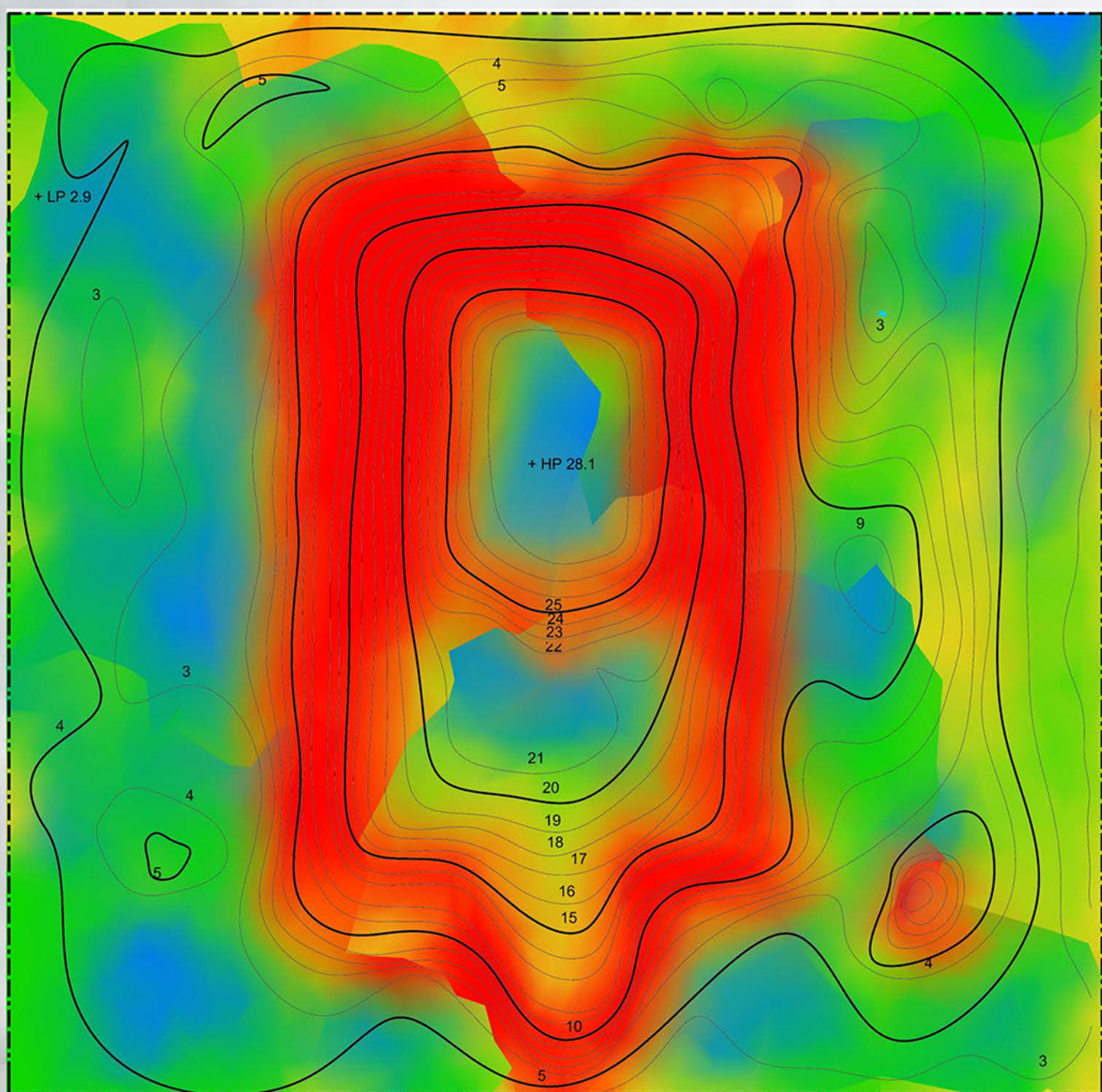
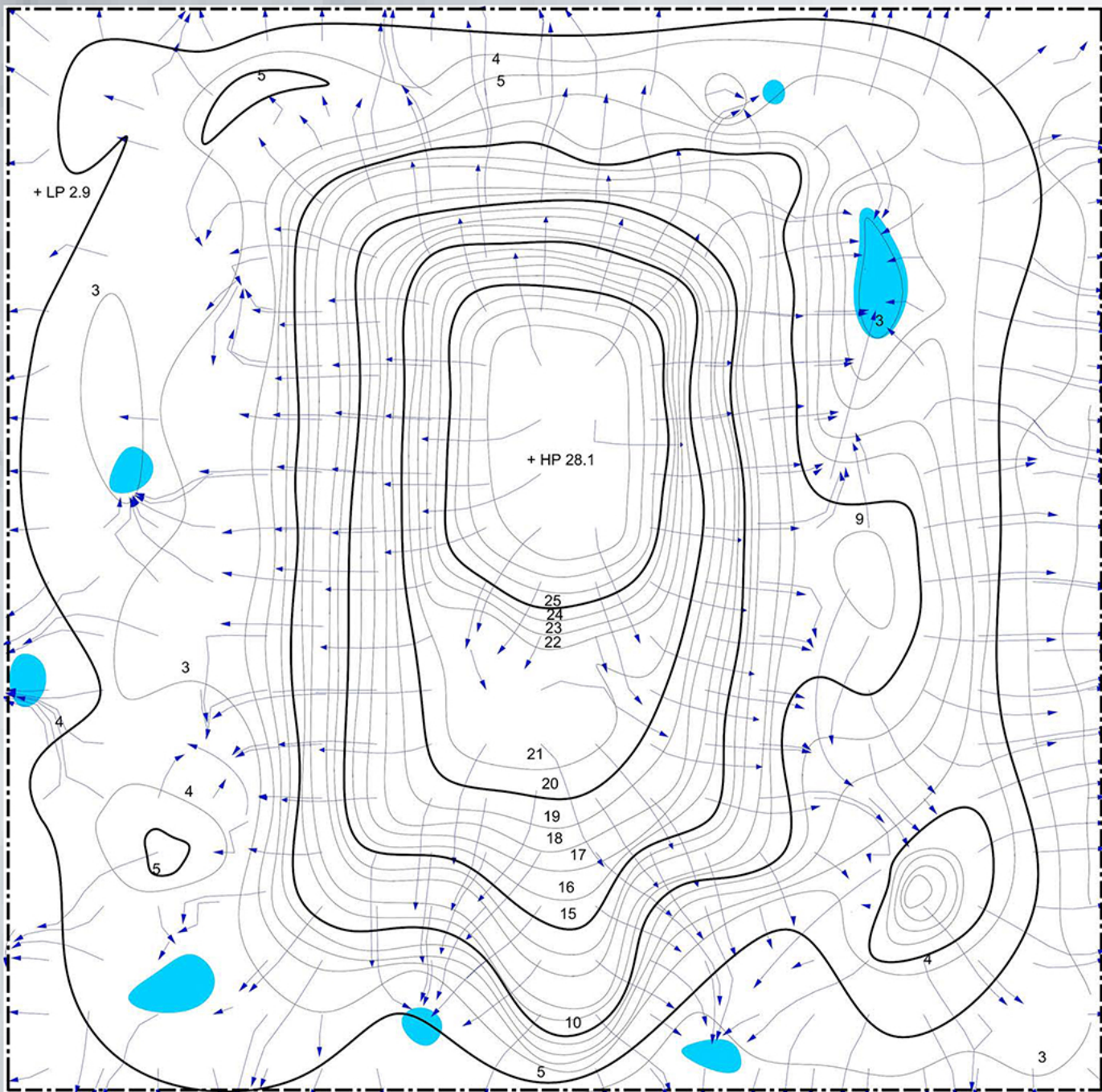
