Landfill Re-morial

The reclamation of the City of Fargo Landfill

Landscape Architecture Design Thesis
City of Fargo Landfill, Fargo, ND
Kene Okigbo
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Secondary Advisor: Dominic Fischer

Landfill Re-morial

"Memory does not equal preservation but instead has a transient quality. It implies a re-representation or understanding of the past, as memories constantly shift and change as one experiences life. The memory of a site should be used as a design strategy, as it shows depth and a process of connection." - Peter Latz

Landfill Re-morial

‘Architecture has to have the element of time. Design will always be as perfect as it was conceived. Though the facade may fade away, the spirituality will remain.’ - I.M. Pei

Landfill Re-morial

Through this thesis I hope to create a space that educates community members of current waste management issues. By taking a landfill and recycling the space into an asset for the public I hope to inspire Fargo-Moorhead citizens to make cleaner and greener choices daily.

How many active landfills are there in the US?

+ 1,000

+ 2,000

+ 3,000

How many active landfills are there in the US?

+ 1,000

+ 2,000

+ 3,000

3,091

How many inactive landfills are there in the US?

+ 1,000

+ 2,000

+ 3,000

3,091

+10,000

Why is this important?

Leachate Leaking

Wasted Land Use

Non-renewable Resource Depletion

Why is this important?

Leachate Leaking

Wasted Land Use

Non-renewable Resource Depletion

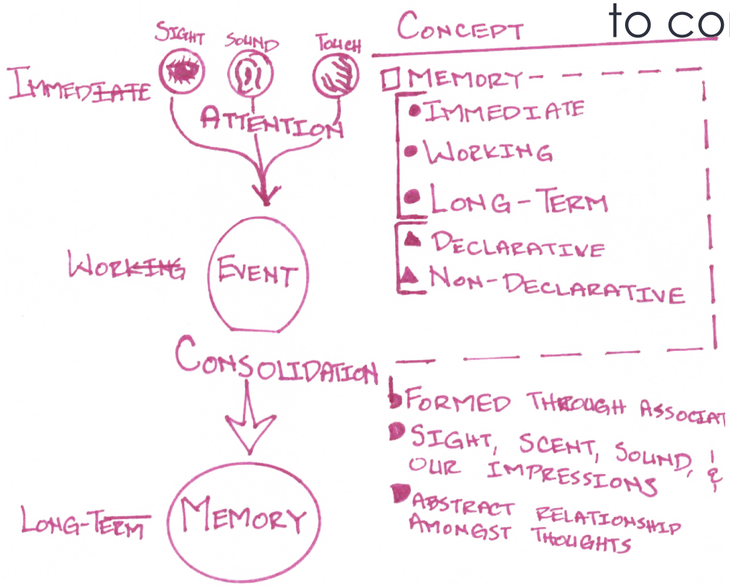
Theoretical Premise

What is a re-morial?

Theoretical Premise

What is a re-morial?

Taking a present inconvenient truth and dramatizing it, to commit it to memory.



Regional Context Map

Amenia
Harwood
Kragnes
Wheatland
Casselton
Mapleton
Oakport
West Fargo
Fargo
Dilworth
Glyndon
Durbin
Frontier
Sabin
Horace
Davenport
Baker

I-29
I-94
75
10
81
52

City Context Map

45th Street

I-29

12th Avenue

Main Avenue

I-94

City Density Map

I-29

45th Street

12th Avenue

Main Avenue

I-94

2 Mile Radius

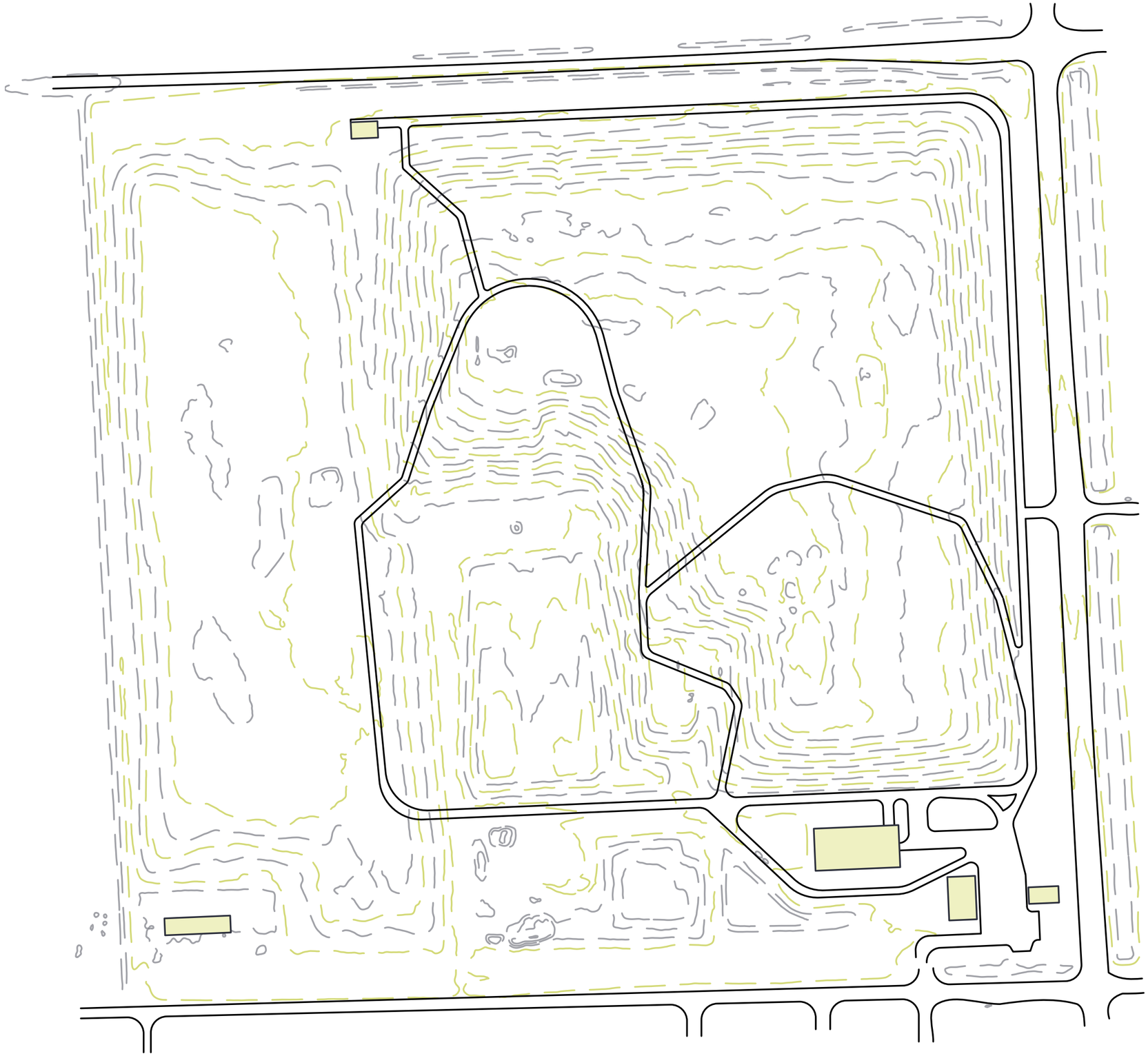
Low Density

Medium Density

High Density

City of Fargo Landfill

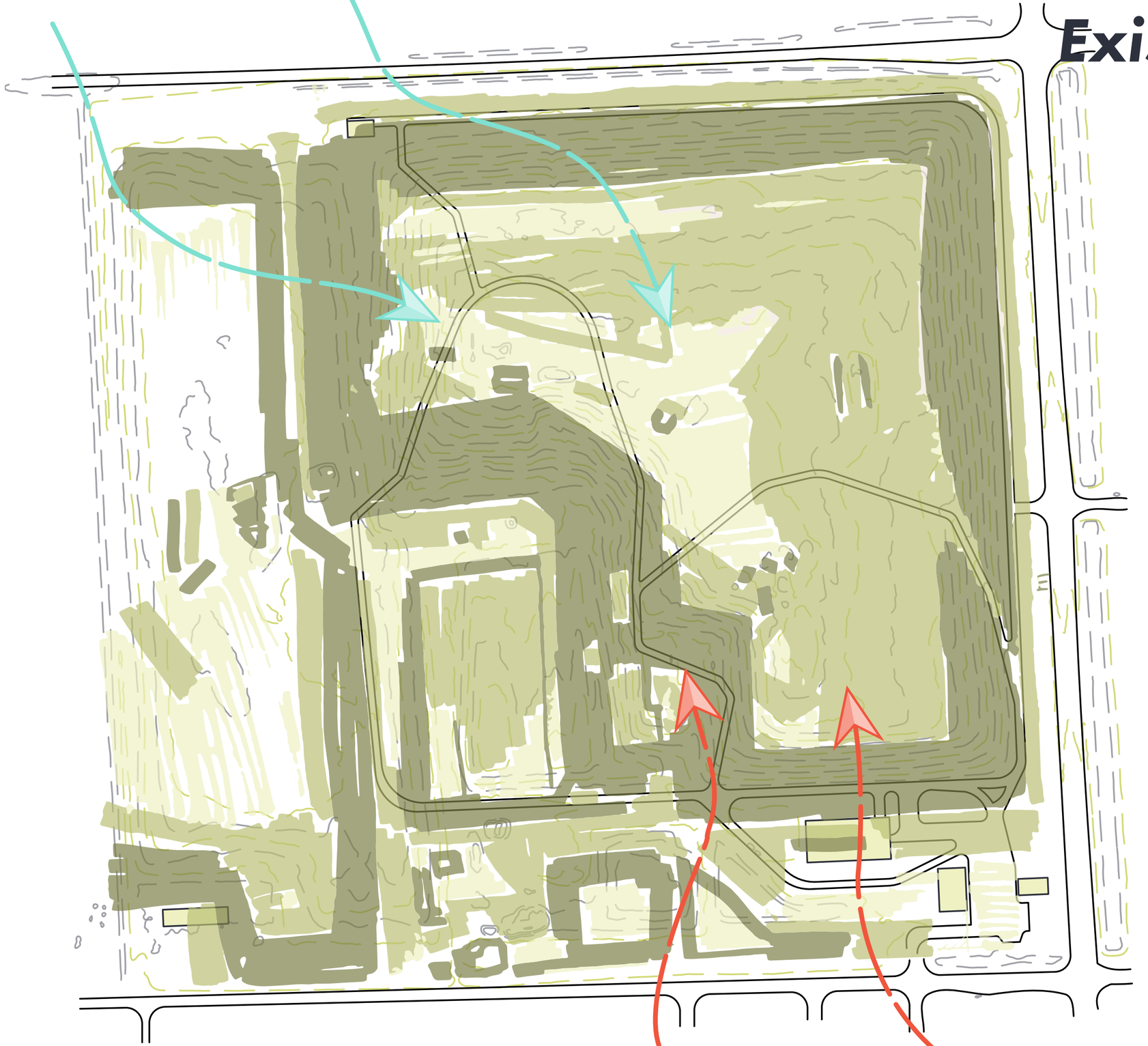
Site Map



contour lines

buildings

Existing Slope Analysis



shallow slope

medium slope (1/4)

