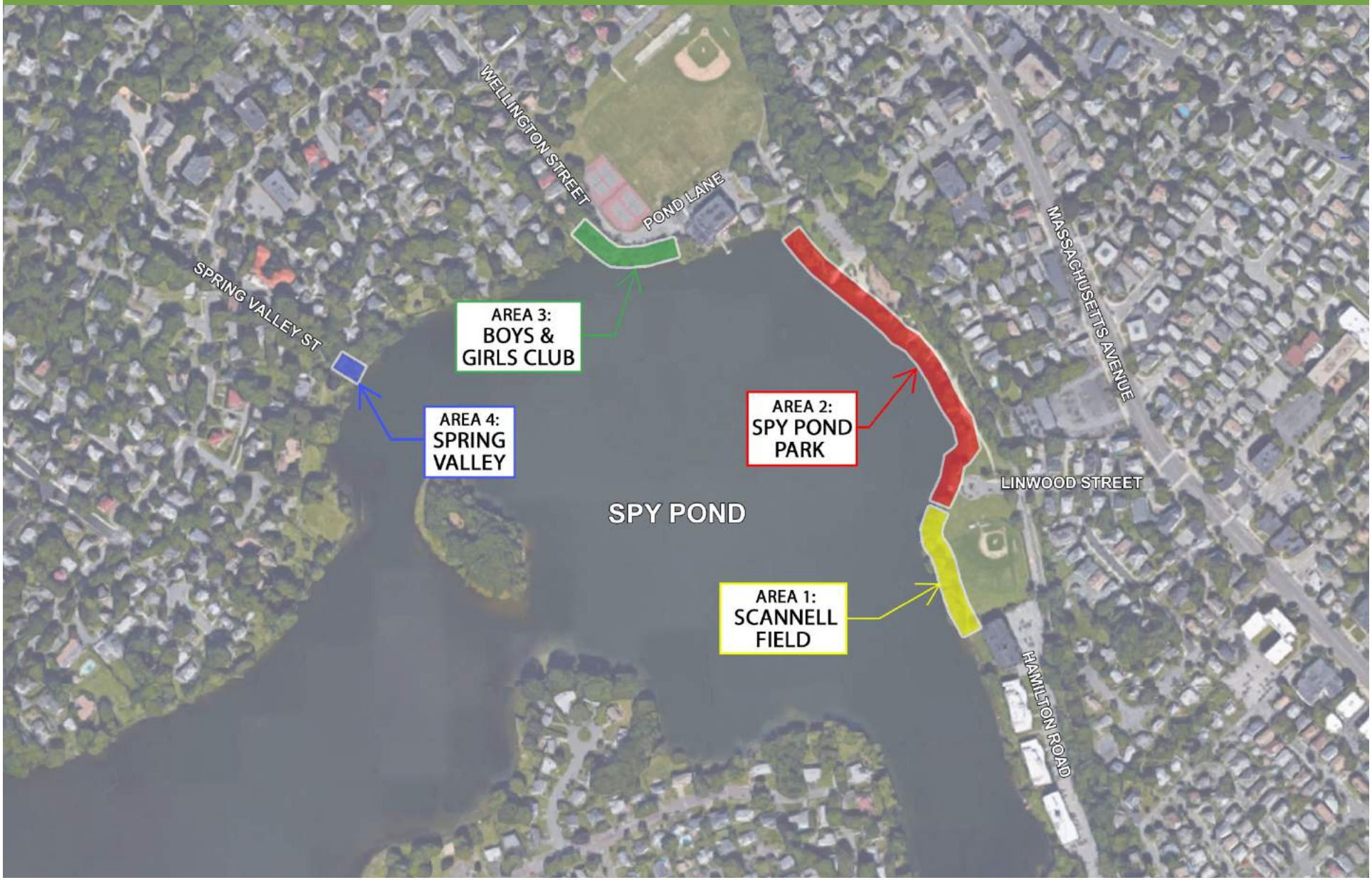
Agenda – Spy Pond

- Introductions (Arlington Conservation Commission)
- Project Goals
- Existing Shoreline Conditions
- Next Steps
- Proposed Schedule
- Questions and Comments

Project Location



Project Location



Project Goals

1. Preserve, stabilize & strengthen the pond's banks and water's edges
2. Control erosion along the banks
3. Protect & enhance wildlife habitat by protecting the pond's natural edges with soft armoring
4. Control access to prevent unauthorized paths along the shoreline
5. Broaden & strengthen constituency groups
6. Increase quality & opportunity for water use
7. Increase stormwater infiltration along the shoreline

Site Activities

Activities

- Ball Playing
- Jogging & Walking
- Kayaking & Canoeing
- Fishing
- Picnicking & Gathering
- Children's Play

Water Level

- Spillway Elevation 4.17
- Historic High Water Level is 7.0
- Historic Low 2.0

Shoreline Categorization

Stable vs. **Unstable**

- Vegetated
- Uncompacted soils
- Controlled runoff
- Shallower slopes
- Controlled human use
- Hard or soft edge

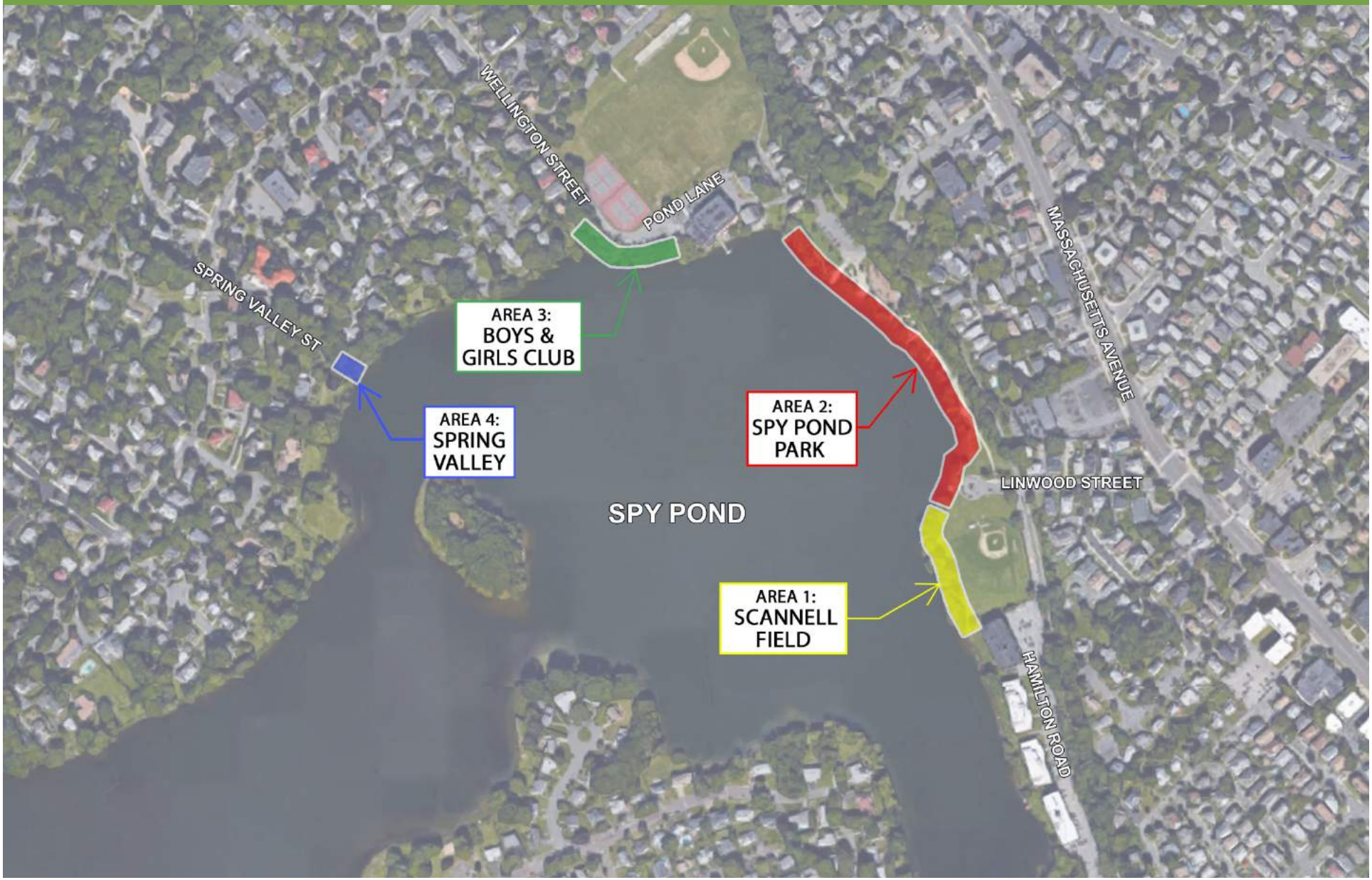
- Loss of stabilizing vegetation
- Compacted soils
- Uncontrolled runoff
- Steep slopes
- Uncontrolled human use