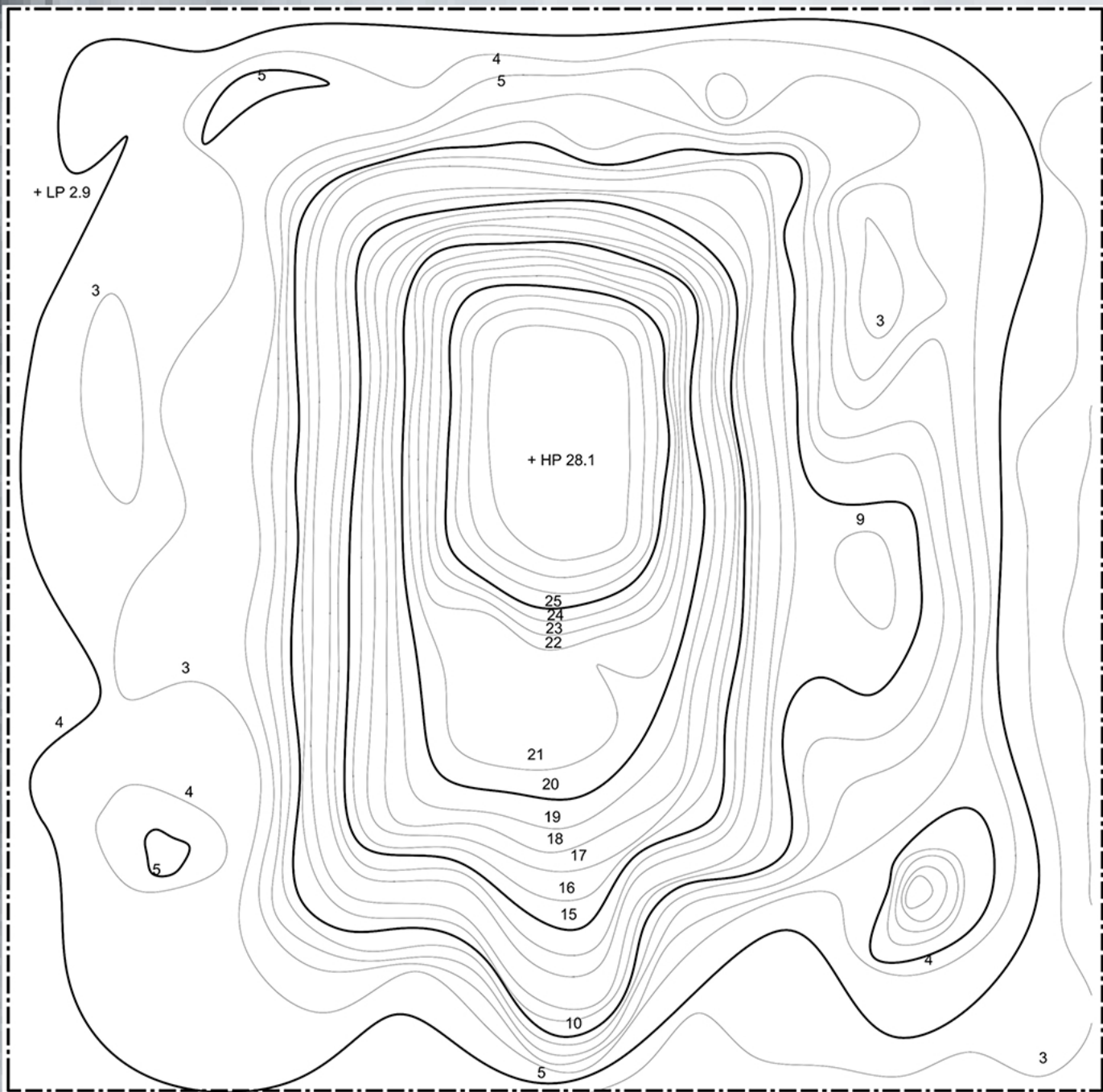
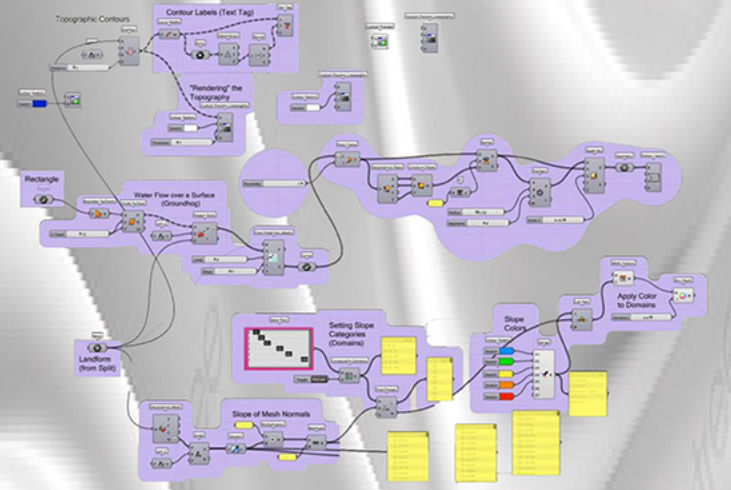