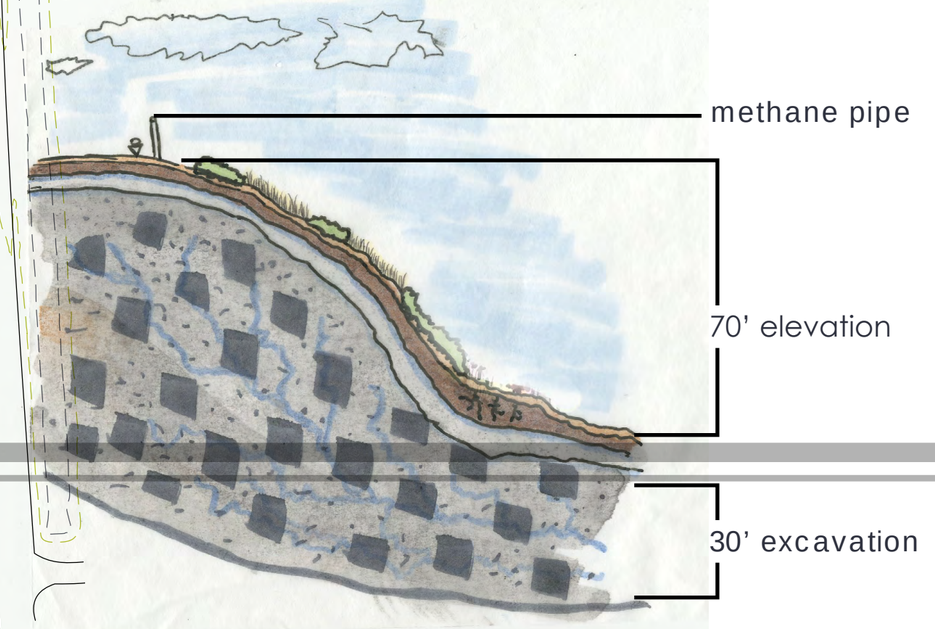
steepest slope (1/5)