Shoreline Categorization

Three categories

- Unstable
- Marginally Stable
- Stable

Project Location



Scannell Field

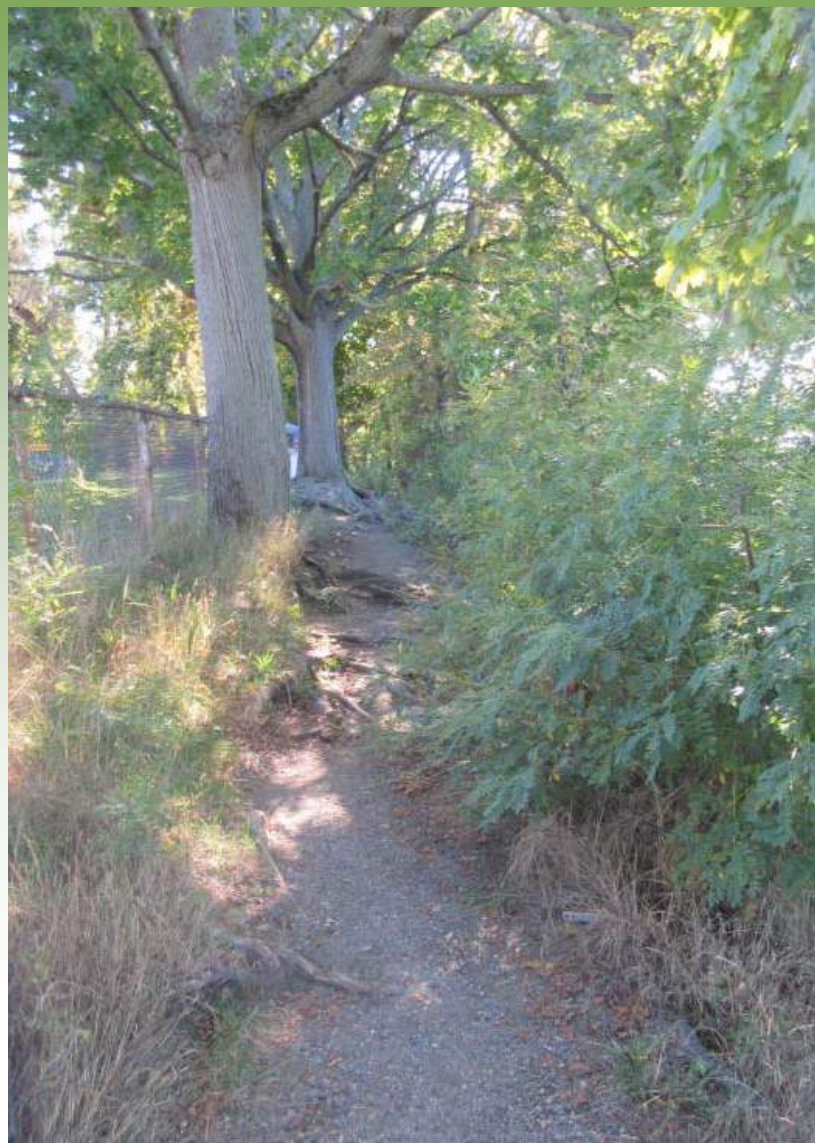
Existing Shoreline Conditions

Scannell Field - Unstable

- Loss of stabilizing vegetation
- Compacted soils
- Uncontrolled human use
- Steep slope
- Uncontrolled stormwater runoff


N
MASSACHUSETTS STATE PLANE COORDINATE SYSTEM (MAINLAND ZONE)
BENCHMARK
NAIL IN UP
ELEV=9.55
BIT CONC
CONC
BARREL
TABLET
SIGN
LAWN
BLEACHERS
BACKSTOP
FOUL LINE
FOUL POLE
GATE
SKINNED INFIELD
SKINNED INFIELD
BASEBALL
WATER(+/-)
METAL SHED
4' CLF
6' CLF
FOOT PATHS
SPY POND
WATER ELEVATION = 1.6'
(9/23/2016)
AREA 1