EFFIGY MOUNDS

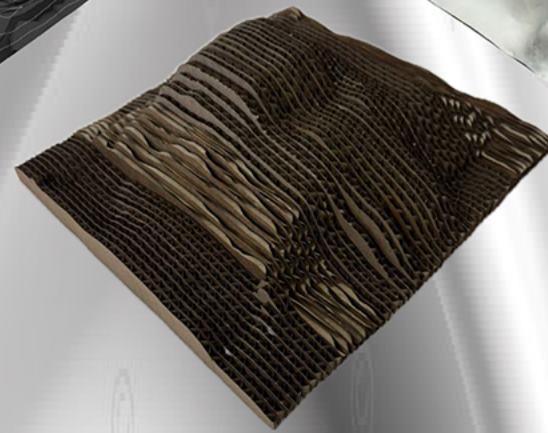


TOPOGRAPHY

I began by creating a basic clay model of Monks Mound to capture its overall shape. After refining the model, I scanned it using Polycam to produce a digital version. I then imported this OBJ file into Rhino and used a loft tool to generate a smooth surface that follows the mound's natural curves. In Grasshopper, I added contour lines at one-foot intervals to clearly show the mound's shape and structure.



3D RENDER



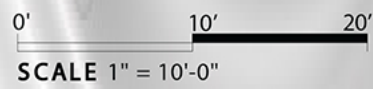
LASER CUT MODEL



CLAY MODEL



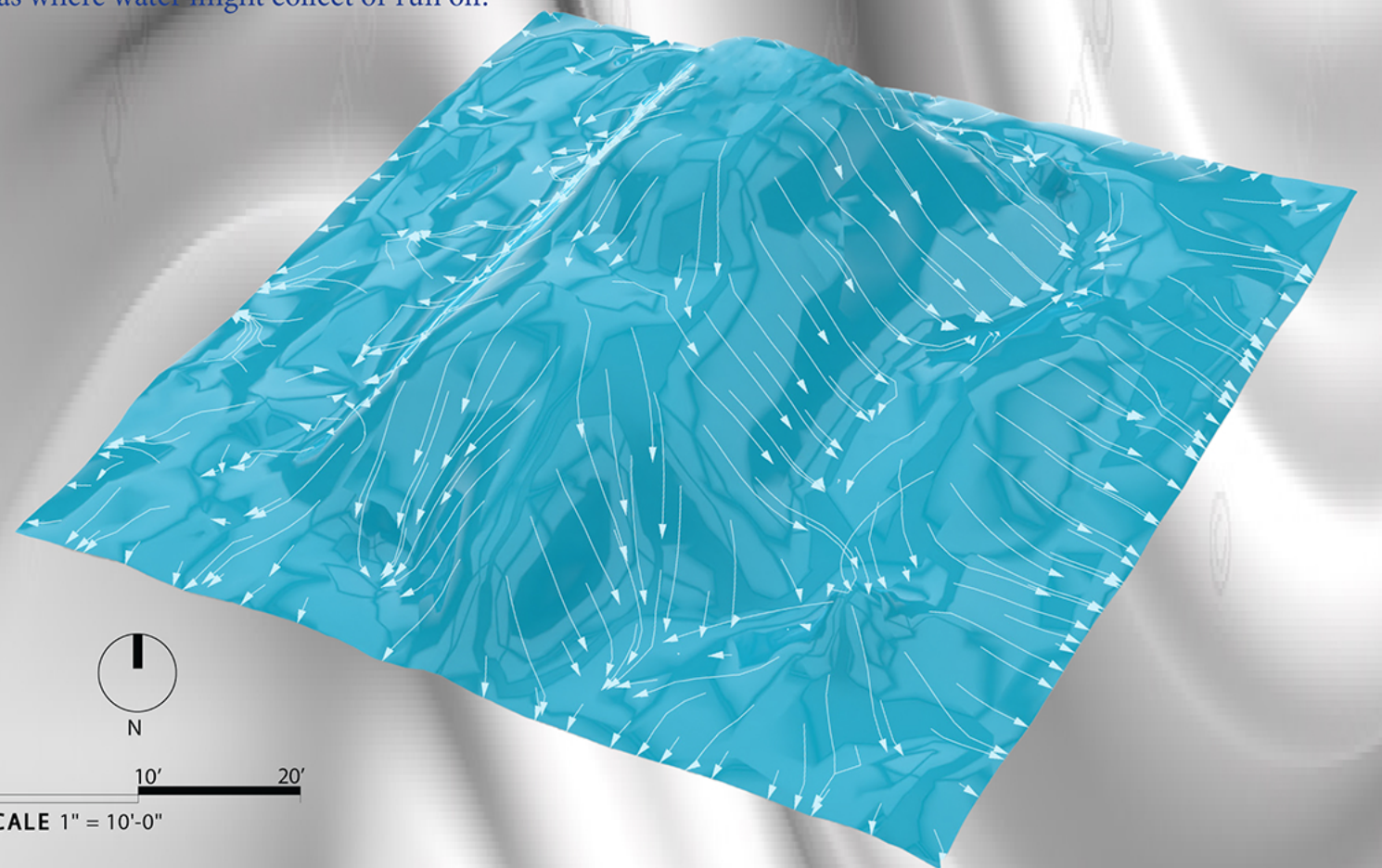
10'



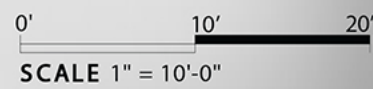
SCALE 1" = 10'-0"

HYDROLOGY

To understand how water moves over Monks Mound, I used Grasshopper with the Groundhog extension. This tool generated simple flow lines that indicate where water would travel on the mound's surface. I cleaned up these flow lines in Rhino and added arrows to show the direction of water movement. This hydrology map makes it easier to see areas where water might collect or run off.



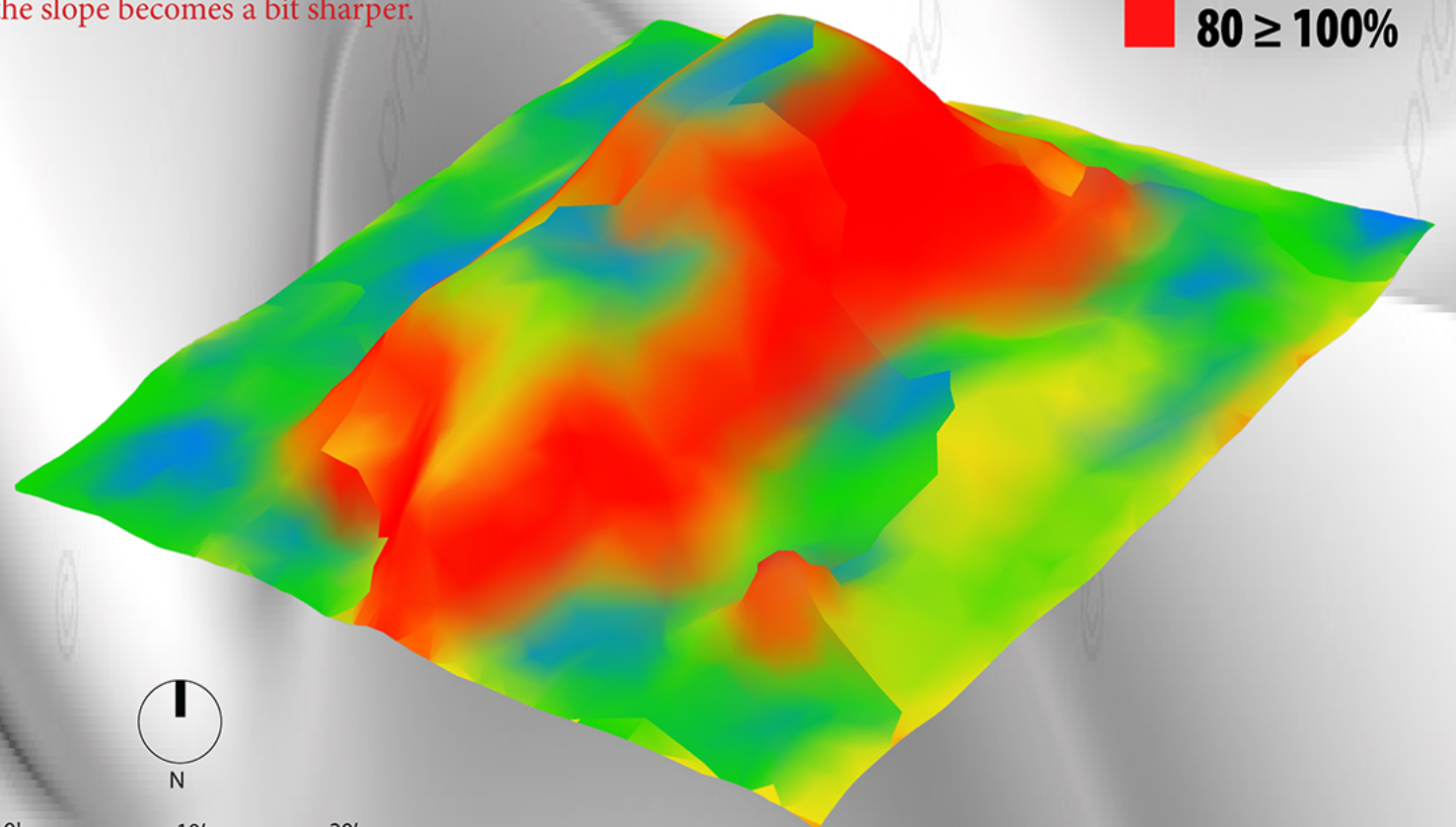
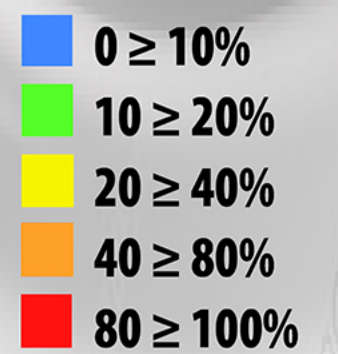
10'