winter wind

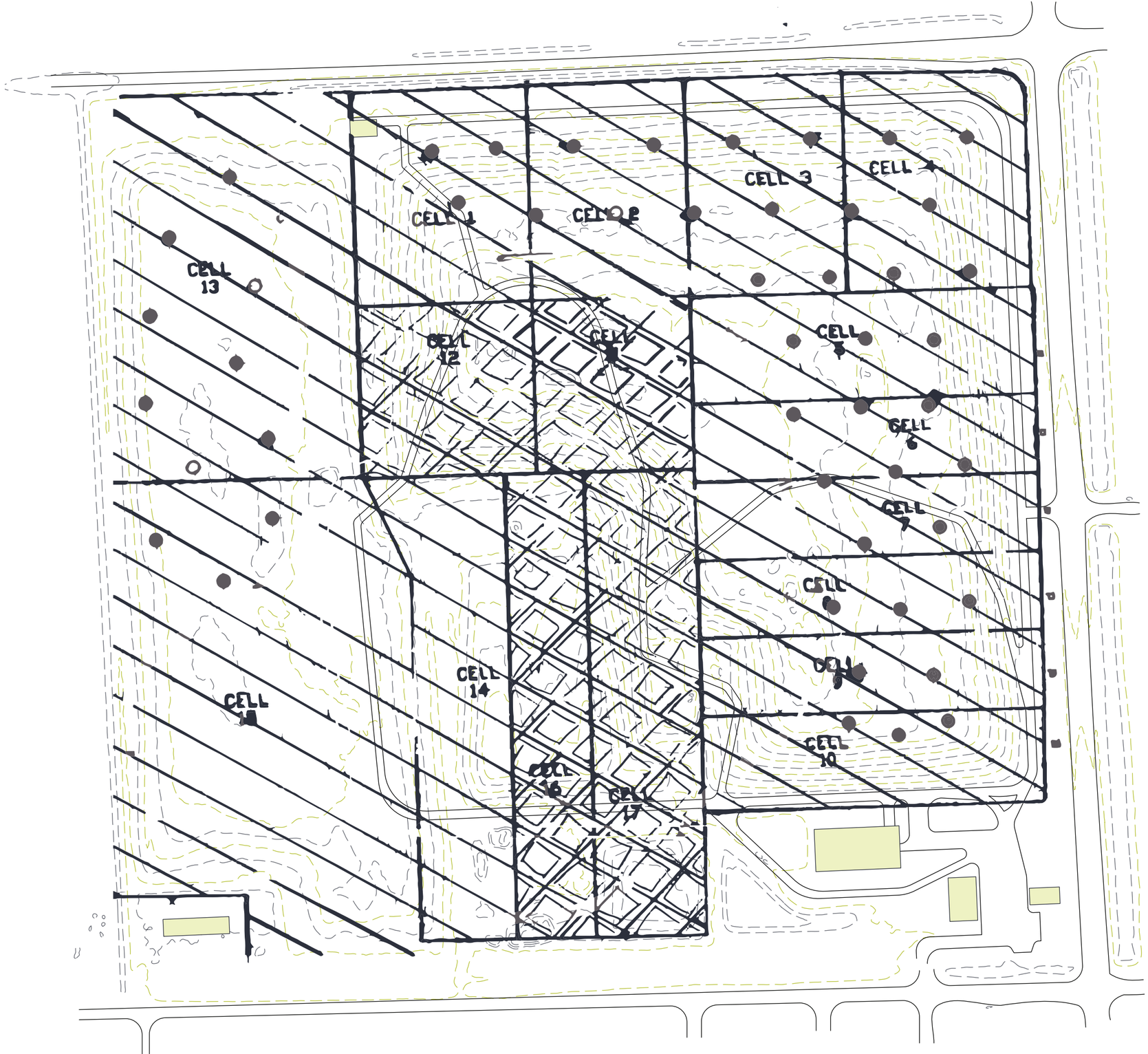
summer wind

Methane Pipes

- methane pipes
- pump stations



Cell Structure

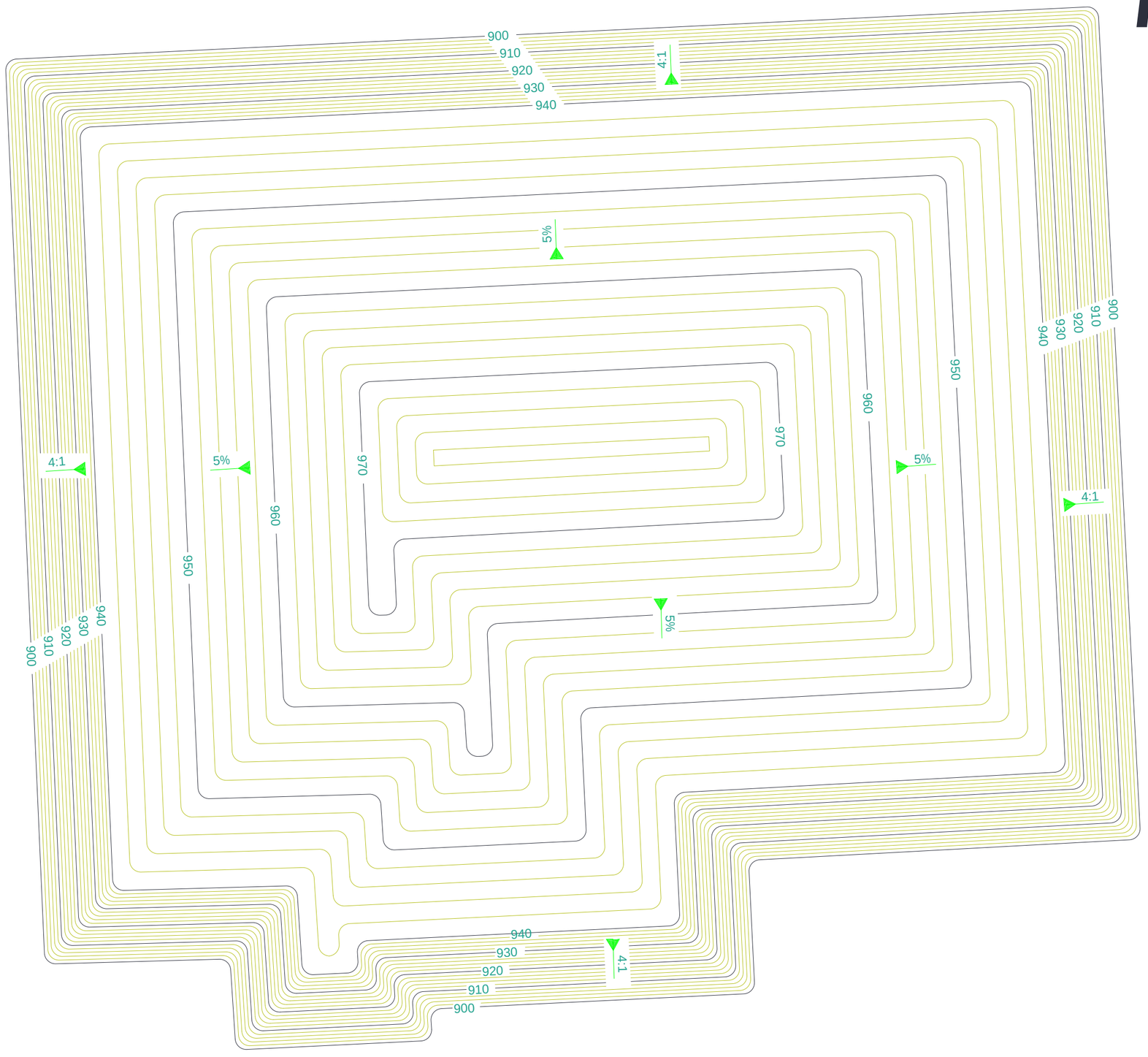


inactive cells

active cells

Permitted Final Grades

contour lines



Site Concerns

Landfill Smell

Site Safety

Vegetation Planting

Site Concerns

Landfill Smell

Site Safety

Vegetation Planting

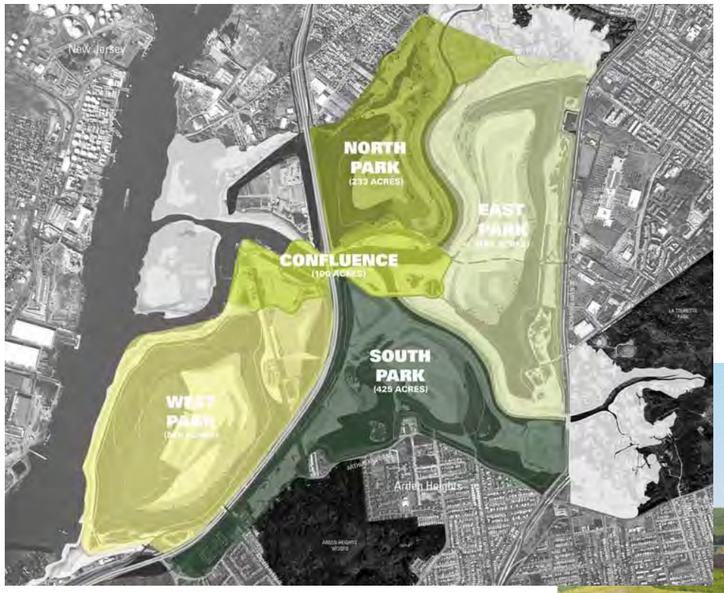
Methane

Case Study

Fresh Kills Park: NY, NY

Previously the largest landfill in the world, Fresh Kills Park is now a revitalized statement for the potential of waste reclamation. Boasting a lack of smell and natural decor, this former eye and nose soar are beautification incarnate.

Fresh Kills educates the people of New York about best management practices, through example. It begins to redefine how landfills are viewed and their propensity post-closure; which is what I plan to do in Fargo.



Case Study

Byxbee Park: Palo Alto, California

Byxbee park is an art exhibit in the form of a park. Atop a reclaimed landfill, Byxbee has amenities for biking and pleasure strolling.

The park finds itself outside of the typical route of its park-goers, meaning that the park itself has been made a distinct destination, which is an obstacle I will be crossing as I progress with thesis.

Case Study

Mabel Davies Park: Austin, TX

Davies Park took a 50 acre gravel quarry and landfill, then transformed them into a community asset. $500,000 in funding was provided through the EPA to complete this $7,300,000 project

A funding model for Fargo can be created from a site similar to Fargo's 127 acre site