Existing Shoreline Conditions
Scannell Field - Unstable



Existing Shoreline Conditions
Scannell Field - Unstable

Existing Shoreline Conditions
Scannell Field - Unstable

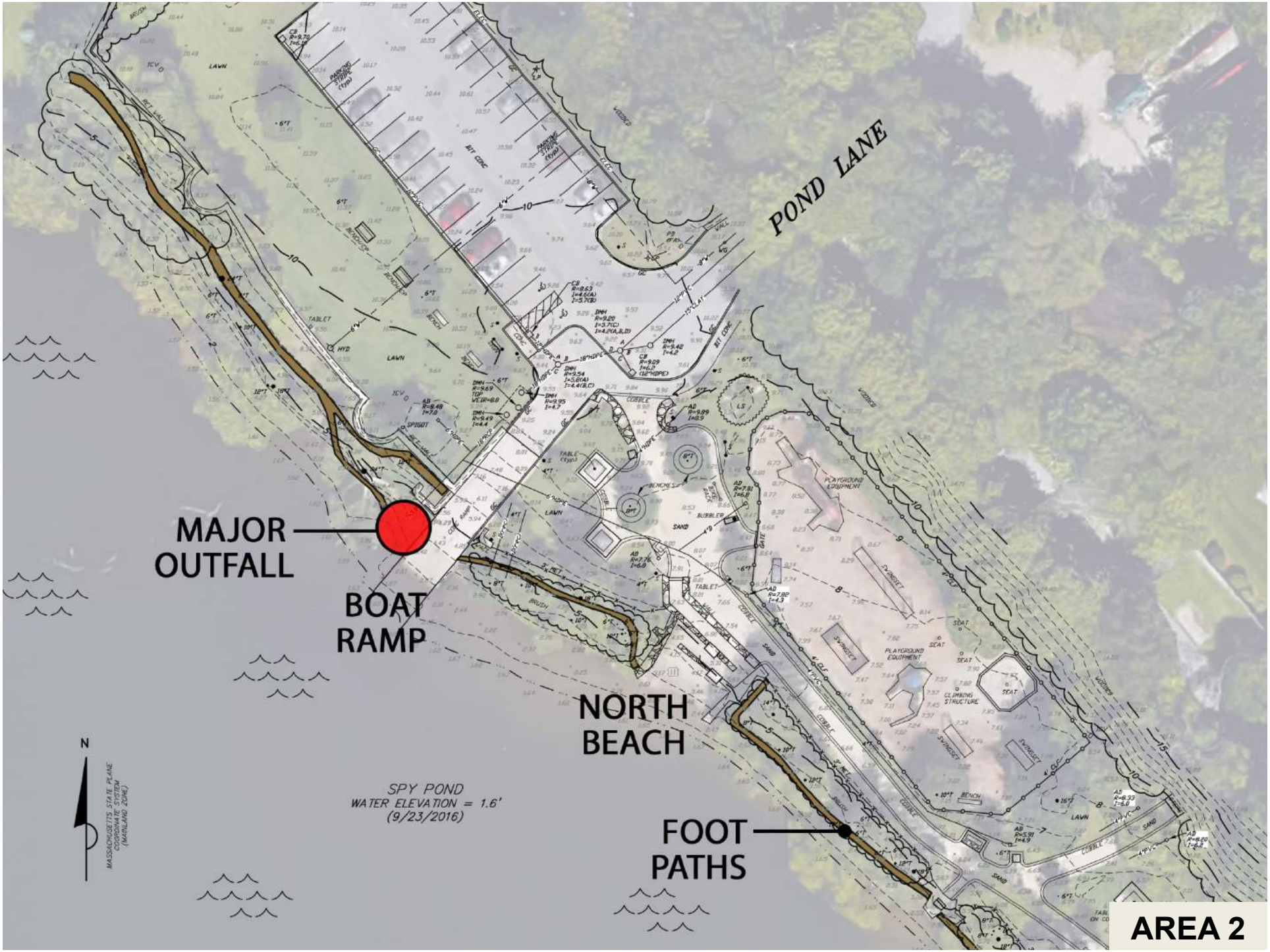
Spy Pond Park

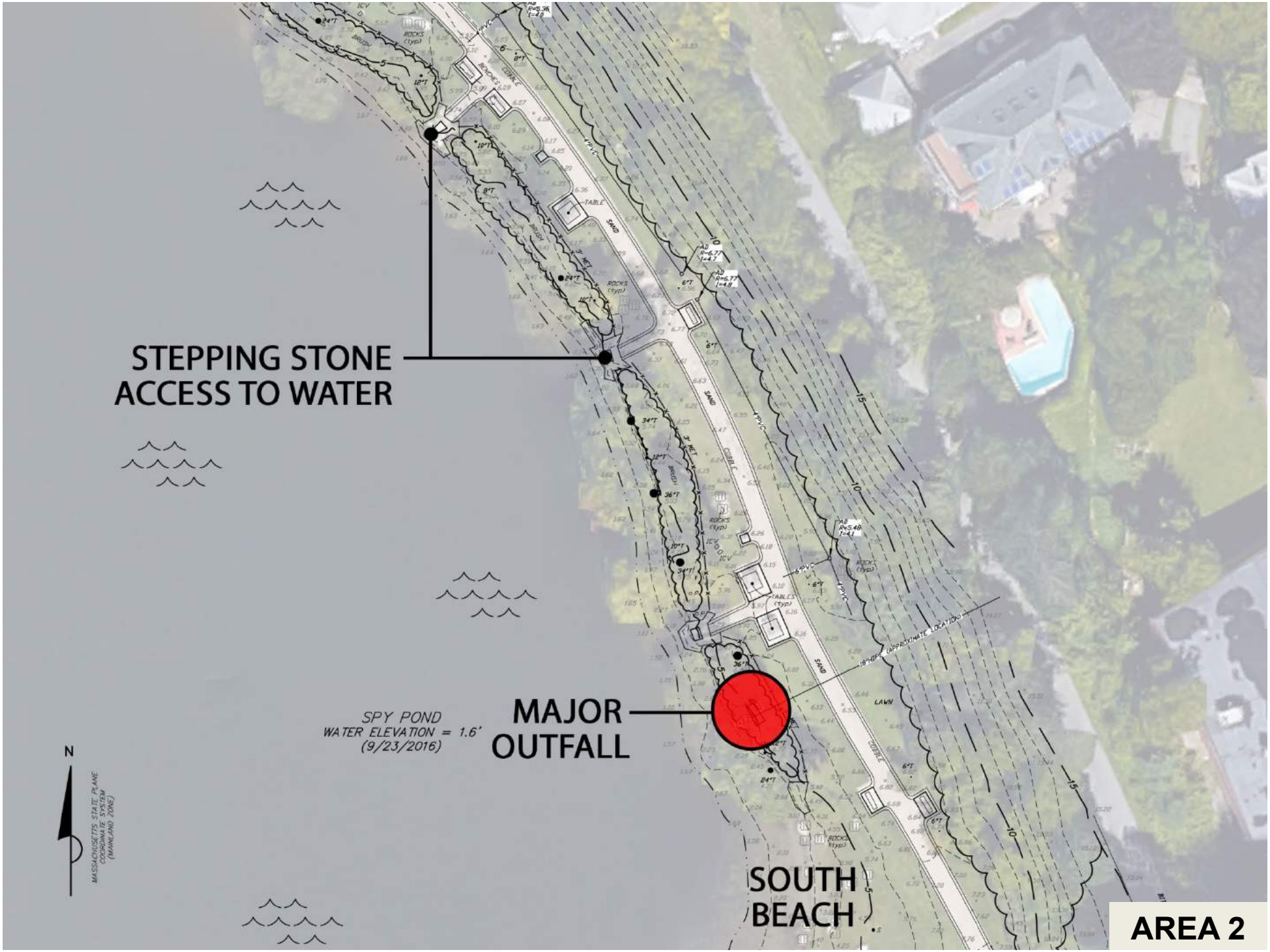
Spy Pond Park Renovation 2006

Existing Shoreline Conditions

Spy Pond Park – Marginally Stable

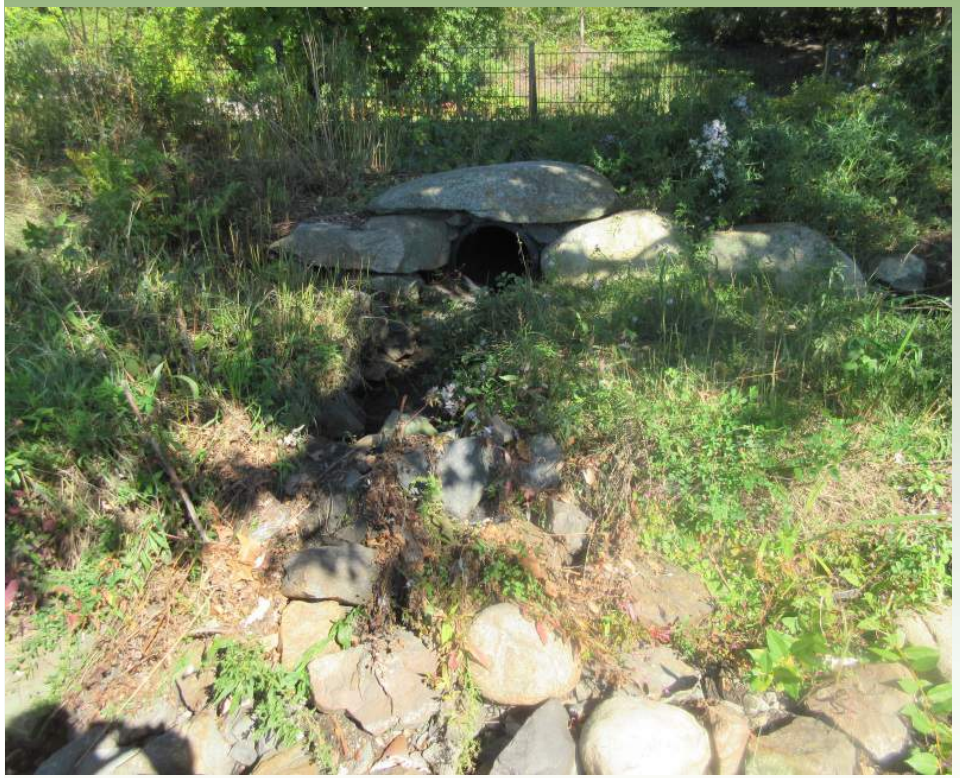
- Scattered loss of vegetation
- Compacted soils
- Uncontrolled human use