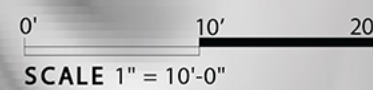
SCALE 1" = 10'-0"

SLOPE ANALYSIS

I created a slope map of Monks Mound in Rhinoceros using Grasshopper. The map shows that most of the mound has a gentle slope with only a few steeper sections along its edges. I applied a color gradient to the slope map so that the slight changes in elevation are easy to see. This visual helps explain the gentle overall shape of the mound and highlights where the slope becomes a bit sharper.



10



SCALE 1" = 10'-0"

WENCESLAO CAMPOS	LA 241	WINTER 2025	BRET BETNAR
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CLIMATE POSITIVE DESIGN/STORMWATER

TABLE OF CONTENTS

L 100: FINAL CONCEPTUAL DESIGN PLAN

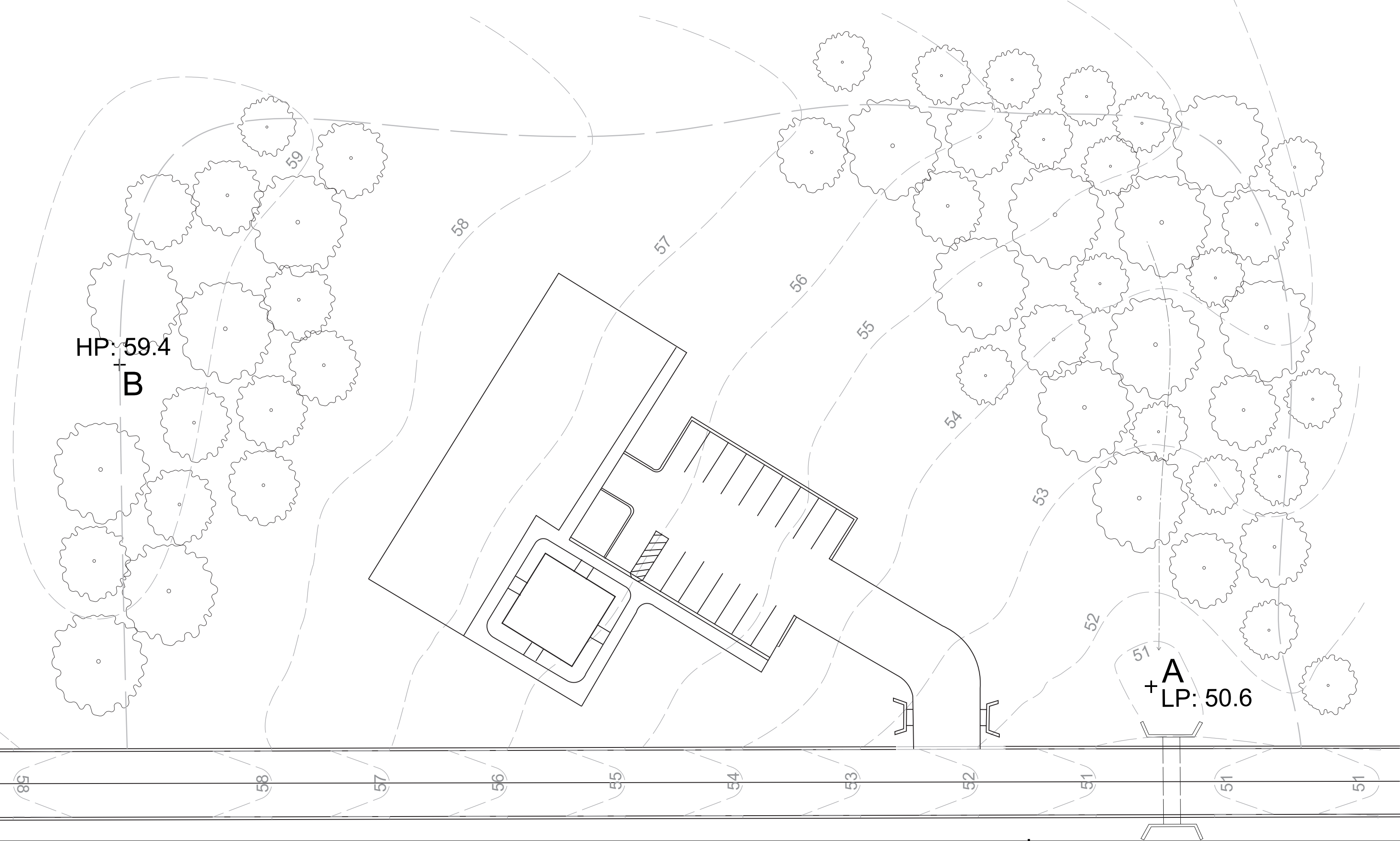