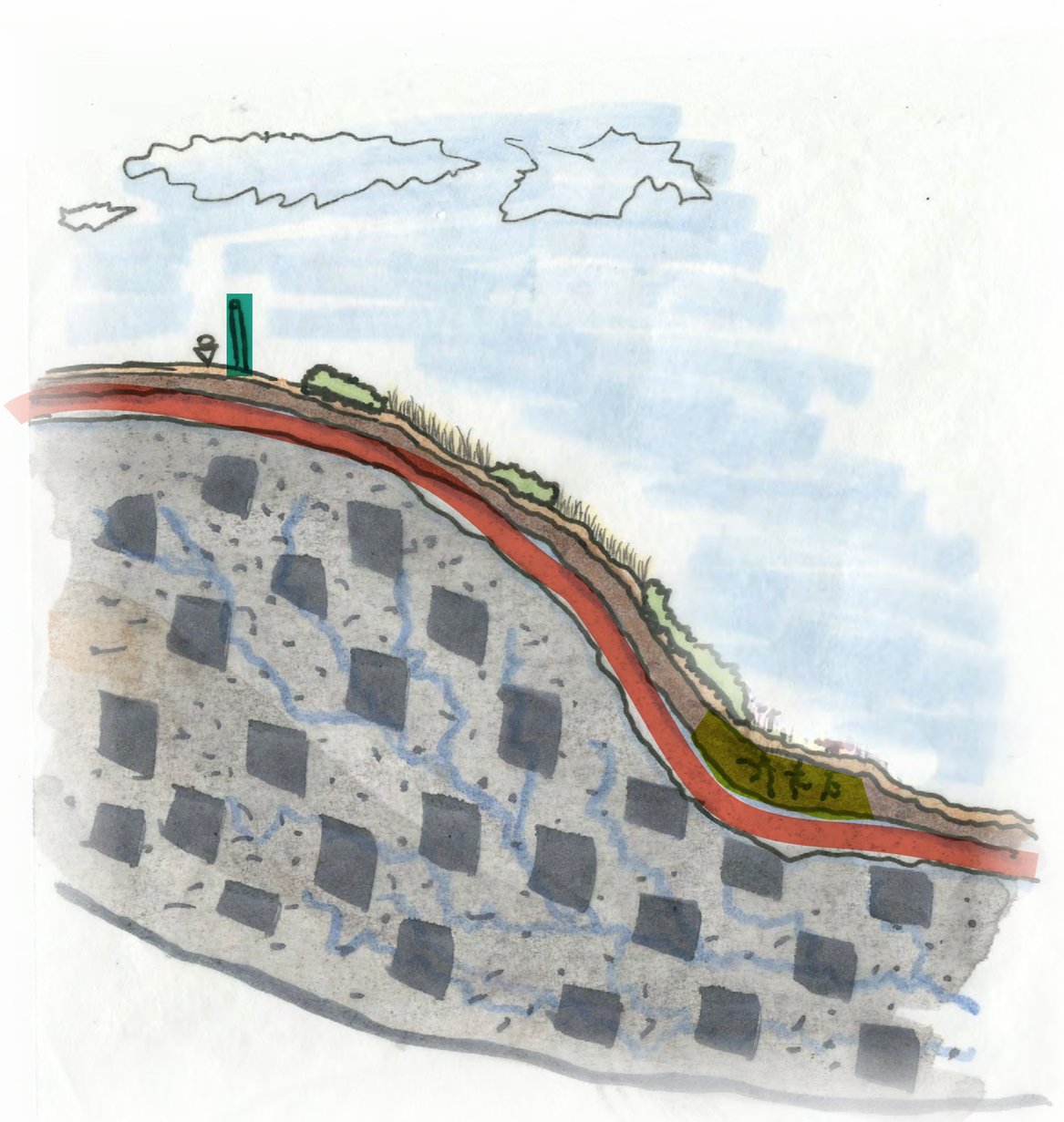
Research Results

Site Concerns

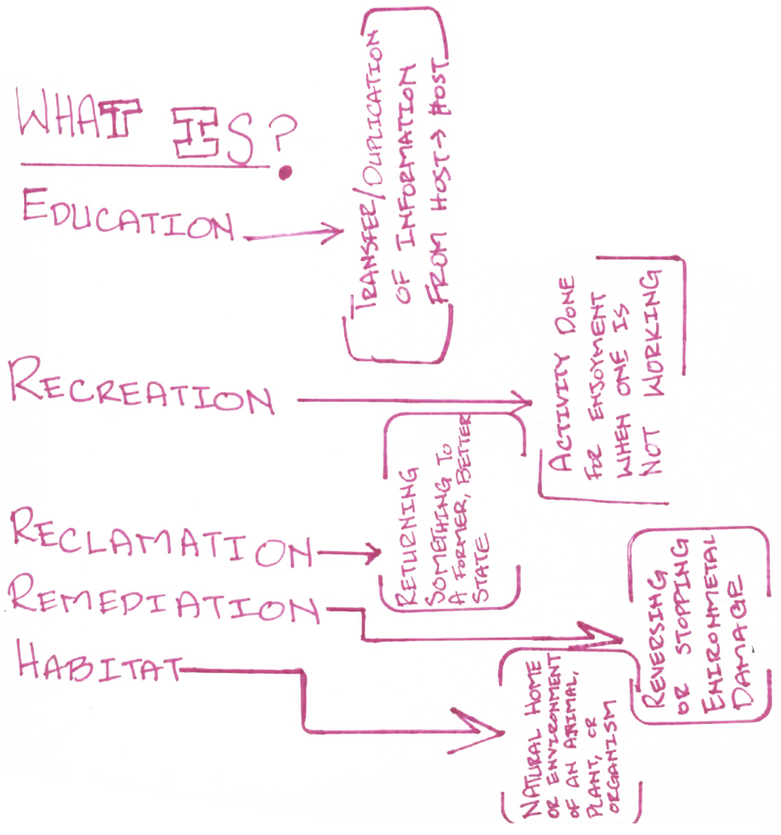
Landfill Smell

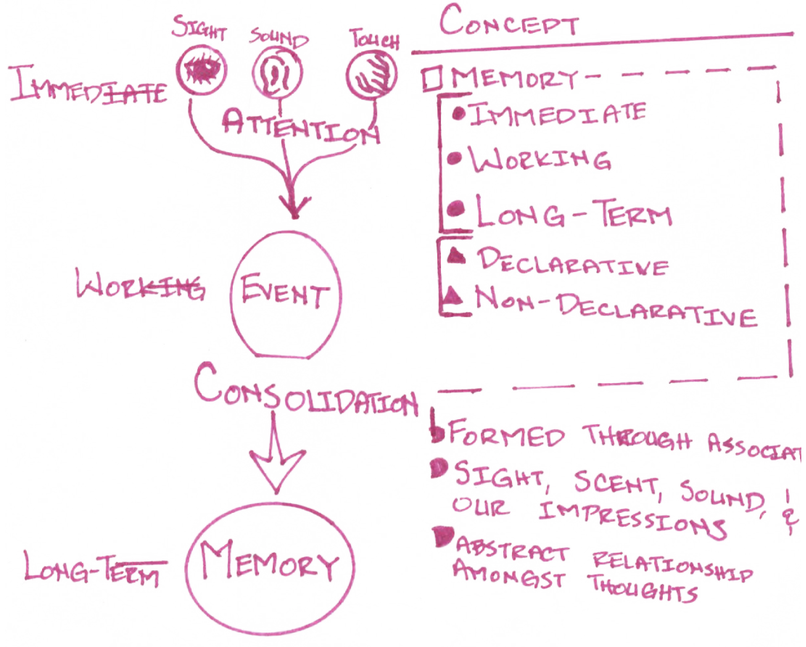
Site Safety

Vegetation Planting



Design Goals

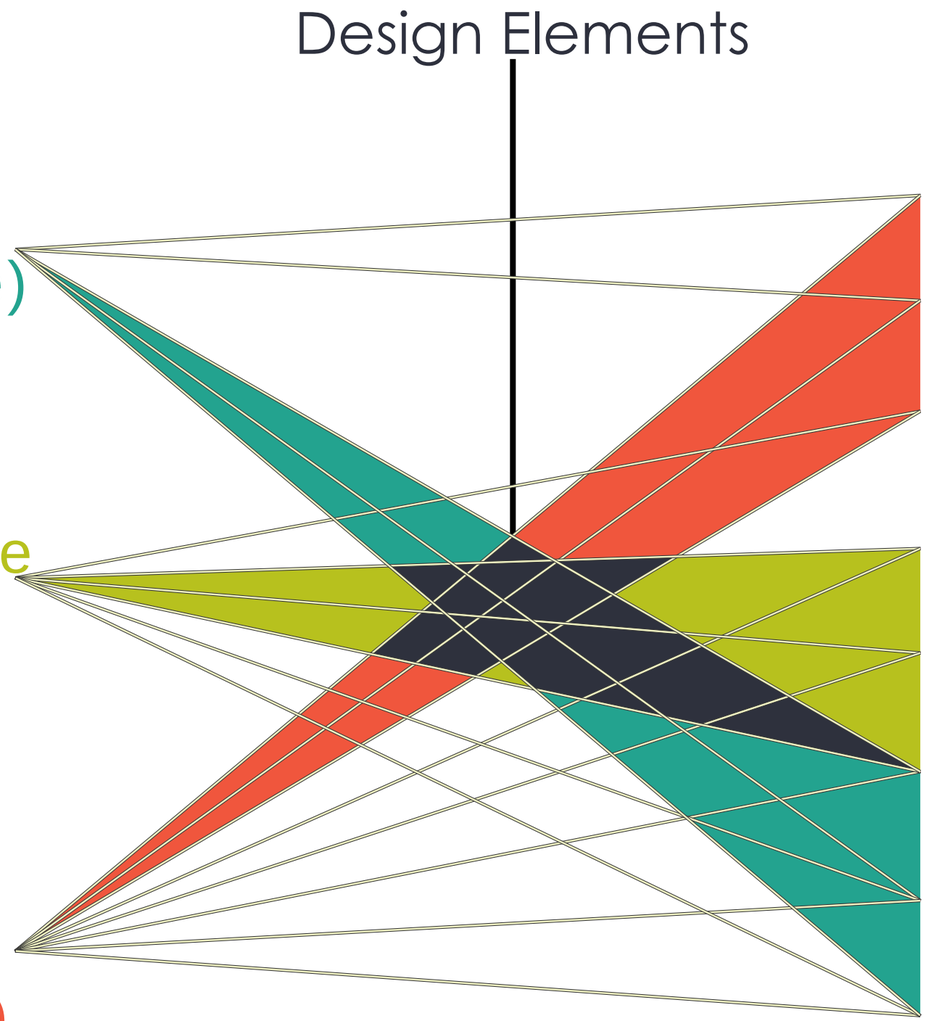




Design Goals

Concept Elements

Program Elements



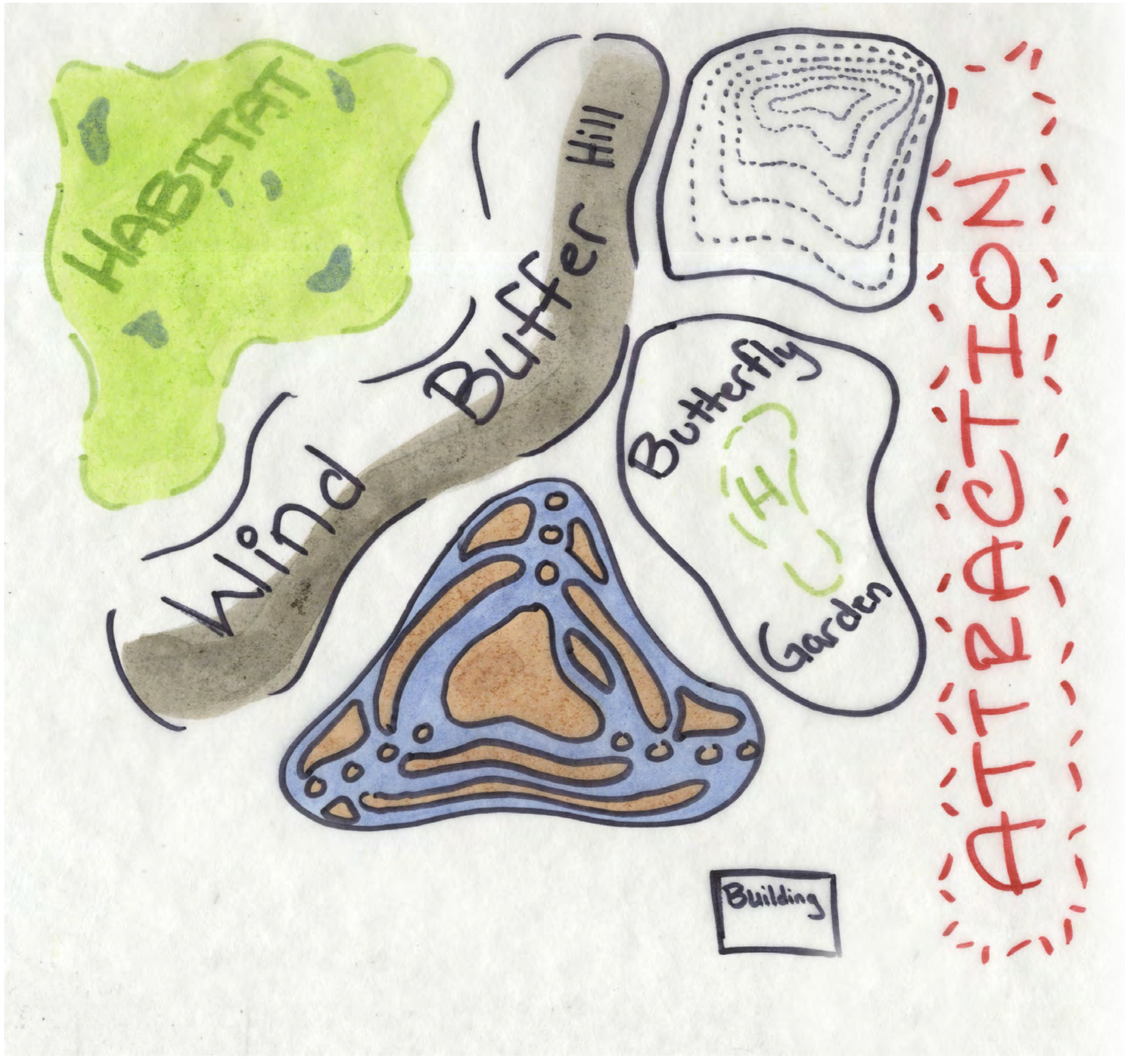
Design Elements

A re-morial makes a spectacle of a current issue committing it.