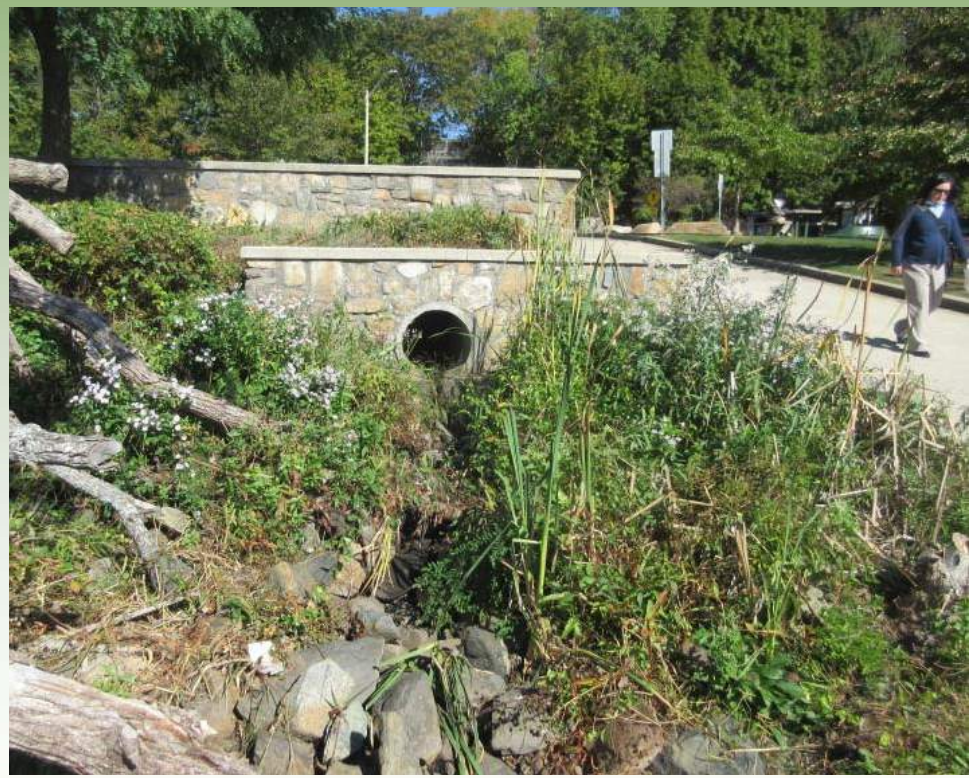

POND LANE
MAJOR OUTFALL
BOAT RAMP
NORTH BEACH
FOOT PATHS
SPY POND
WATER ELEVATION = 1.6'
(9/23/2016)
N
MASSACHUSETTS STATE PLANE COORDINATE SYSTEM (MAINLAND ZONE)
AREA 2


STEPPING STONE
ACCESS TO WATER
MAJOR
OUTFALL
SPY POND
WATER ELEVATION = 1.6'
(9/23/2016)
SOUTH
BEACH
AREA 2
N
MASSACHUSETTS STATE PLANE
COORDINATE SYSTEM
(MAINLAND ZONE)

Existing Shoreline Conditions

Spy Pond Park – Marginally Stable





Existing Shoreline Conditions

Spy Pond Park – Marginally Stable

Existing Shoreline Conditions

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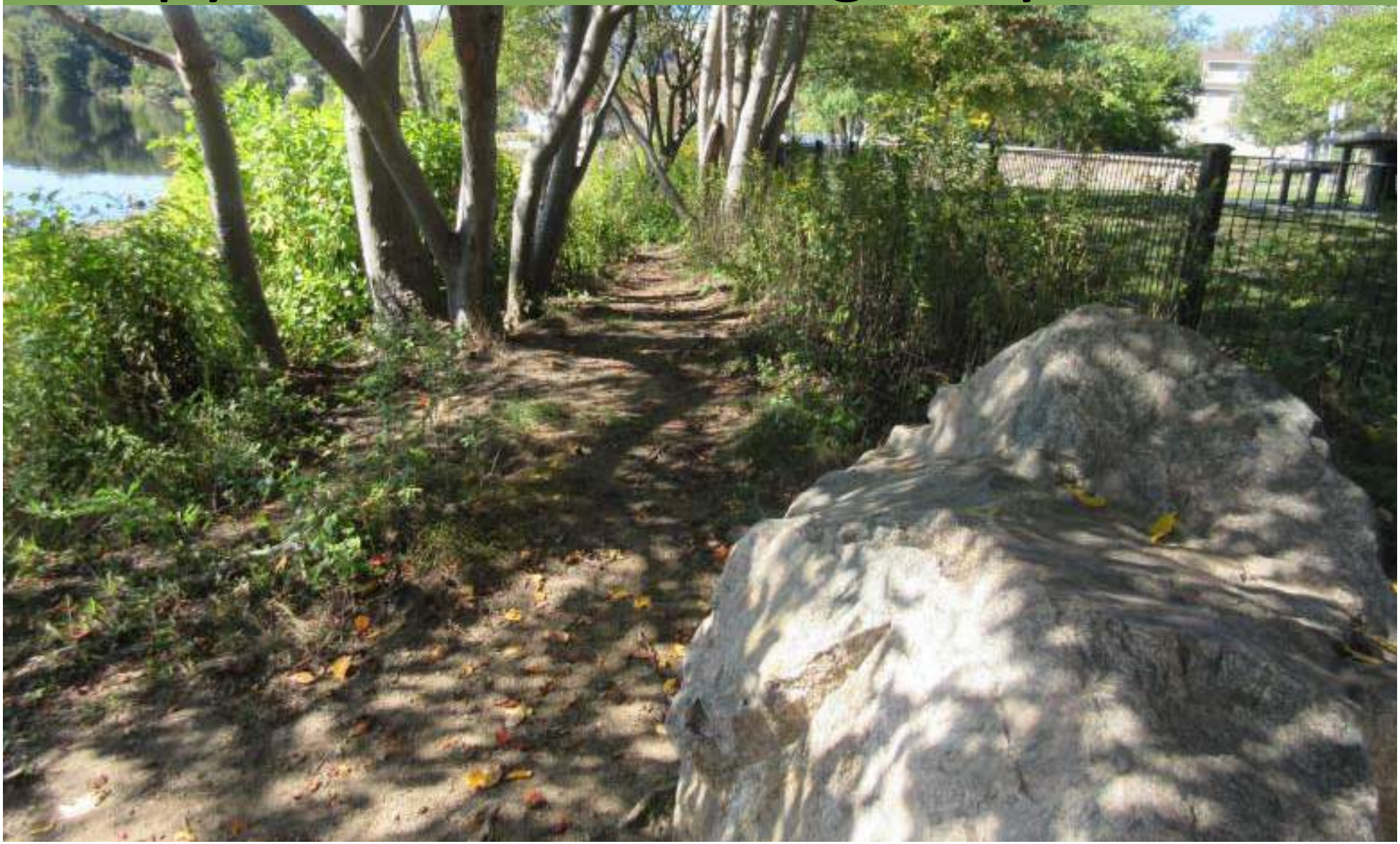
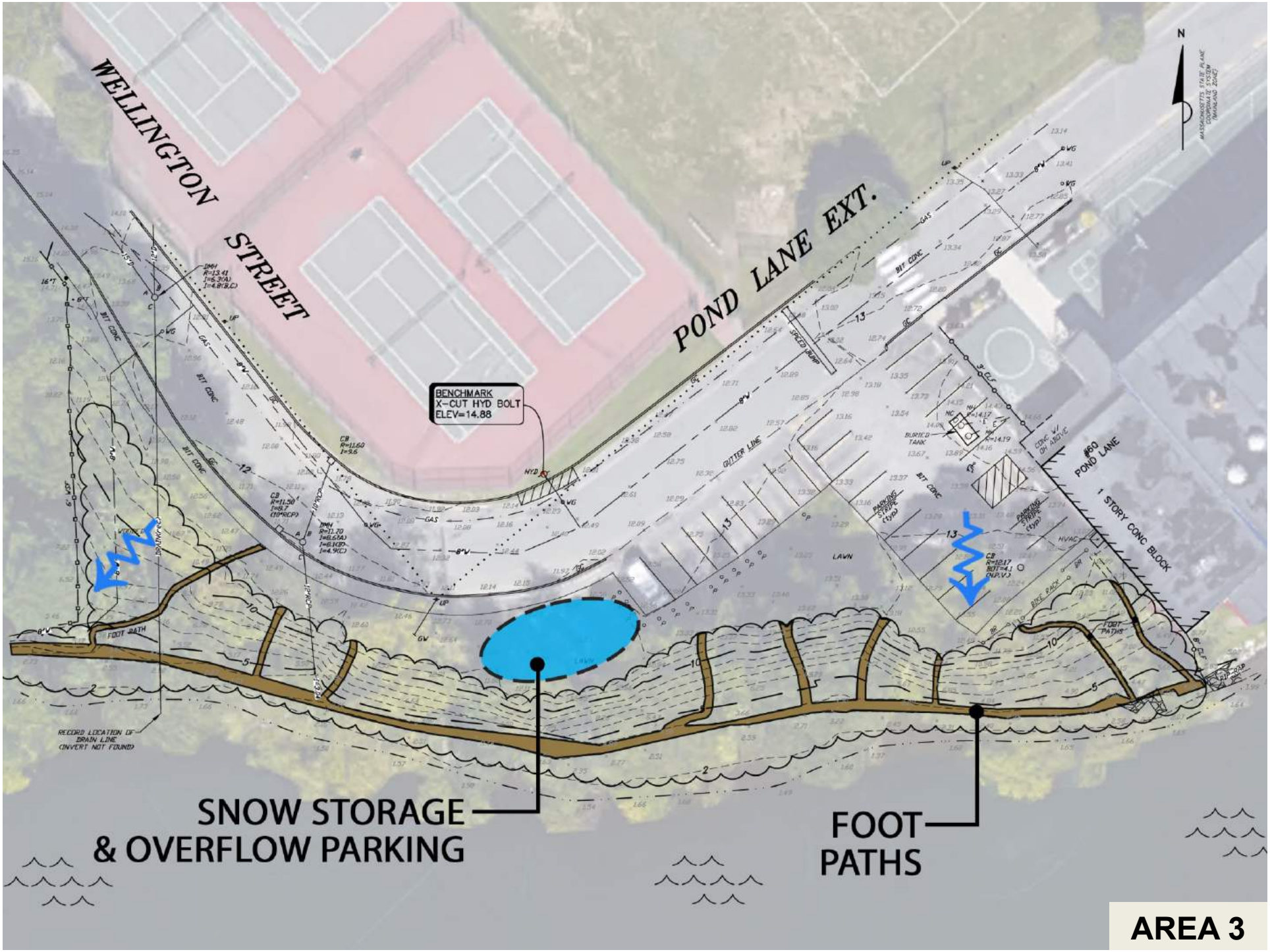
Existing Shoreline Conditions
Spy Pond Park – Marginally Stable