L 102: MOOD BOARD

L 200: FINAL CONCEPTUAL GRADING + DRAINAGE PLAN

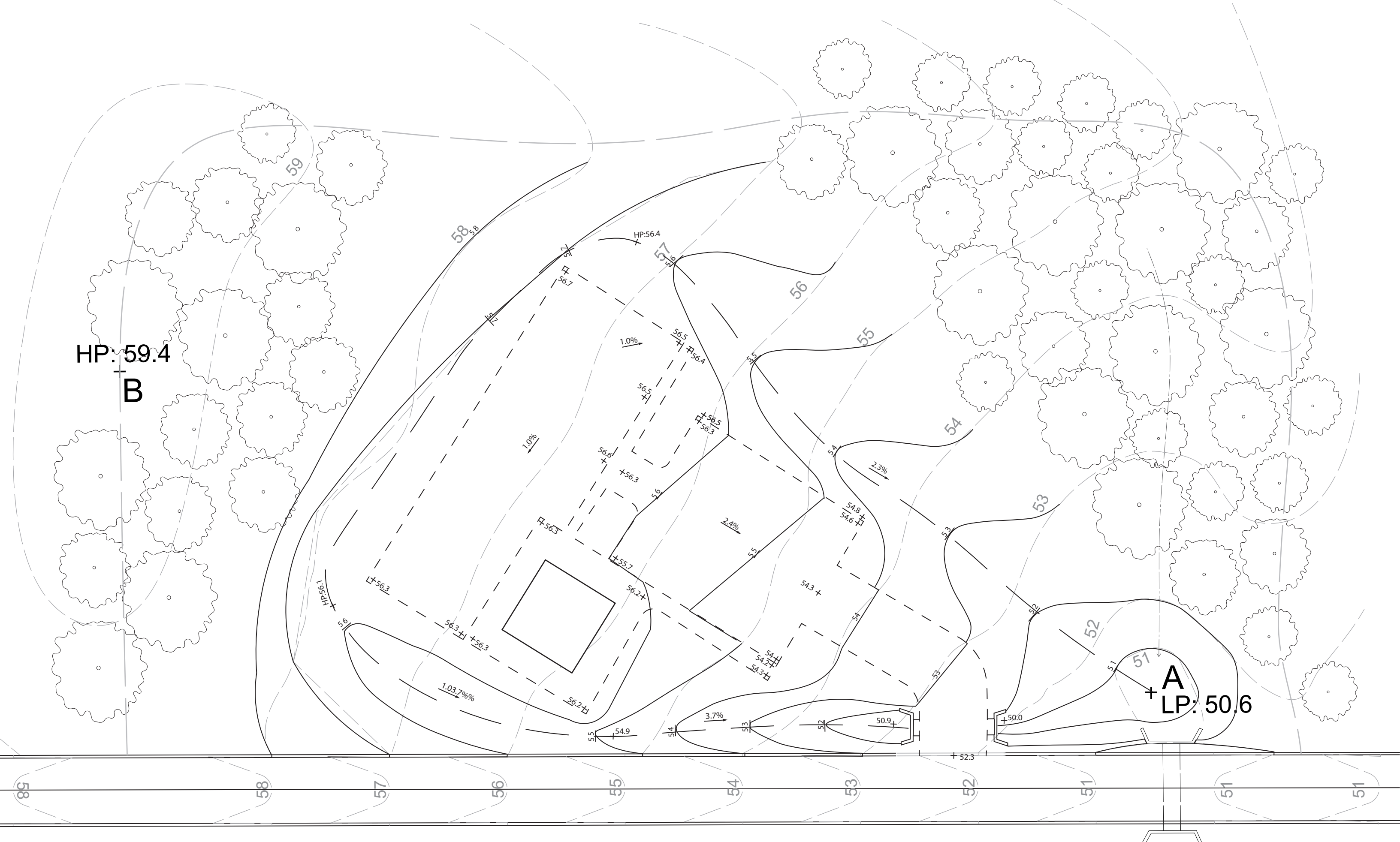
L 300: FINAL CONCEPTUAL PLANTING PLAN

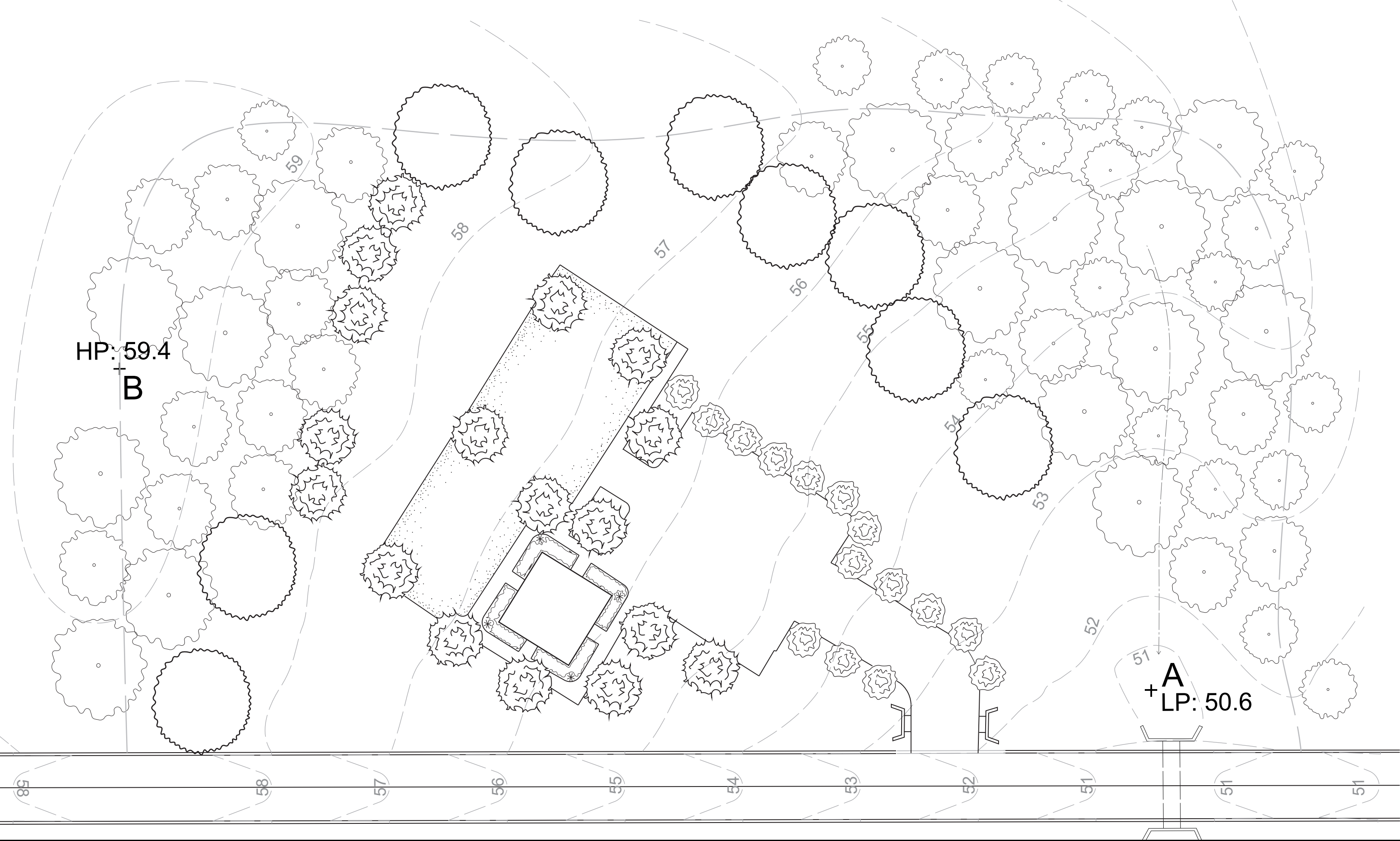
L 400: CLIMATE POSITIVE DESIGN

L 401: STORMWATER CALCULATIONS









FINAL DESIGN CALCULATIONS

MATERIALS

Materials	Square Feet	Depth (Inches)	Impact (KG CO2e)
wood pergola	900	NA	748
drain rock	6,240	6	1,941
Compacted aggregate base	6,240	6	2,086
Compacted aggregate base	1,390	6	465
asphalt paving	4,200	4	5,307
Compacted aggregate base	4,200	6	1,404
Cast-in-place concrete paving	900	6	6,892
Welded wire mesh (fabric)reinforcement	900	3	104
Cast-in-place concrete paving	1,390	4	7,097
Organic mulch	425	3	306
TOTAL: 26,349 KG CO2e			