Habitational Winter
Sports Hill

Byproduct Management
Sculptures

Interactive Outdoor
Sculpture Classrooms

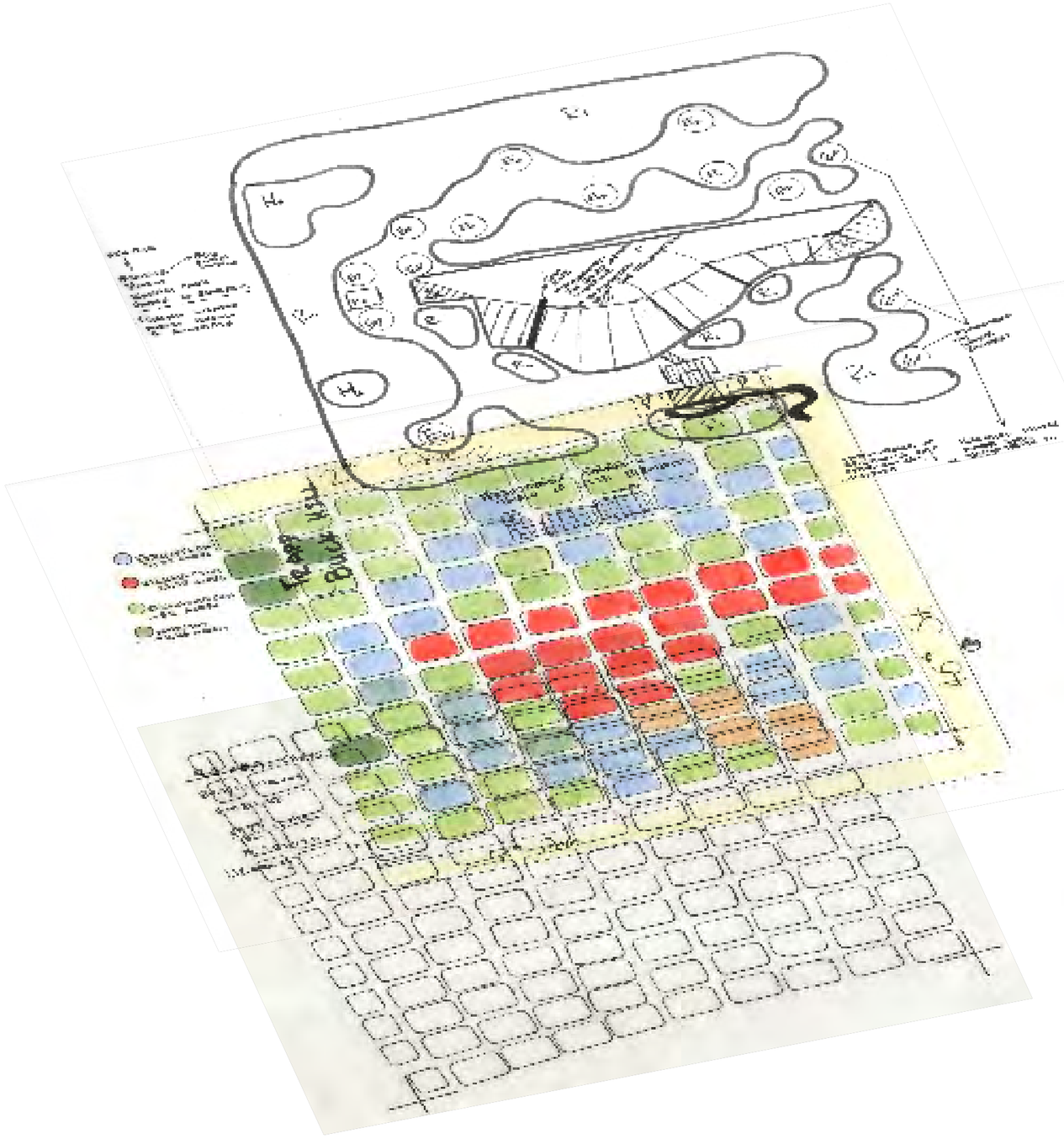


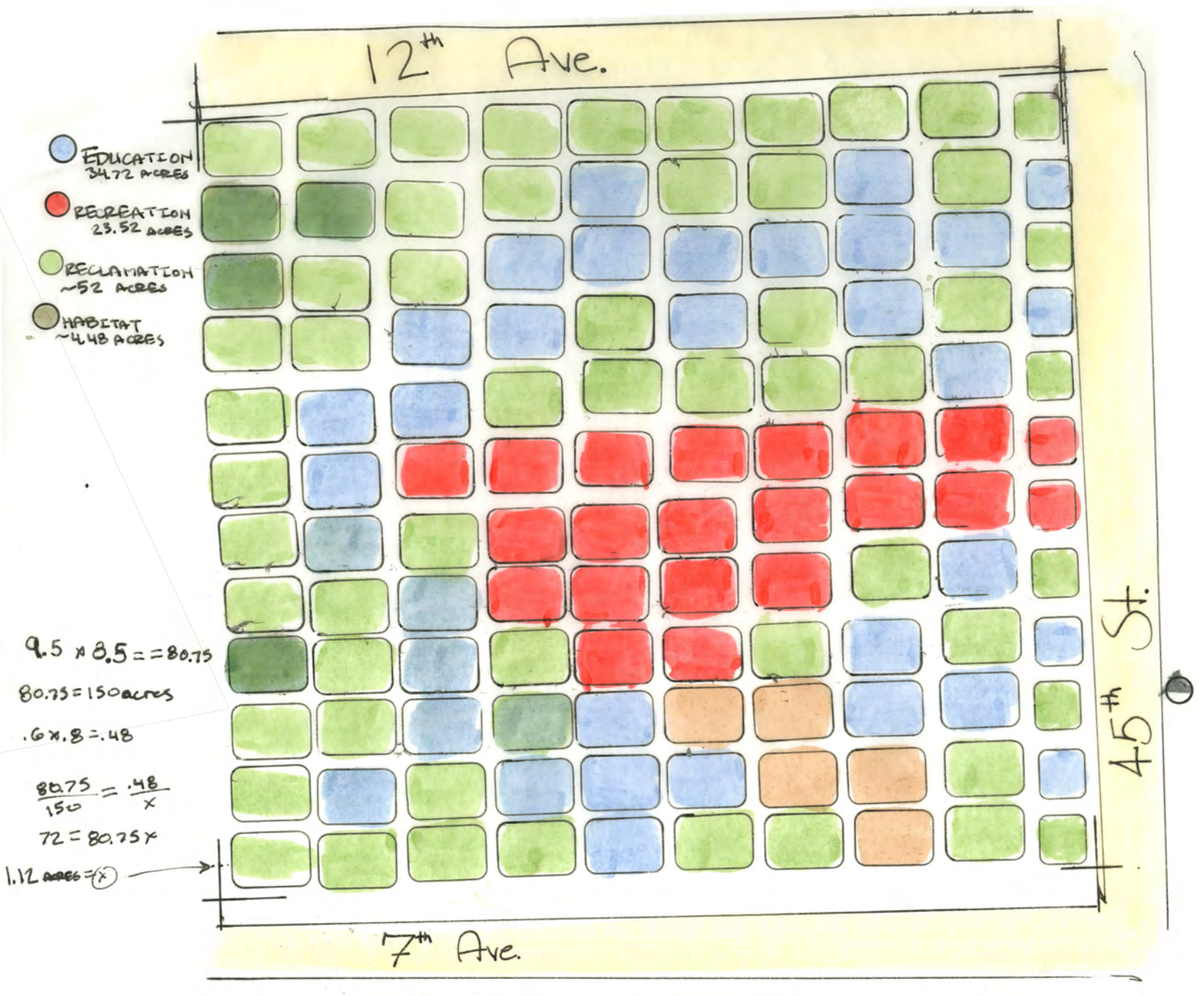
Design Elements

Plant List

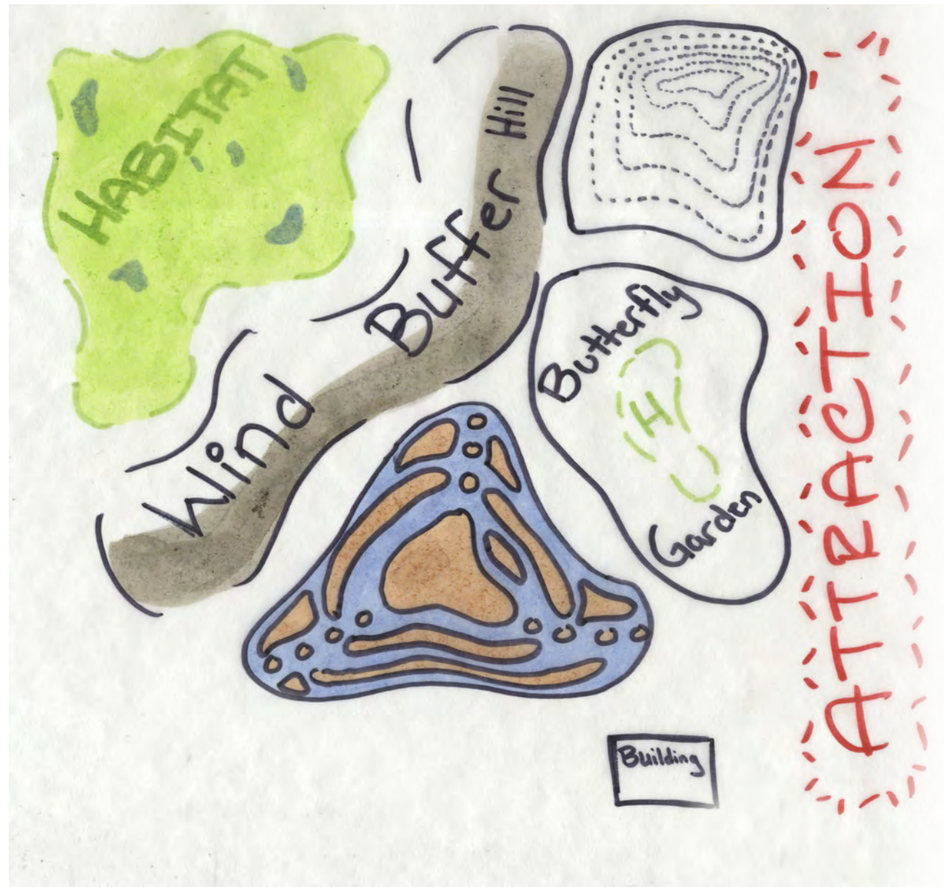
- Trees
  - Freeman & Silver Maple
  - Bur Oak
  - White Ash
  - Sitka Spruce
  - Douglas Fir
- Shrubs
  - Redosier Dogwood
  - Ninebark
  - Pacific Rhododendron
  - Red Elderberry
  - Snowberry
  - Evergreen Huckleberry
- Grasses
  - Big Bluestem
  - Switch Grass
  - Bottlebrush Grass