Boys & Girls Club

Existing Shoreline Conditions
Boys & Girls Club - Unstable

- Loss of stabilizing vegetation
- Compacted soils
- Uncontrolled human use
- Steep slope


WELLINGTON STREET
POND LANE EXT.
BENCHMARK
X-CUT HYD BOLT
ELEV=14.88
#60 POND LANE
1 STORY CONC BLOCK
SNOW STORAGE & OVERFLOW PARKING
FOOT PATHS
AREA 3

Existing Shoreline Conditions
Boys & Girls Club - Unstable

Existing Shoreline Conditions
Boys & Girls Club - Unstable

Spring Valley Road

Existing Shoreline Conditions

Spring Valley Road – Marginally Stable

- Scattered loss of vegetation
- Compacted soils
- Uncontrolled stormwater runoff
- Human use

Existing Shoreline Conditions
Spring Valley Road – Marginally Stable

Existing Shoreline Conditions
Spring Valley Road – Marginally Stable

Next Steps

Develop Concept Alternatives

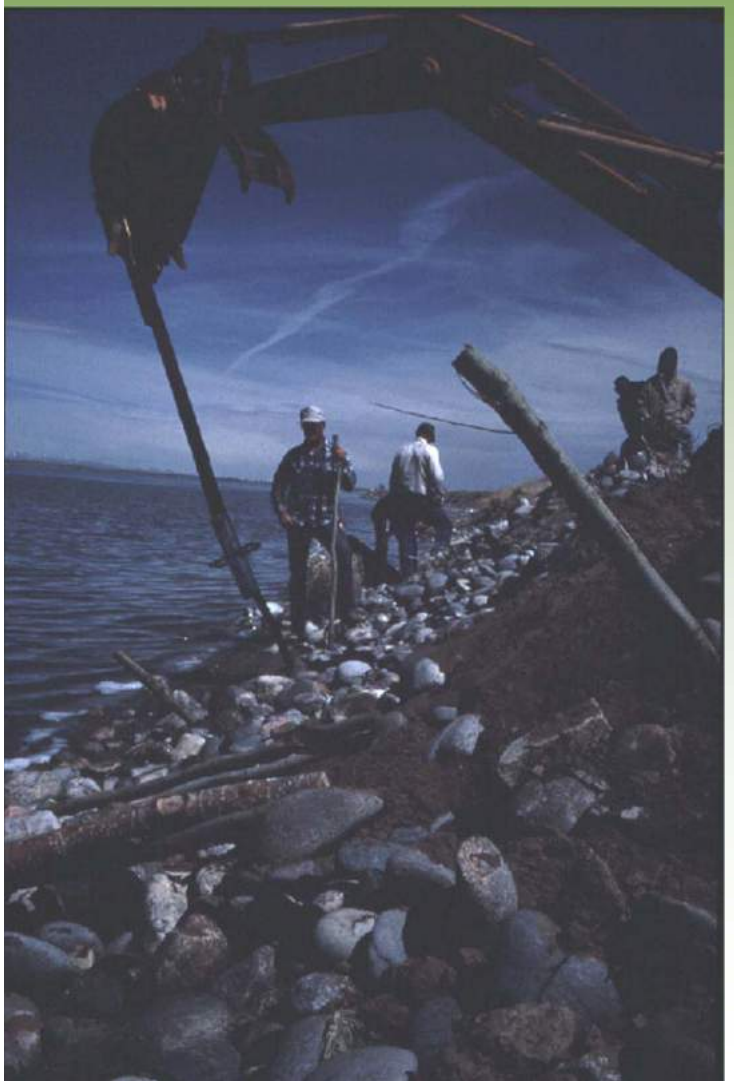
- Shoreline and Slope Stabilization
- Trail Alignment and Access
- Stormwater Runoff Capture and Infiltration