PLANTS

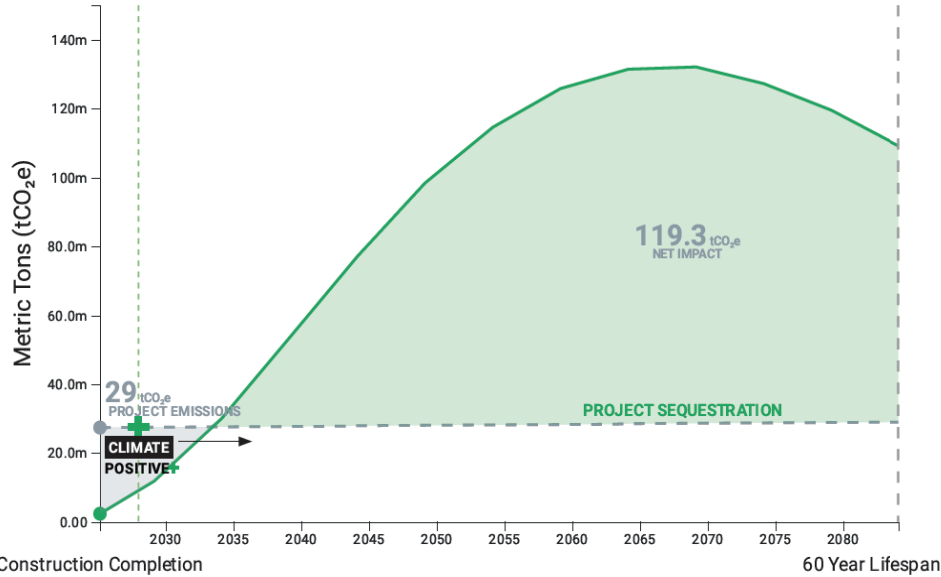
Plants	Quantity	Impact (KG CO2e)
Deciduous large trees	17	65,075
Deciduous medium trees	15	25,960
Evergreen small trees	8	785
Deciduous large trees	25	5,830
Evergreen small shrub	28	130
Deciduous medium shrub	25	2,905
Evergreen large trees	10	8,465
TOTAL: 146,955 KG CO2e		

Explanation

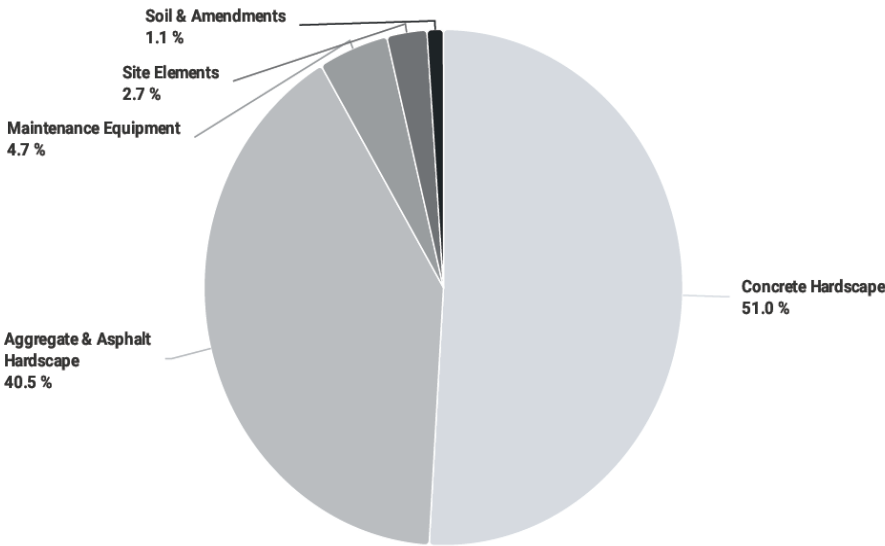
This diagram and the calculations result from my design for the created park. In my parked design, it is very compacted to use the least amount of material that is not natural to the earth. All the hardscape materials that I used in my design are harsh in carbon, but I was able to balance the carbon to three years to positive. To lessen the number of years it was taking for carbon to reach positive, I added a lot of big trees to the existing forest and added a lot more shrubs and trees to the park it self and around the sawed.



Project Impact 3 years to positive



Project Emissions



Time of concentration

K	Surface Type (Copy if necessary)	N	Average Slope (S)	Length (L)	Tc (Subtotal)
0.828	Dense Woodland	0.80	2.10%	73	14
0.828	Dense Woodland	0.80	3.30%	60	11
0.828	Deciduous Forest	0.60			0
0.828	Deciduous Forest	0.60			0
0.828	Pasture, average grass	0.40	1.70%	106	12
0.828	Pasture, average grass	0.40			0
0.828	Poor grass, cultivated crops	0.20	2.40%	70	7
0.828	Poor grass, cultivated crops	0.20			0
0.828	Smooth, bare, packed soil	0.10	1.20%	20	3
0.828	Smooth, bare, packed soil	0.10	2.40%	70	5
0.828	Pavement	0.02	2.40%	70	2
0.828	Pavement	0.02	1.00%	198	5
					59
					Tc (TOTAL)

DESIGN STORM SIZE (I)

See Existing Conditions to change.

100 year
Storm Event

If complete already, do not load PF Intensity again.