Site Programming

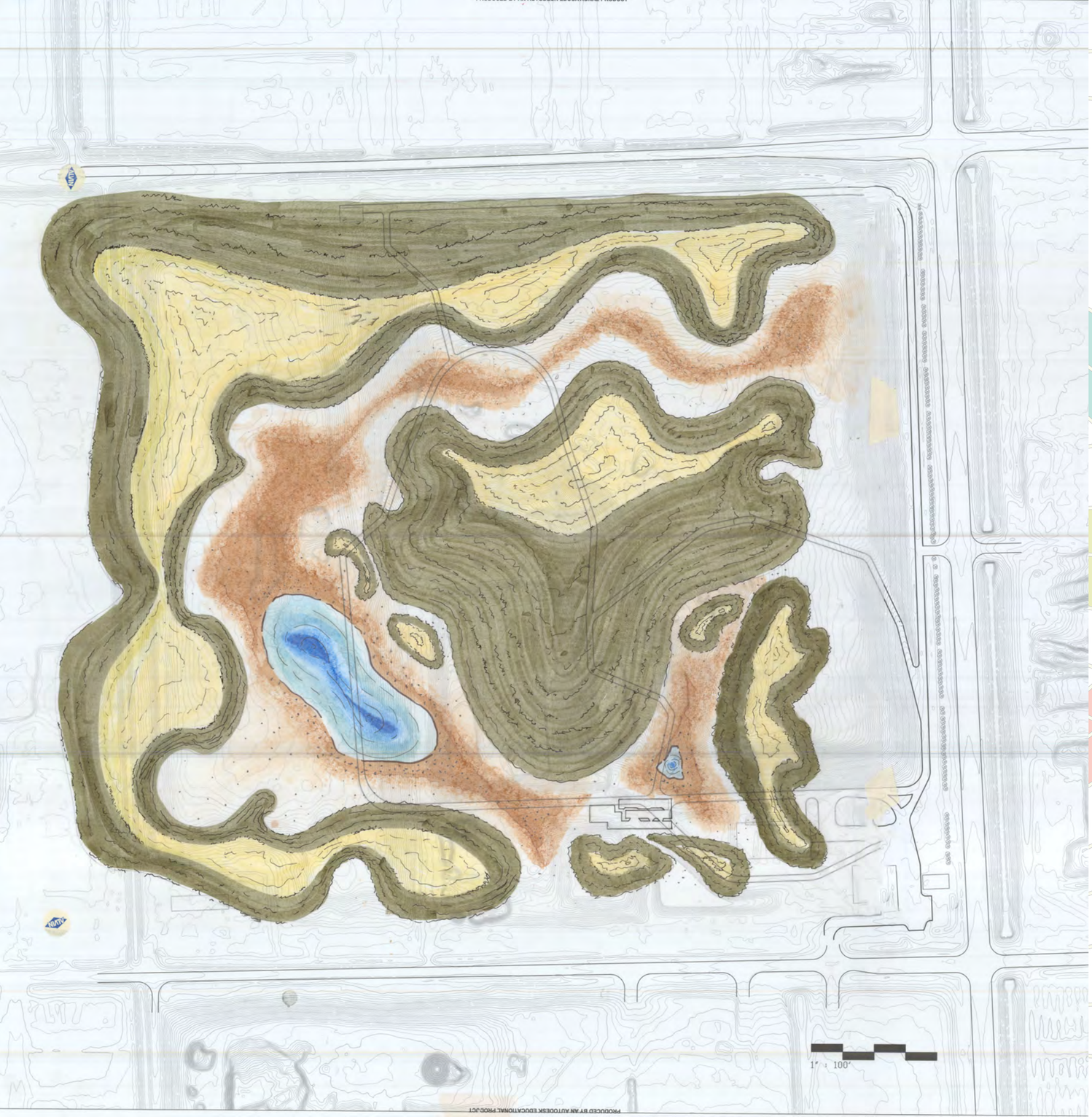




Design Elements



Concept



Master Plan
Walaker Park

Habitational Winter Sports Hill

Byproduct Management Sculptures

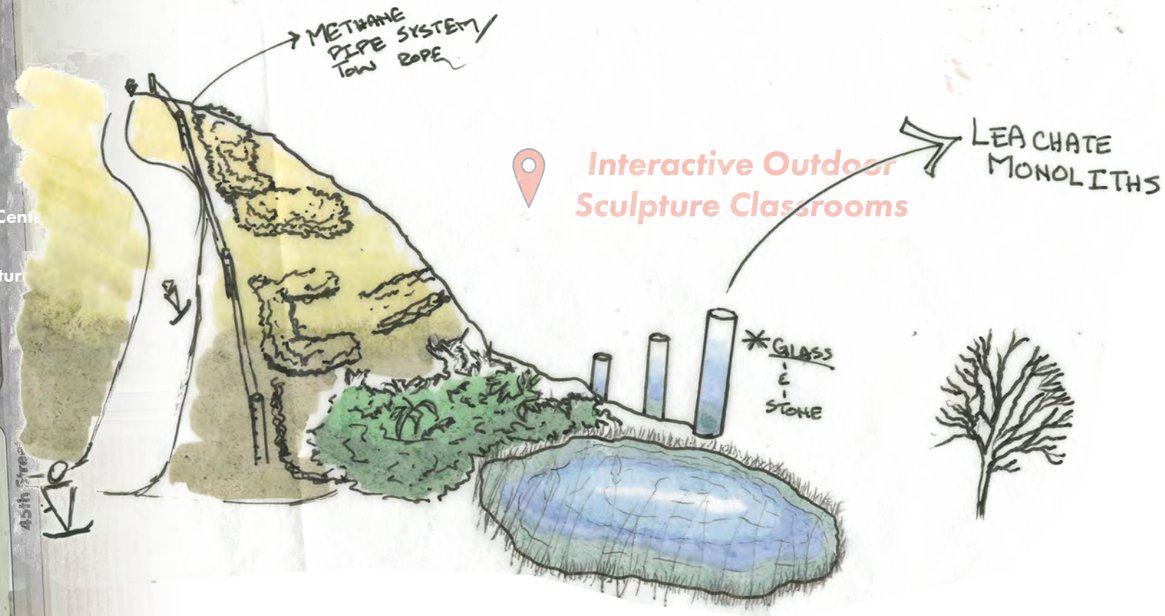
Interactive Outdoor Sculptures

Habitational Winter Sports Hill

Habitational Winter Sports Hill

Byproduct Management Sculptures

Interactive Outdoor Sculpture Classrooms



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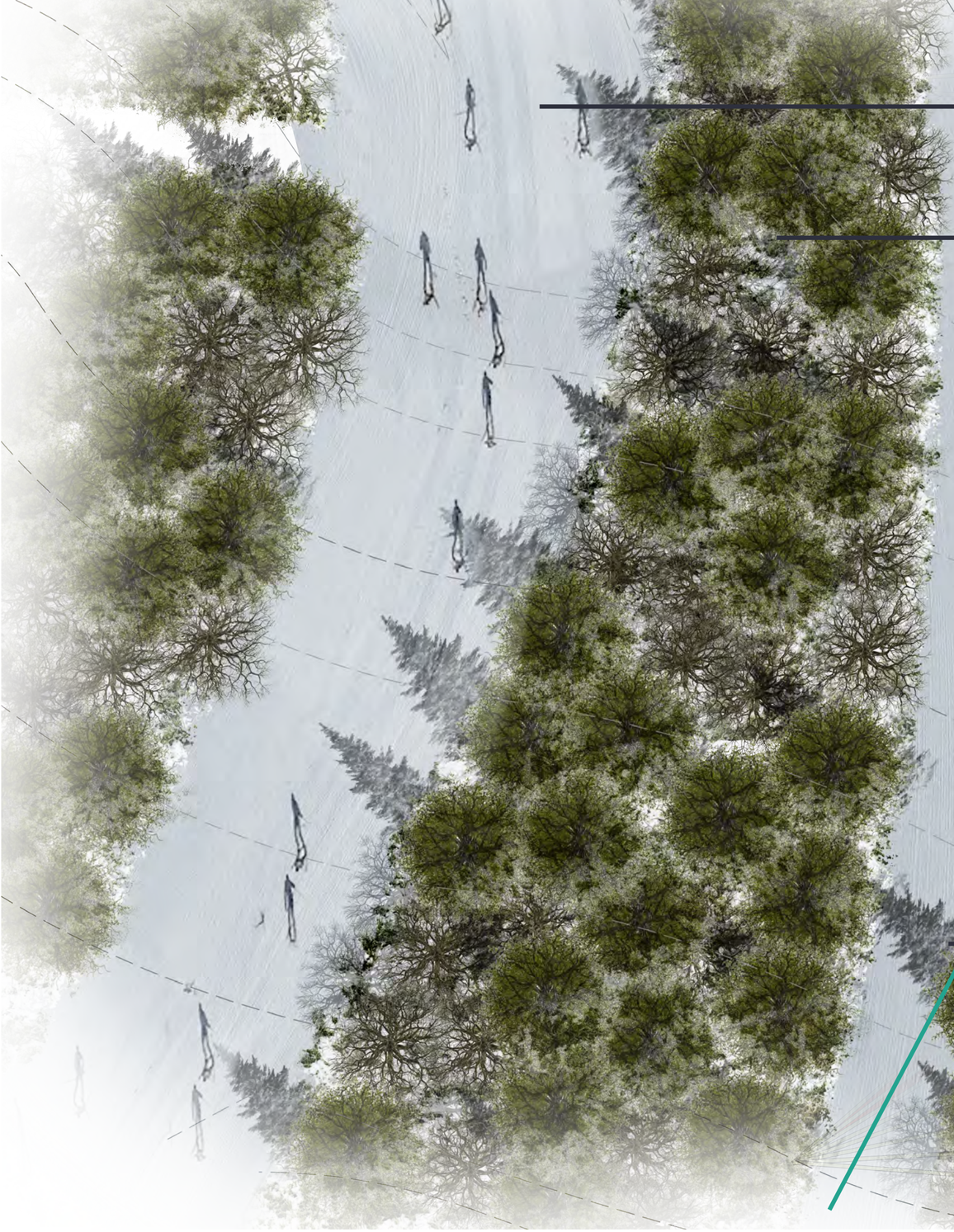
Habitational Winter Sports Hill



Ski Run

Coniferous Buffer

Methane Head/
Tow Rope

Tubing Hill

Bike Trail

N

Site Plan A

1":30"

Byproduct Management Sculptures

12th Avenue N.

12th Avenue N.

45th Street

Leachate System Maintenance

Bird & Insect Habitat

Faunal Pond

Snow-making Pond

Interactive Outdoor Classroom

Tubing Hill

Leachate Monuments

Renovated Community Center/ Warming Building

Sculpture Supply

Community Bike

7th Avenue N.

7th Avenue N.