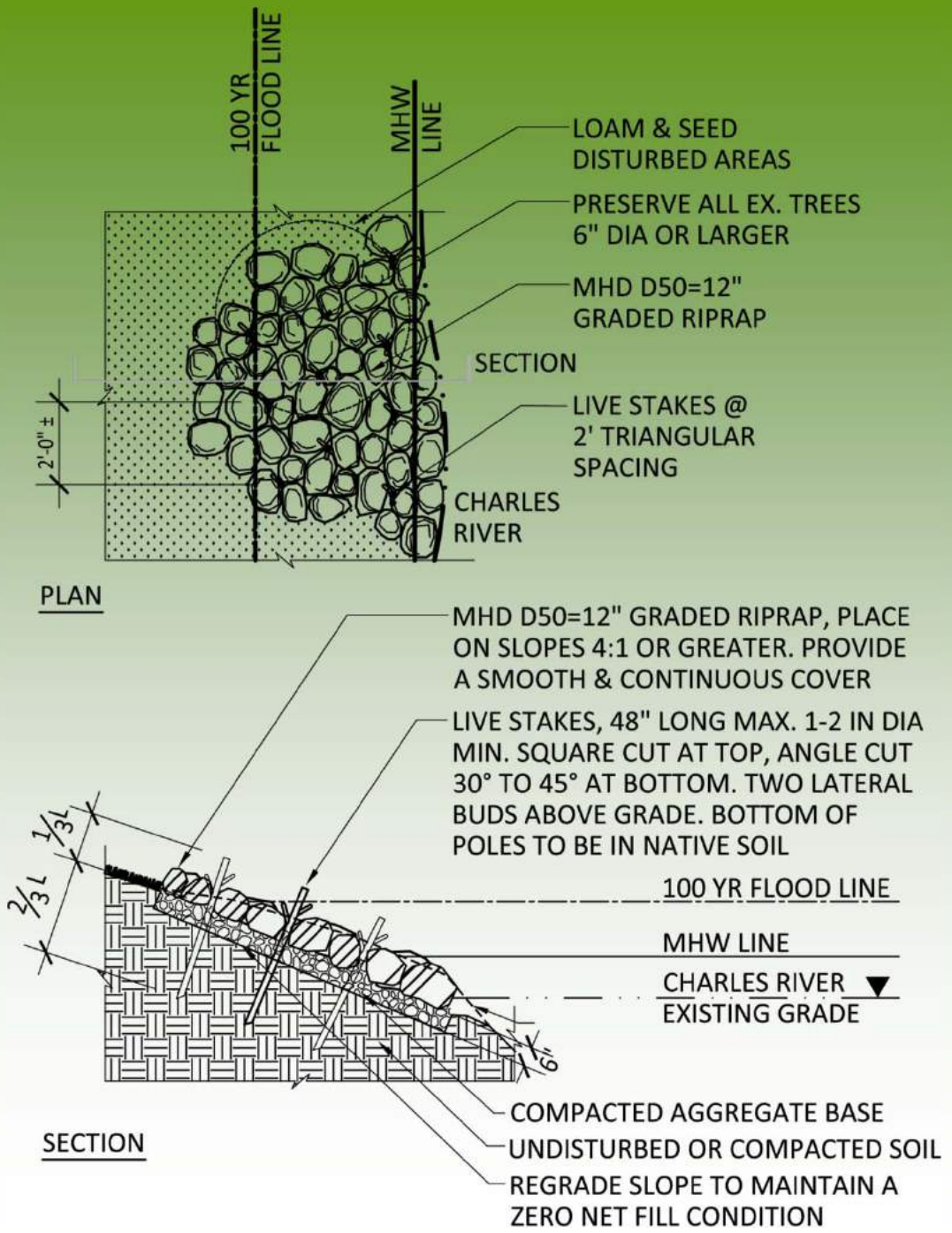
Shoreline Stabilization

Stabilization Techniques

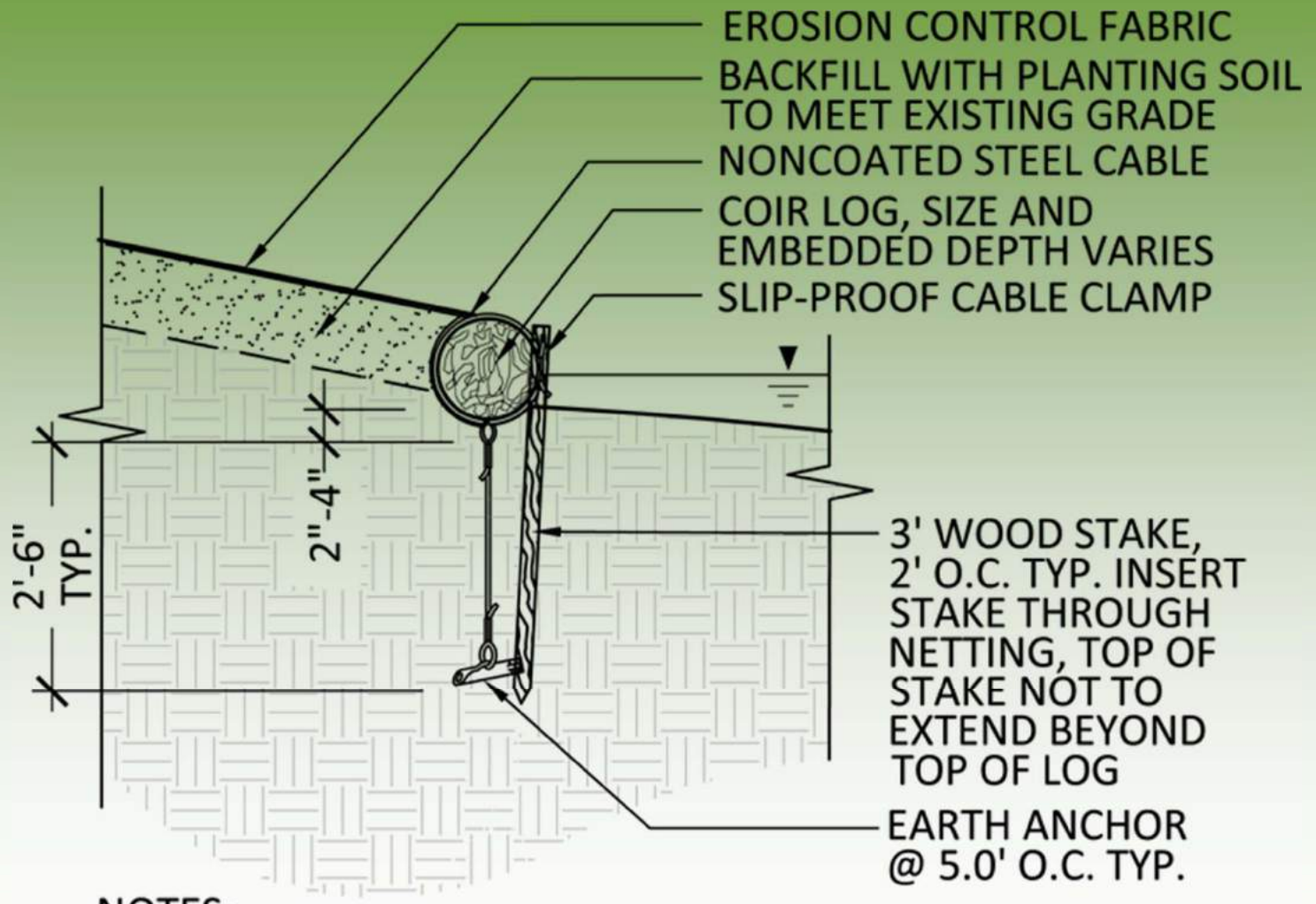
- Hard (Stone) System
- Soft (Bioengineered) System
- Hybrid System