1.56

intensity (I)

Peak Runoff Rate (PROPOSED)

q = 1.22 cubic feet per second (cfs)

Crititcal storage volume

REQUIRED STORAGE
(For Design Storm Selected on Existing Conditions)

100 year
Design Storm

Peak Runoff Rate (from Previous Sheets)

Peak Runoff Rate (EXISTING)

q = 1.68 (cfs)

Peak Runoff Rate (PROPOSED)

q = 1.22 (cfs)

1

REQUIRED STORAGE CALCULATOR

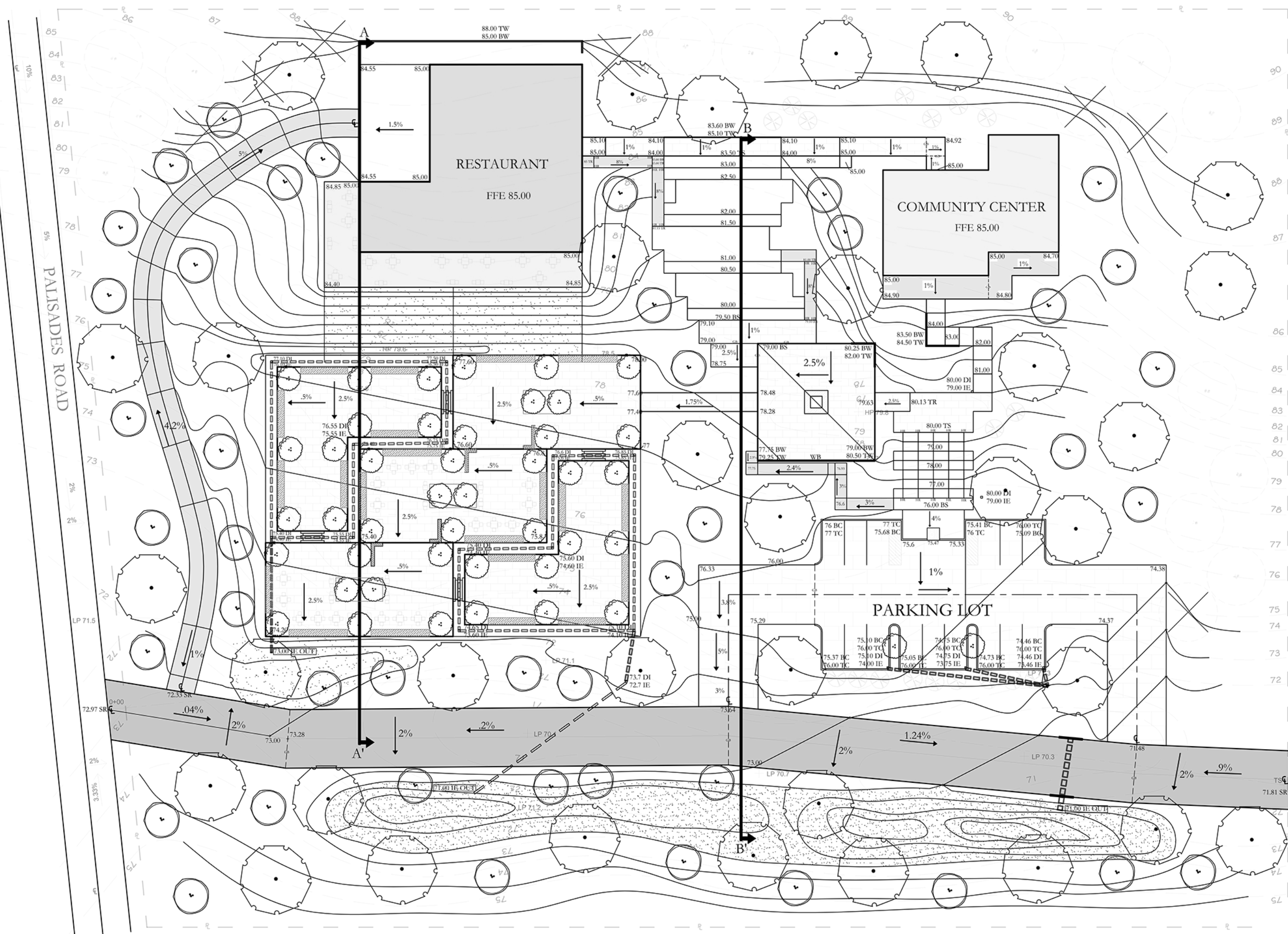
Storm Frequency	Duration (mins.)	Intensity (in/hr)	Max Inflow (cfs)	Max Outflow (cfs)	Inflow Volume (cfs)	Outflow Storage (cu ft)	Required Storage (cu ft)
100 year	59	1.56	1.21875	1.68	4340	5992	47
100 year	60	1.54	1.203125	1.68	4331	6057	73
100 year	60	1.54	1.203125	1.68	4331	6057	73
100 year	60	1.54	1.203125	1.68	4331	6057	73
100 year	60	1.54	1.203125	1.68	4331	6057	73
100 year	60	1.54	1.203125	1.68	4331	6057	73
100 year	60	1.54	1.203125	1.68	4331	6057	73
100 year	60	1.54	1.203125	1.68	4331	6057	73

REQUIRED STORAGE

485 cubic feet

Area and coefficients

Coefficient by Condition (C)				AREA by Condition - In Acres (A)			
Surface	Sandy Loam	Clay + Silt Loam	Clay	Sandy Loam	Clay + Silt Loam	Clay	
<i>Woodlands</i>							
flat, (0 - 5%)	0.10	0.30	0.40		0.77		0.29
rolling (5% -10%)	0.25	0.35	0.50				0.00
steep, (10% - 30%)	0.30	0.50	0.60				0.00
<i>Pasture + Lawns</i>							
flat, 0 - 5%	0.10	0.30	0.40		0.13		0.05
rolling (5% -10%)	0.16	0.36	0.55				0.00
steep, (10% - 30%)	0.22	0.42	0.60				0.00
<i>Cultivated or No Plant Cover</i>							
flat, 0 - 5%	0.30	0.50	0.60		0.02		0.01
rolling (5% -10%)	0.40	0.60	0.70				0.00
steep, (10% - 30%)	0.52	0.72	0.82				0.00
<i>Urban Surfaces</i>							
Roofs	0.80	0.88	0.95			0.02	0.02
Asphalt and Concrete Pavements	0.75	0.85	0.95	0.14			0.13
Brick	0.70	0.80	0.90				0.00
Gravel	0.35	0.55	0.70		0.14		0.10
Pervious Concrete	0.25	0.35	0.45				0.00
Pervious Asphalt	0.25	0.35	0.45				0.00
Pervious Pavers	0.25	0.35	0.45				0.00
Paving Stones	0.30	0.40	0.50				0.00
Landscaping	0.10	0.20	0.30				0.00
Woodchip Mulch	0.15	0.25	0.35	0.84			0.16
Crushed Aggregate	0.15	0.25	0.35	0.14			0.03
Decomposed Granite (D.G.)	0.30	0.40	0.50				0.00
Parks and Cemeteries	0.10	0.18	0.25				0.00
				1	1	0	0.78
				(C * A) TOTAL			
				Total Acres	2.20		



LEGEND

Existing Topography

Proposed Topography

Drain Line - 4 inch diameter

Centerline

DI - Drain Inlet

IE - Invert Elevation

Curb

Wall

Direction of Water Flow

HR - Hand Railing

SR - Start of Road

TW - Top of Wall

BW - Bottom of Wall

TC - Top of Curb

BC - Bottom of Curb

TS - Top of Stairs

BS - Bottom of Stairs

TR - Top of Ramp

BR - Bottom of Ramp

SR - Start of Road

Low Planter Bed

Retaining Wall

Warning Detection

Permeable Patio Pavers

PICP (Permeable Interlocking Concrete Pavers)

Concrete

Decomposed Granite (DG)