45th Street

1" : 100'

N

Habitational Winter Sports Hill

Byproduct Management Sculptures

Interactive Outdoor Sculpture Classrooms

Reminder String Sculpture

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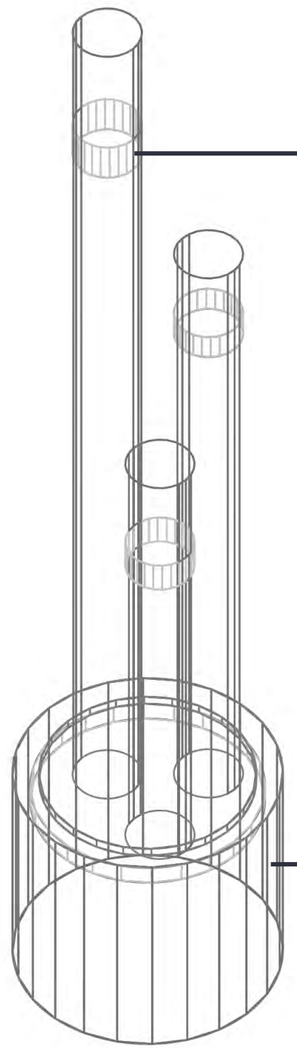
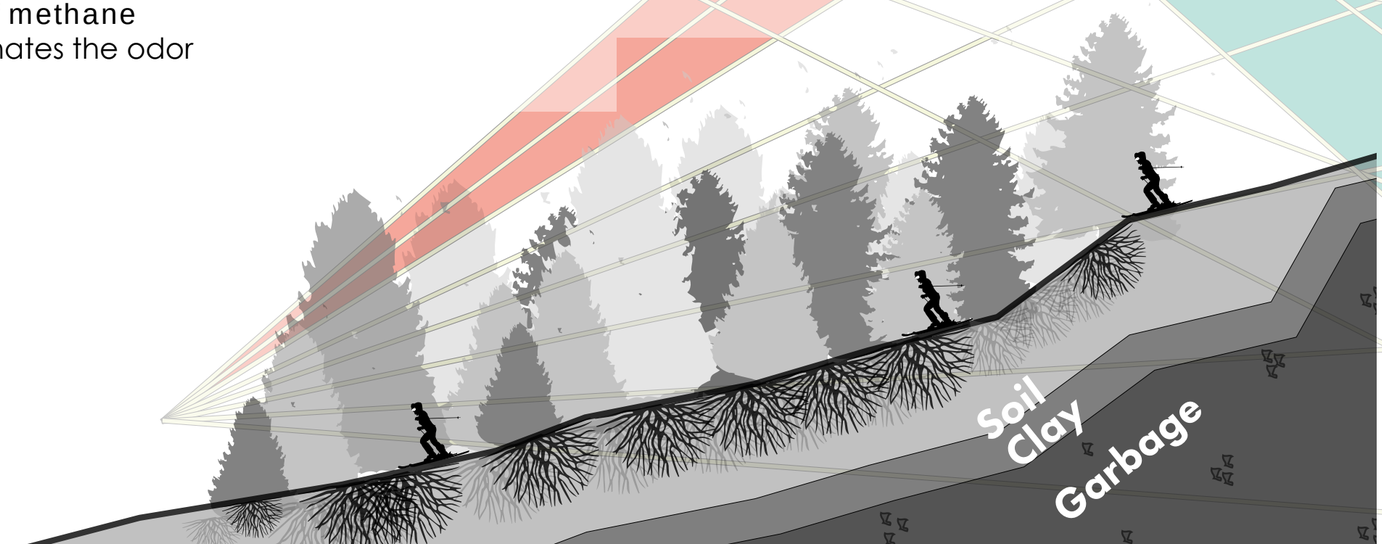
Byproduct Management Sculptures



Methane Heads

Methane pumps collect the natural gas formed in the landfill and indicate the amount of methane being produced by the waste.
They also act as the tow-rope system winter sport athletes back from the summit.

Sledding Hill/Biking Trail



Large vegetative masses are possible because of the 3' clay membrane separating refuse from plant roots.

The clay membrane also keeps methane from surfacing eliminating the odor associated with the landfill.

Interactive Sculpture Classroom

12th Avenue N.

12th Avenue N.

Leachate System Maintenance

45th Street

Bird & Insect Habitat

Leachate Monument

Tubing Hill

Faunal Pond

Snow-making Pond

Interactive Outdoor Classroom

Renovated Community Center/ Warming Building

Sculpture Supply

Community Bike

7th Avenue N.

7th Avenue N.

45th Street

1" : 100'

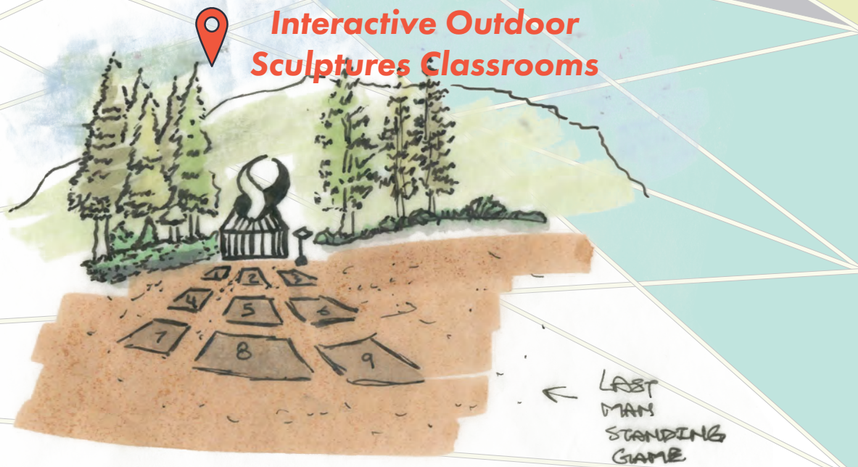
N

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

Habitational Winter Sports Hill

Byproduct Management Sculptures

Interactive Outdoor Sculptures Classrooms



Interactive Sculpture Classroom

Snow-making Pond

Flagstone Path

Sculpture Piece

Outdoor Classroom

Natural Trail Beginning

N

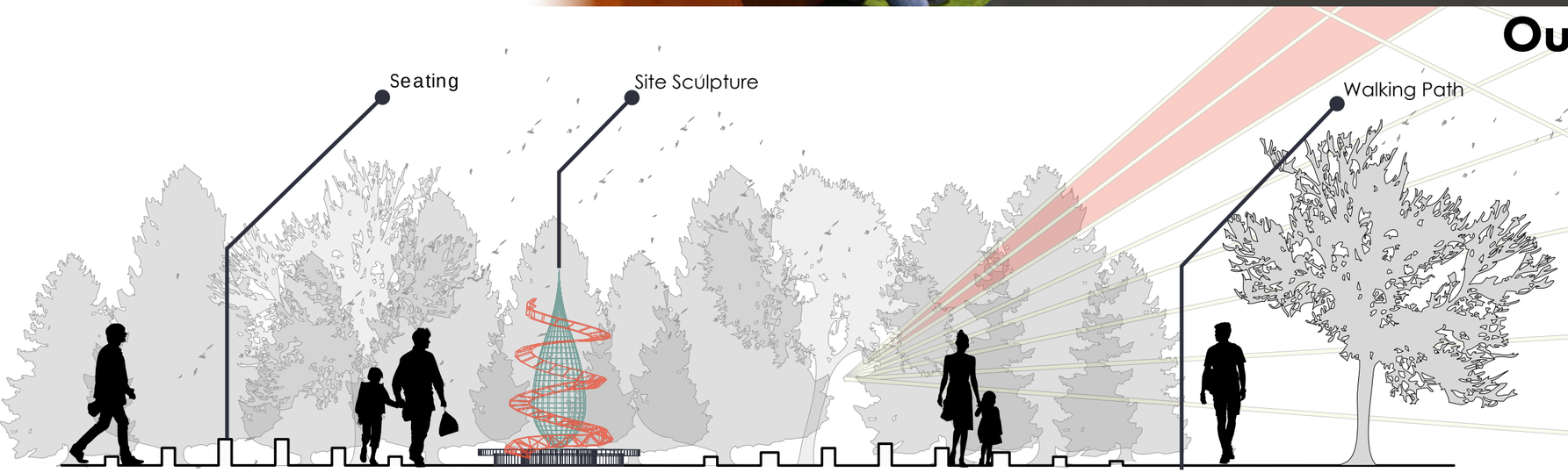
Site Plan C

1":30'

Interactive Sculpture Classroom

This space is designed for local schools which could use the space when learning about recycling and sustainability during their elementary school curriculum. The space is also the introduction to the site trails which are used by pedestrians and bicyclists.

Outdoor Classroom Perspective



Byproduct Management Sculptures

12th Avenue N.

12th Avenue N.

45th Street

Leachate System Maintenance

Bird & Insect Habitat

Faunal Pond

Snow-making Pond

Interactive Outdoor Classroom

Leachate Monument

Tubing Hill

Renovated Community Center/ Warming Building

Community Bike

7th Avenue N.

7th Avenue N.

45th

1" : 100'