Live Stakes in Riprap





Coir Fascine

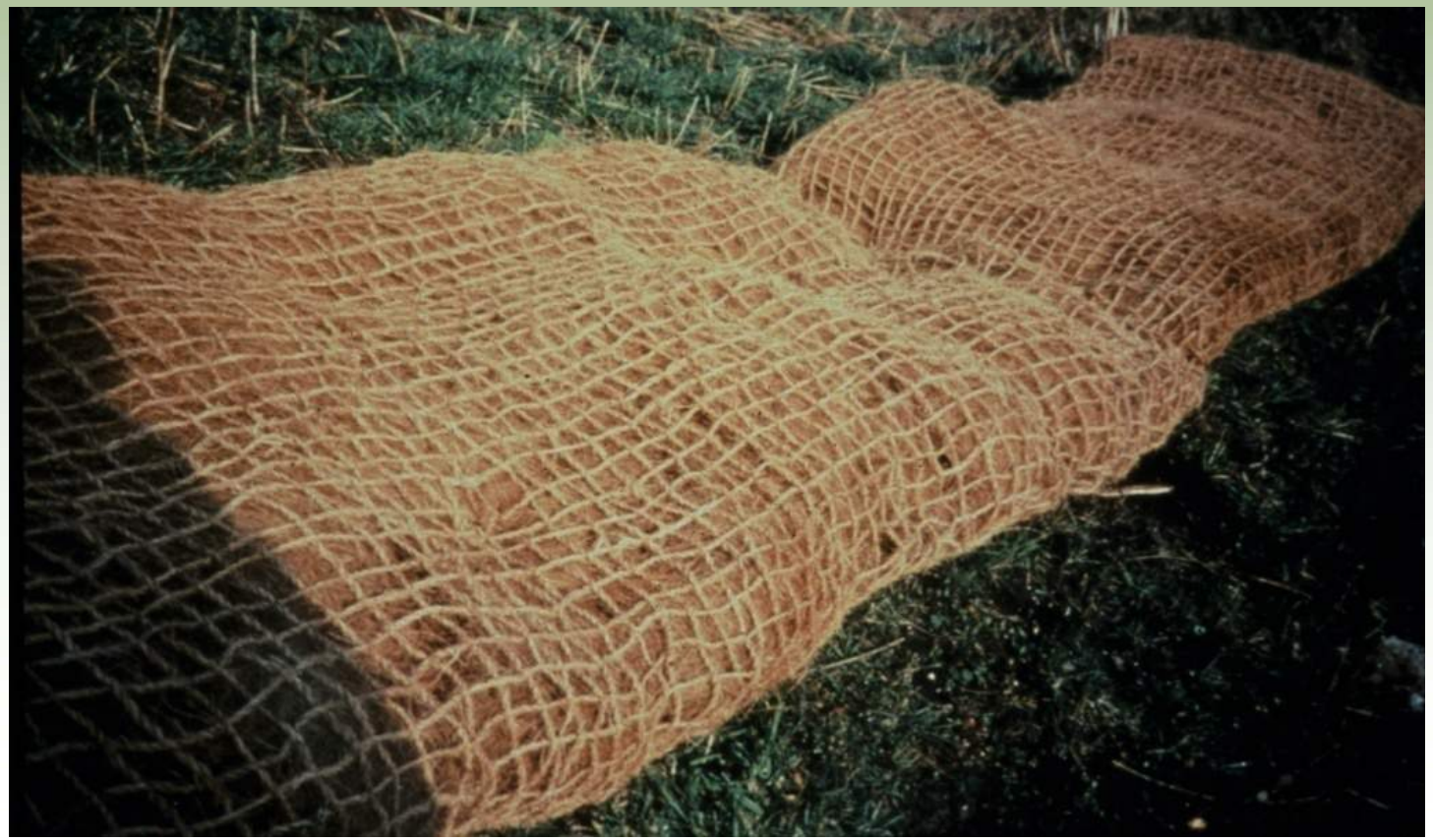


NOTES:

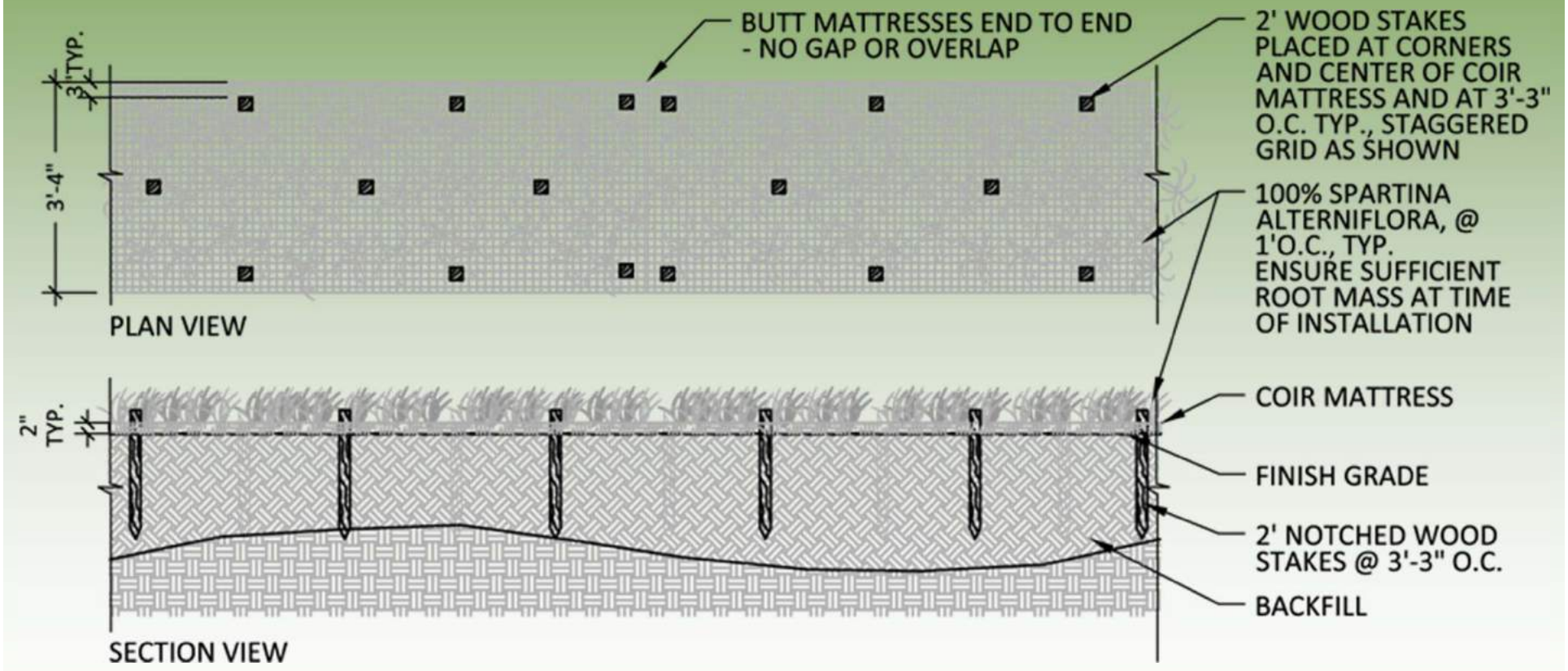
1. POSITION TOP OF COIR LOG AT FIXED ELEVATION.
2. STACKED LOGS TO BE SEWN TOGETHER

Coir Mattress

Rectangular coir pads anchored along shorelines to immediately buffer wave energy.