Quercus Agrifolia - Coast Live Oak

Quercus Tomentella - Island Oak

Cereis Occidentalis - Western Redbud

Arctostaphylos 'Howard McMinn' - Howard McMinn

Manzanita

PLANTING LEGEND

SLOPES/EROSION CONTROL

Ceanothus 'Centennial' - Centennial Ceanothus

Baccharis pilularis 'Pigeon Point' - Dwarf Coyote Brush

Eriogonum fasciculatum - California Buckwheat

Festuca californica - California Fescue

STORMWATER TREATMENT

Juncus patens - Common Rush

Carex praegracilis - California Field Sedge

Elymus condensatus - Giant Wild Rye

LIGHT CANOPY

Arctostaphylos 'Howard McMinn' - HM Manzanita

Cereis occidentalis - Western Redbud

FIRE REGROWTH

Acmispn glaber - Deer Weed

Salvia sonomensis - Sonoma Sage

Ceanothus spinosus - Greenbark Ceanothus

Achillea millefolium - Yarrow

Papaver californicum - Western Poppy

Sheet No. 1/2

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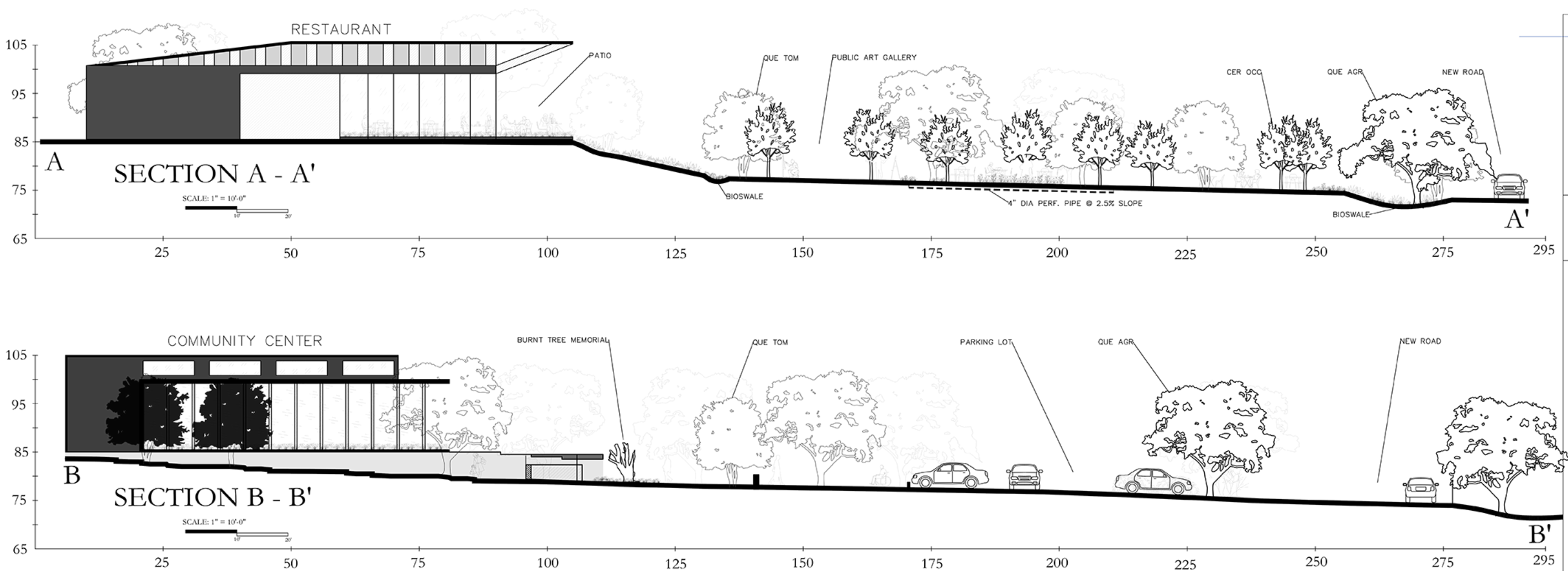
LA 241

PROF. GRETCHEN STRANZL MCANN

SITE PLAN

Scale: 1" = 20'-0"

NORTH



Design

The goal of this project was to re-imagine and revitalize this barren site after the 2025 Palisades Fires as a space for healing, reflection, and renewed connection. I wanted to focus on keeping the layout calming and simple, in order for visitors to best experience the space. A clear orthogonal layout that focuses on symmetry and perpendicular lines to create balance, orientation, and a sense of calm. The central plaza holds a preserved burnt tree stump, which serves as a center piece and a memorial to the tragedy before. The planting radiates outward in stages of regrowth to reflect the natural recovery process after fire. I placed both the restaurant and the community center up at the high points to provide the best view of the surrounding land, and emphasized large windows and patio seating for the diners. The largest plaza area includes multiple tables and benches in between the redbuds and planting beds. There are two secluded areas designed for public art galleries and appreciation. I kept the grading subtle so the space feels accessible and grounded, while the symmetry and geometry help reinforce tranquility and a strong sense of place. My goal was to create an environment where people can slowly re-acclimate to a landscape that may hold difficult memories and experience it in a peaceful, restorative way.

Sustainability

Sustainable practices are integrated throughout the design, particularly in stormwater management, permeable pavement, and planting strategy. I manage runoff through an interconnected system that includes bioswales, permeable pavers, and decomposed granite paths to reduce impervious surfaces and promote infiltration. I made an effort to use bioswales and conscious planting in order to enhance the aesthetics of the design while also maintaining the function. The planting palette emphasizes low-water, low-maintenance, and fire-adapted native species. I also minimized environmental impact by balancing cut and fill, resulting in about 700 cubic yards of net fill, reducing hauling and material waste. Together, these strategies create a site that functions efficiently, restores ecological processes, and demonstrates a responsible and resilient approach to design.

SITES: SUSTAINABILITY	
SITES CATEGORY	PROJECT STRATEGY
SITE CONTEXT	POST-FIRE REVITALIZATION
WATER	BIOSWALES
	PERMEABLE PAVERS
	DECOMPOSED GRANITE PATHS
SOIL AND VEGETATION	PERFORATED PIPES
	LOW-WATER NATIVE PLANTING
	SOIL STABILIZING PLANTING
MATERIALS	PERMEABLE PAVERS (PICP)
	BALANCED CUT AND FILL
HUMAN HEALTH AND WELL BEING	ADA ACCESSIBLE
	PUBLIC ART
	COMMUNITY GATHERING

PERMEABLE SURFACES		
MATERIAL	SQ FT.	% OF SITE
CONCRETE	12,569	6.10%
ASPHALT	17,747	8.60%
PERMEABLE	175,309	85.30%

EARTHWORK		
DESCRIPTION	UNADJUSTED (CY)	ADJUSTED (CY)
CUT VOLUME	2,519.8300	3,023.8000
FILL VOLUME	3,262.7700	3,752.1900
NET VOLUME (FILL)	742.9400	728.3900

Cut Factor: 1.2
Fill Factor: 1.15



ZACH LAWLER

TERRACED COMMONS
PACIFIC PALISADES, LOS ANGELES
LA 241 WINTER 26

Sheet No. 2/2

L-2

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STRANZL MCANN