N

Habitational Winter Sports Hill

Byproduct Management Sculptures

Interactive Outdoor Sculptures

METHANE PIPE SYSTEM / TOW ROPE

LEACHATE MONOLITHS

*GLASS & STONE

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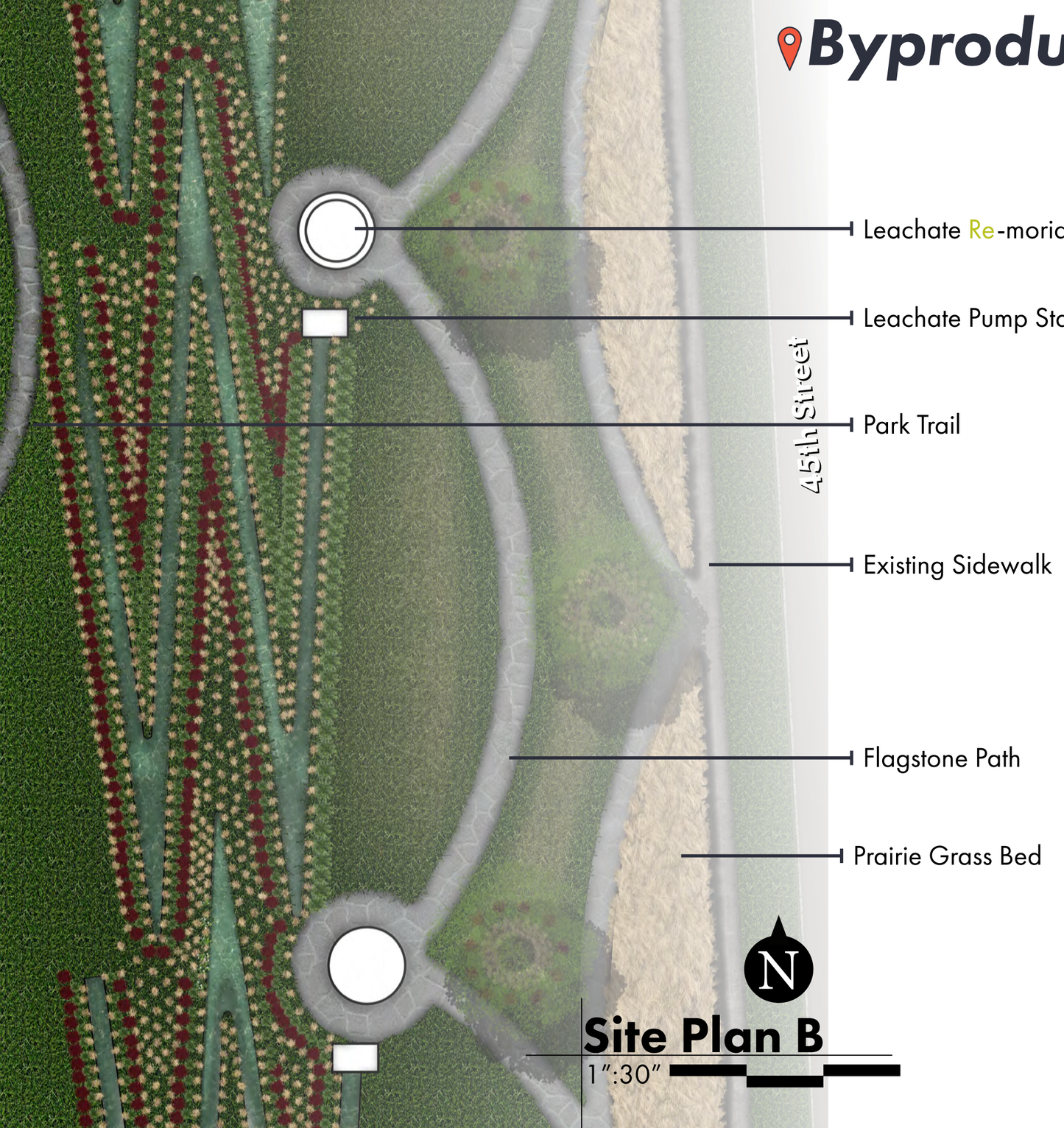
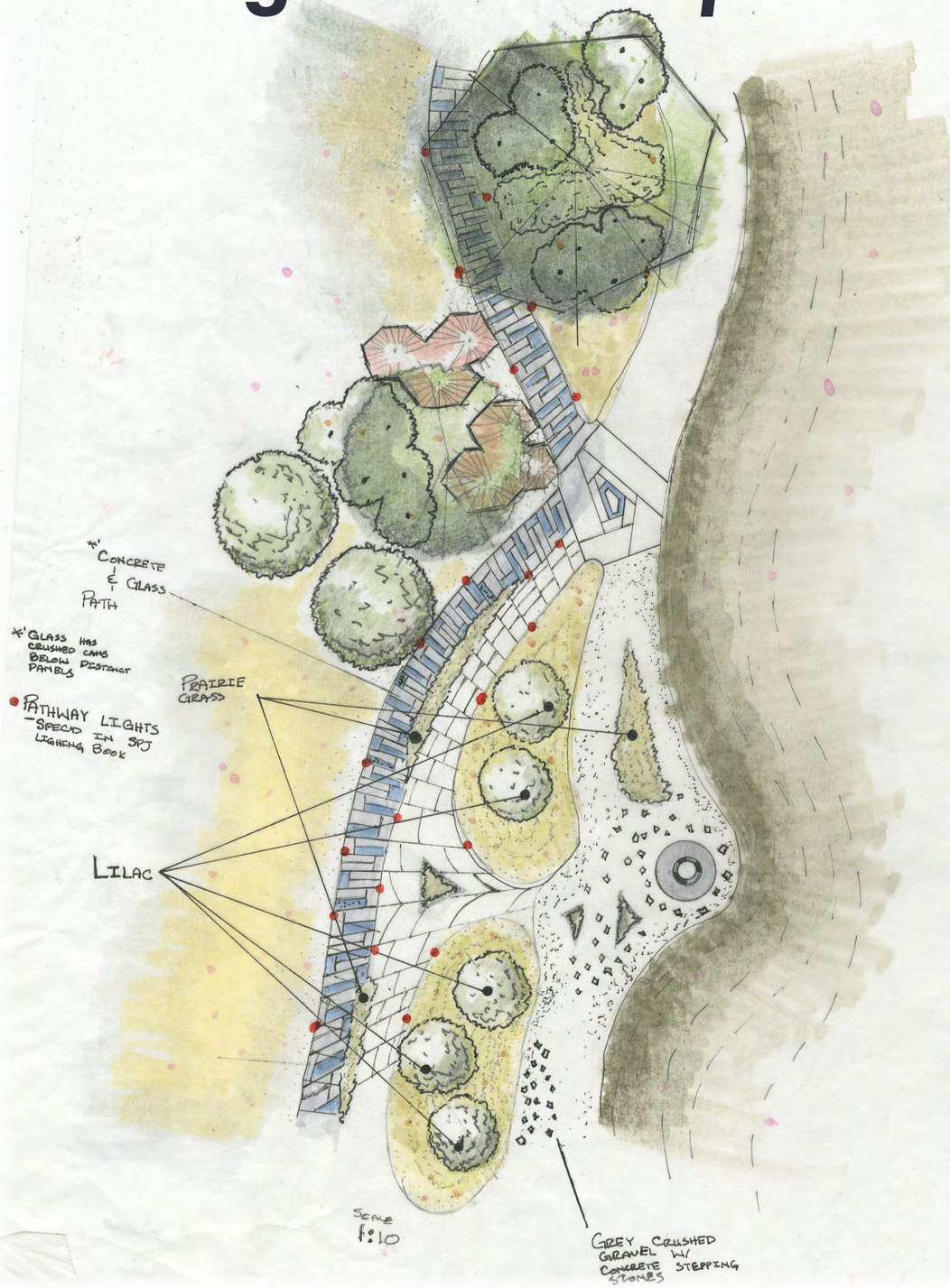
Byproduct Management Sculptures

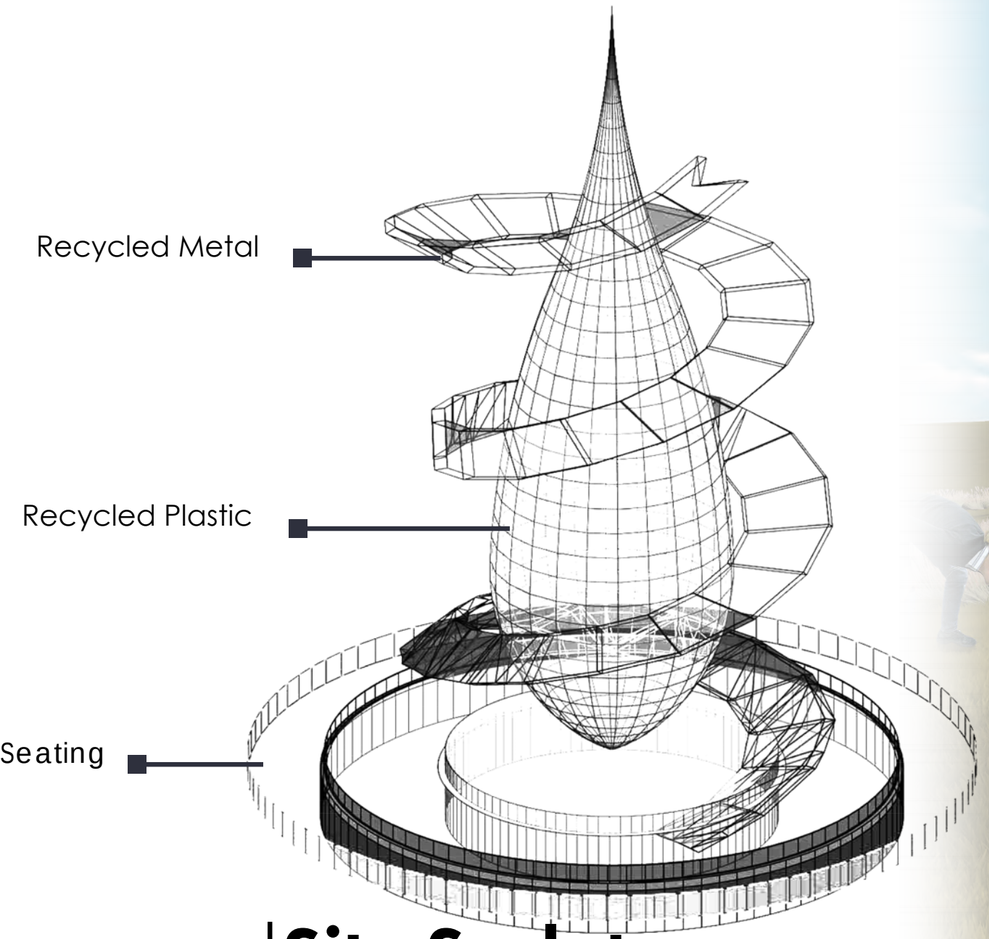


Site Plan B

1":30"



Byproduct Management Sculptures



Site Sculptures

The sculptures symbolize the act of remembrance that park attempts to stimulate. They are constructed using recycled materials from the landfill to remind site users of the potential

"Memory does not equal preservation but instead has a transient quality. It implies a re-representation or understanding of the past, as memories constantly shift and change as one experiences life. The memory of a site should be used as a design strategy, as it shows depth and a process of connection." - Peter Latz

'Architecture has to have the element of time. Design will always be as perfect as it was conceived. Though the facade may fade away, the spirituality will remain.'
- I.M. Pei

Through this thesis design I have created a space that educates community members of current waste management issues. By taking a our landfill and reclaiming the space, morphing it into a re-morial I hope to inspire Fargo-Moorhead citizens to make cleaner choices which will in tern impact the world.

Landfill Re-morial

making a spectacle

of these current issues

to commit it memory.