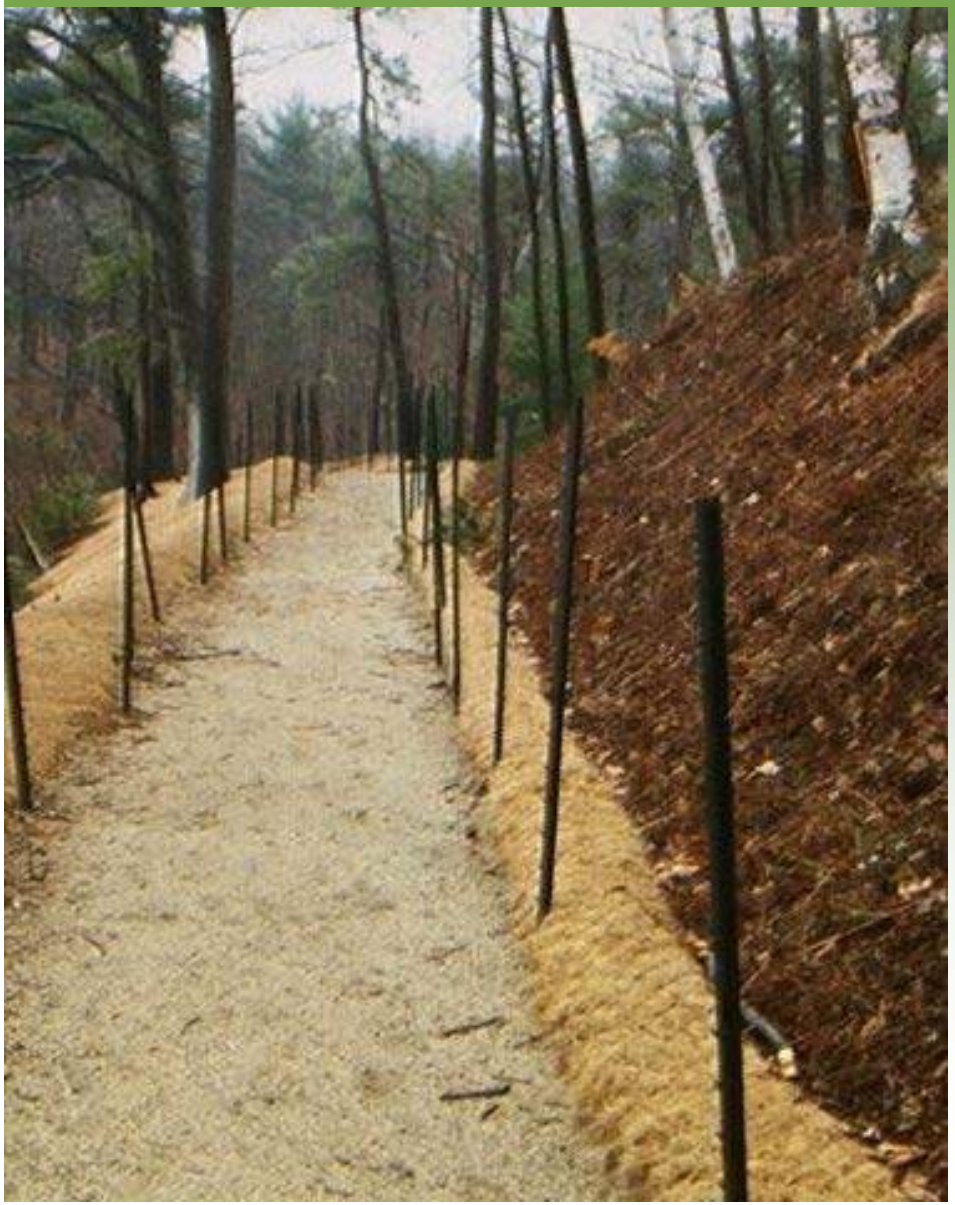


Pre-Vegetated Coir Mattress



Soil Lifts Wrapped in Coir Fabric and Brush Layers

Shoreline path during construction (1996)

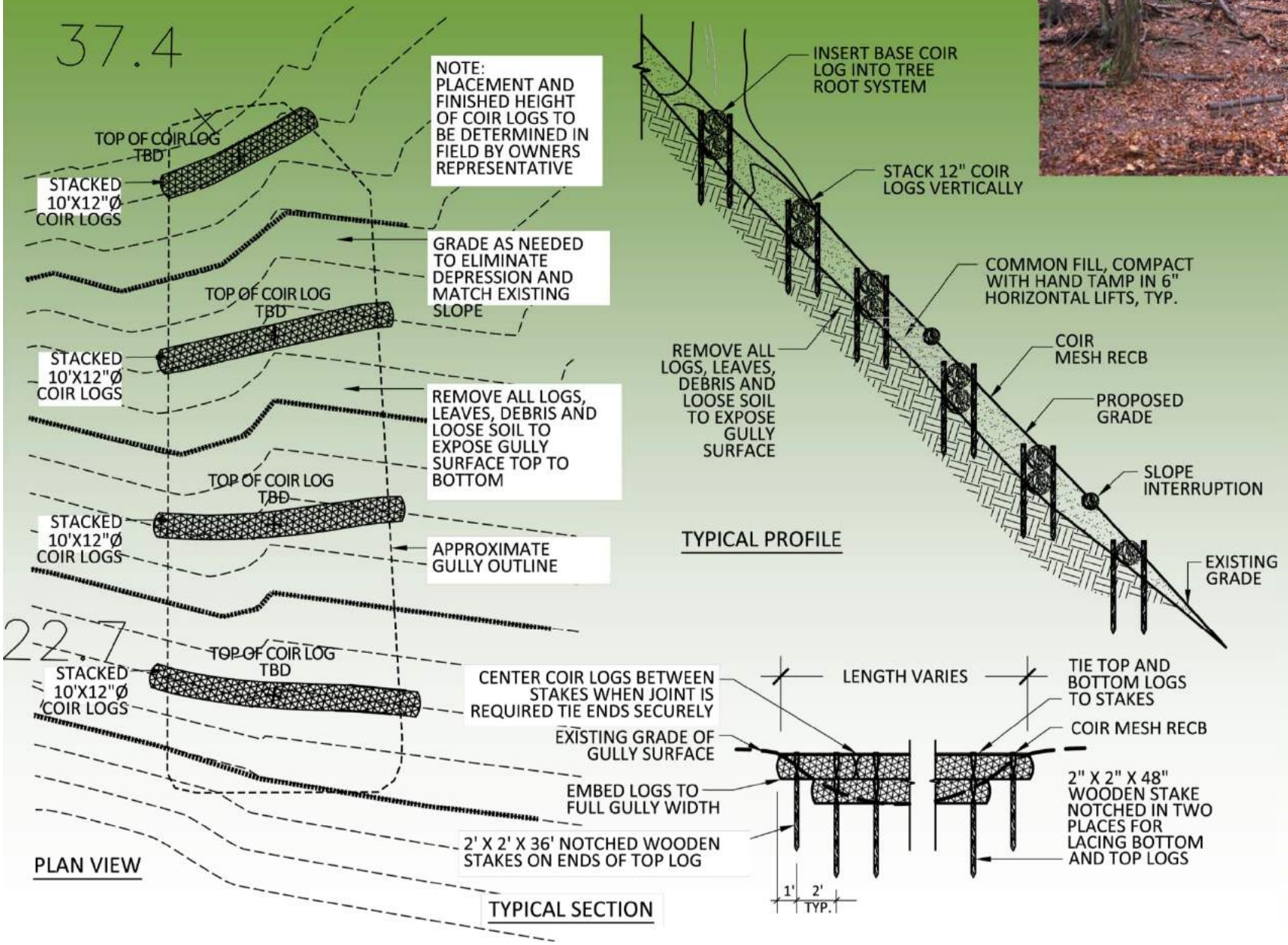


Three years later

Slope Stabilization

- Erosion Control Blanket
- Compost Filter Socks

Gully/Trail Repair



Trail Alignment and Access

- Trail Stabilization
- Trail Closures
- Fencing

Stormwater Runoff Diversion

- Divert runoff
- Promote infiltration
- Improve water quality

Level Spreader

Bioretention Swale & Basin

Project Schedule

- **July – December 2016 – Phase 1:** Existing Site Analysis & Concept Plan
- **December 2016:** CPA Funding Application for Phase 2
- **July 2017 – Phase 2:** Bid Documents
- **November 2017:** Permit Applications
- **February 2018:** Project out to Bid
- **April – August 2018:** Construction

Next Public Meetings

- **Conservation Commission Meetings**
  - **Public Meeting #2: November 17th**
  - **Public Meeting #3: December 1st**
- **7:30 -8:30 pm**
- **Town Hall Annex**

Questions or Comments?